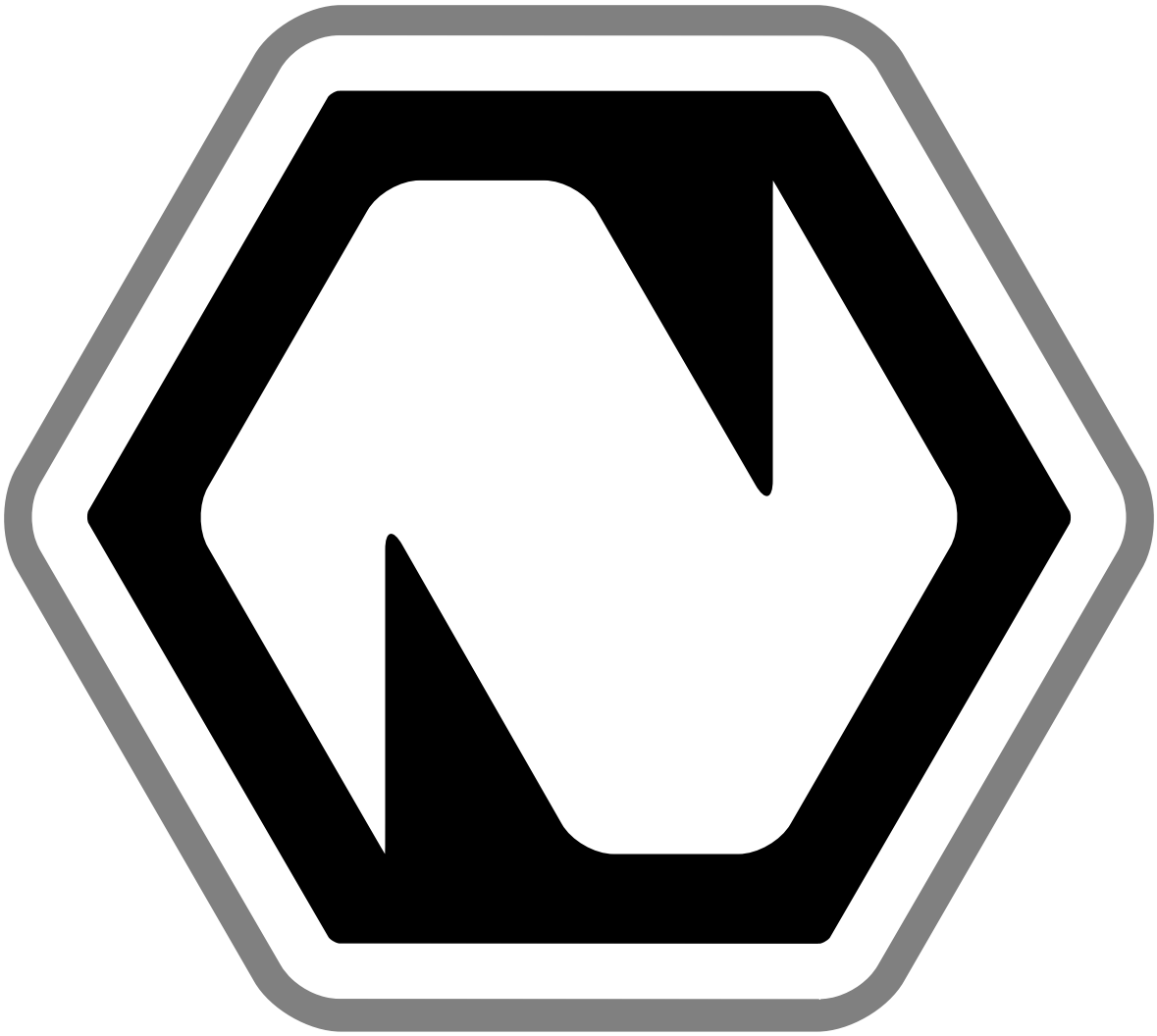

# Natron Documentation

***Release 2.5.0***

**The Natron documentation authors**

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The Natron documentation is organized as follows:

- The *User Guide* contains everything to get started with Natron, including tutorials.
- The *Reference Guide* contains the documentation about the user settings and environment variables for Natron, as well as the documentation for each node in Natron.
- The *Developers Guide* contains documentation about using the Python scripting language within Natron, and using the Natron command-line interface (a.k.a. NatronRenderer).

This documentation is also available online and can be downloaded as a PDF, HTML zip or ePub file.

This manual is maintained largely by volunteers.

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CHAPTER

ONE

# USER GUIDE

Natron is an open source video compositing and special effects software for Windows, macOS and Linux.

This guide will help you getting started using Natron for compositing and visual effects.

## 1.1 What is compositing?

Compositing is the combining of visual elements from separate sources into single images, often to create the illusion that all those elements are parts of the same scene [Wikipedia].

Typical examples of compositing are, for example:

- The superimposition of a character filmed on a green background over a scene shot in another place, at another time, or a computer-generated scene;
- The manual detouring (also called rotoscopy) of an element in a video to embed it in another video, possibly with a different motion;
- Artistic modifications of a video, after shooting a live-action scene or rendering a CGI scene, in order to modify its lighting, colors, depth of field, camera motion, or to remove noise or add film grain.

A video compositing software is not a 3D computer graphics software, like Blender or Maya, but it is perfectly suited for combining computer-generated elements produced by other software with live-action video or 2D animation. Rather than rendering a full 3D scene with the 3D software, which may cost many hours of computation, the video compositing software can assemble the elements produced separately with a much more reactive interface and an almost instantaneous visual feedback.

### 1.1.1 Theory

The math behind compositing was formalized by Porter & Duff [PorterDuff1984] after the preliminary work by Wallace [Wallace1981]. More information about the theory behind compositing can be found in the works of Jim Blinn [Blinn1994a] [Blinn1994b] and Alvy Ray Smith [Smith1995].

The compositing theory also introduces the notion of "premultipled" RGB values, or "associated alpha", and there is still a lot of debate about premultiplying or not.

Natron made the choice of using premultiplied alpha by default in the compositing workflow, like all modern compositing software, because images are stored internally with floating-point values.

### 1.1.2 Practice

There are excellent books that introduce how to do compositing in practice, and how to use compositing software: [Wright2010], [Brinkmann2008], [Lanier2009], [VES2014].

Most of what is described in these books also apply to Natron. It is thus strongly recommended to become familiar with the techniques and workflows described in these books before starting to use Natron.

There are also video tutorials available on video streaming platforms (youtube, vimeo) for Natron or other reference compositing software, such as Nuke or Fusion. These tutorials can be used to get acquainted with compositing.

## 1.2 Getting started

### 1.2.1 About

#### Features

- 32 bits floating point linear color processing pipeline.
- Colorspace management handled by the famous open-source OpenColorIO library.
- Dozens of file formats supported: EXR, DPX,TIFF, PSD, SVG, Raw, JPG, PNG ...
- **Support for many free and open-source OpenFX plugins:** * OpenFX-IO * OpenFX-Misc * OpenFX-Arena * OpenFX-G'MIC * OpenFX-OpenCV * OpenFX-Yadif deinterlacer * OpenFX-Vegas SDK samples * OpenFX samples * TuttleOFX
- **Support for commercial OpenFX plugins:** * RevisionFX products * NeatVideo denoiser * Furnace by The Foundry * KeyLight by The Foundry * GenArts Sapphire * Other GenArts products * And many more.... * OpenFX v1.4 supported
- **Intuitive user interface:** Natron aims not to break habits by providing an intuitive and familiar user interface. It is possible to separate on any number of screens the graphical user interface. It supports Retina screens on MacOSX.
- **Performances:** Never wait for anything to be rendered, in Natron anything you do produces real-time feedback thanks to its optimised multi-threaded rendering pipeline and its support for proxy rendering (i.e: the render pipeline can be computed at lower res to speed-up rendering).
- **Multi-task:** Natron can render multiple graphs at the same time and make use of 100% of the compute power of your CPU.
- **Network rendering:** Natron can be used as a command-line tool and can be integrated on a render farm manager such as Afanasy.
- **NatronRenderer:** A command line tool for execution of project files and python scripts. The command line version is executable from ssh on a computer without any display.
- **Fast & interactive Viewer** – Smooth & accurate zooming/panning even for very large image sizes (tested on 27k x 30k images).
- **Real-time playback:** Natron offers a real-time playback with thanks to its RAM/Disk cache technology. Once a frame is rendered, it can be reproduced instantly afterwards, even for large image sizes.
- **Low hardware requirements:** All you need is an x86 64 bits or 32 bits processor, at least 3 GB of RAM and a graphic card that supports OpenGL 2.0 or OpenGL 1.5 with some extensions.
- **Motion editing:** Natron offers a simple and efficient way to deal with keyframes with a very accurate and intuitive curve editor. You can set expressions on animation curves to create easy and believable motion for objects. Natron also incorporates a fully featured dope-sheet to quickly edit clips and keyframes in time-space.
- **Multi-view workflow:** Natron saves time by keeping all the views in the same stream. You can separate the views at any time with the OneView node.

- **Rotoscoping/Rotopainting:** Edit your masks and animate them to work with complex shots
- **Tracker node:** A point tracker is embedded in Natron to track multiple points. Version 2.1 of Natron will incorporate the Tracker from Blender.

### FAQ

#### Can I use Natron for commercial work?

Yes. Anything you create with Natron is yours and you're free to do anything you want with it.

#### What operating systems are supported by Natron?

Natron officially supports:

- Windows 7, 8 and 10 with latest service packs.
- MacOSX 10.6 or greater
- Linux 2.6.18 or greater (Glibc 2.12+/libgcc 4.4+)

#### Why did you make Natron free of charge?

Our original motives were to create a tool for people who needed it and that may felt left-aside by the software editors pricing plans, that is:

- Students who want to learn compositing at home
- Schools that may not be able to buy expensive software licenses

Another reason why Natron was developped mainly at INRIA is because a compositing software is a playground that enables scientists in computer vision/graphics to develop, test exchange and publish results easily on such platform.

One great mission of a free open-source software is to aim to create common practises so everyone can benefit of it.

On the other hand, being free of charge, Natron can be installed on large-scale render farms without wondering about licensing issues.

#### What is OpenFX?

OpenFX is a standard for creating visual effects plug-ins for compositing and editor applications.

As of today several applications are compatible with this plug-in format: (meaning you can use the same plug-ins in all of them)

- Nuke 5.1+, by The Foundry
- Vegas 10+, by Sony
- SCRATCH 6.1+, by Assimilate
- Fusion 5.1+, by Blackmagic Design (formerly by eyeon)
- DaVinci Resolve 10+, by Blackmagic Design
- DustBuster+ 4.5+, by HS-ART
- Baselight 2.2+ by FilmLight
- Nucoda Film Master 2011.2.058+
- SGO Mistika 6.5.35+

- Autodesk Toxik 2009+
- Avid DS 10.3+
- Natron
- ButtleOFX
- TuttleOFX

### Can I use commercial and proprietary plug-ins within Natron?

Yes. Natron doesn't limit you to open-source plug-ins.

### Is my graphics card supported?

An OpenGL 2.0 compatible graphics card is needed to run Natron (2.1+) with hardware-accelerated rendering. Other graphics cards work with software-only rendering (see below).

The following graphics cards are supported for hardware-accelerated rendering:

- Intel GMA 3150 (Linux-only)
- Intel GMA X3xxx (Linux-only)
- Intel GMA X4xxx (Windows 7 & Linux)
- Intel HD (Ironlake) (Windows 7 & Linux)
- Intel HD 2000/3000 (Sandy Bridge) (Windows 7/Linux/Mac)
- Intel HD 4000 and greater (All platforms)
- Nvidia GeForce 6 series and greater
- Nvidia Quadro FX and greater
- Nvidia Quadro NVS 285 and greater
- ATI/AMD Radeon R300 and greater
- ATI/AMD FireGL T2-64 and greater (FirePro)

Cards not listed here will probably not support hardware-accelerated rendering.

On Windows and Linux you can enable software rendering. On Linux, enable the environment variable LIBGL_ALWAYS_SOFTWARE=1 before running Natron. On Windows, enable the legacy hardware package in the installer.

## Main Concepts

### Generic Description

The purpose of Natron is to process video images using elementary "effect" bricks called nodes.

### Image Layers and Channels

In natron an image is only a stack of black and white images called channels. channels are grouped in layers. The Color layer is the base layer. Color layer has channels R,G,B,A. R,G,B codes the color of the pixels in Red Green blue. A codes the transparency of the pixel called Alpha. When A=0 the pixel is transparent. When A=1 the pixel is opaque The image can have as many layers as you want describing, the motion, the depth of your image or whatever else you want

---

**Note:** You cannot see the stacking of the layers as in as in Photoshop or After Effects. In Natron you will have different branches of your node tree that are Merged together. The Merge node is the good way to stack layers.

---

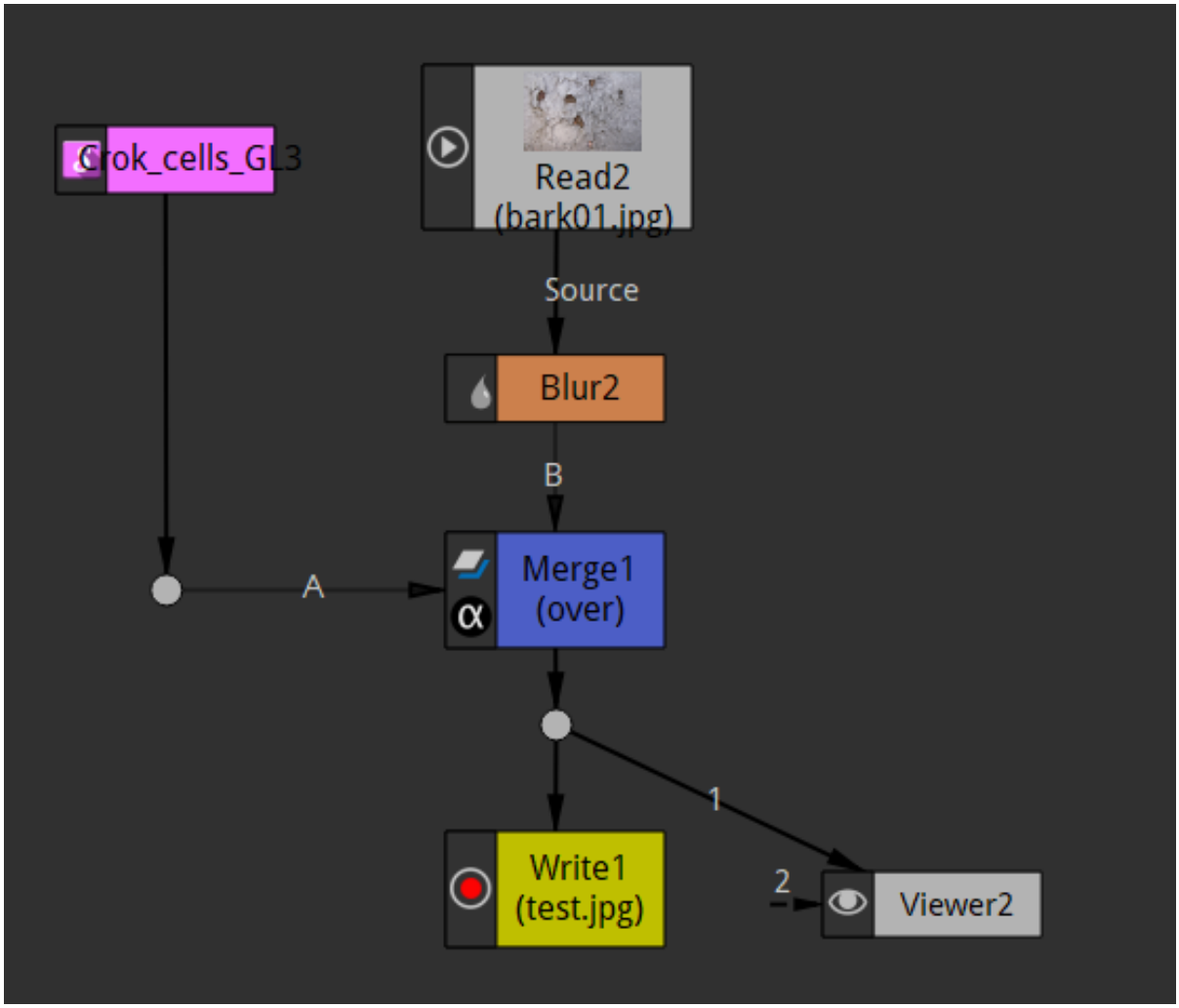
### Image Flow

The image is processed, in order, passing through each node. The nodes are connected with links that define the order of the processing. These connected nodes are called the node graph.

---

**Note:** If you place your nodes in a top to bottom order you can compare your process to water flowing in pipes that will be collected as a result in the last node of the graph.

---

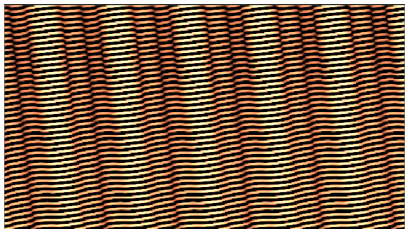



Here is what happens in the node graph shown above.

We bring an image with the read node (grey).

Then we blur it with the Blur Node (orange).

We create a repetitive texture with the cell node.



Sometimes procedural images can be generated from scratch in Natron. This is the only case when a node has no input.

We mix together both images with a merge node (blue). The mixer nodes can have several inputs

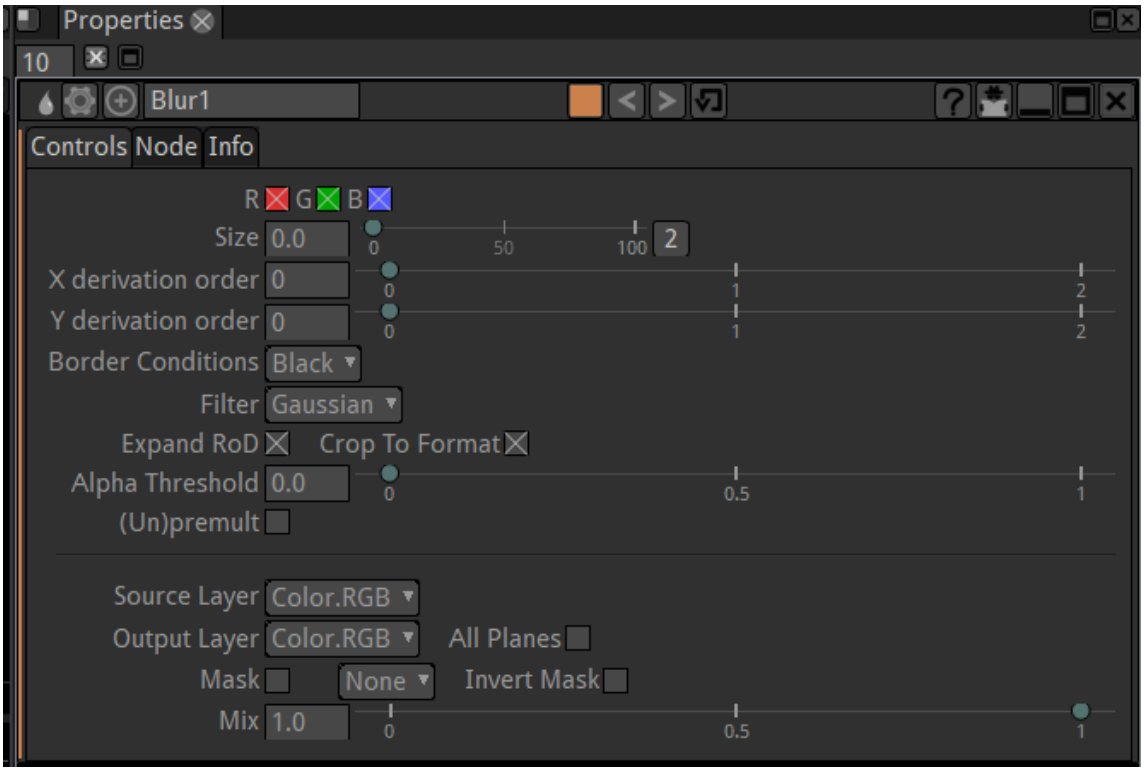
To see the result in the viewer we connect the Viewer node to the output of the Merge.

To save the result to disk, we connect the Write node (yellow). The result will only be saved to disk if we launch the render of the image by clicking “render” in the node properties or Render menu A node can have only one resulting output image. This one result can still be used by several nodes (here Write and Viewer, thus appearing like multiple output connections). Here we use a “dot” node to avoid this ambiguous situation

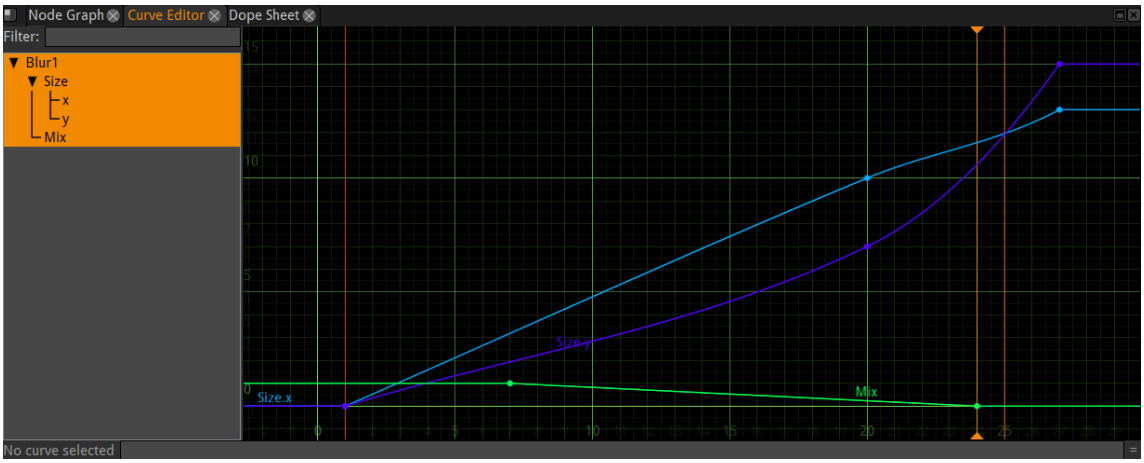
### Parameters

Each node has parameters allowing to customize the effect produced on the incoming image. (e.g. the size of the blur in the Blur node). We can modify these parameters in several ways:

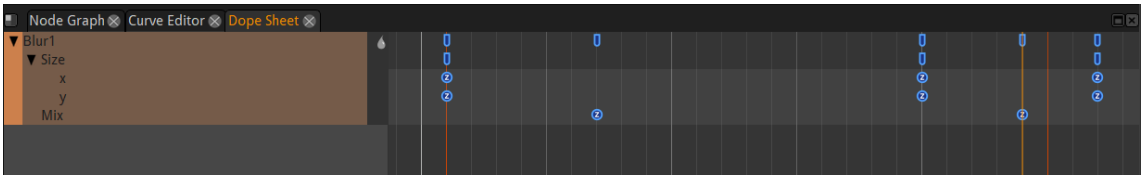
**Properties pane:**
Here we can move sliders, type in numbers to change their values




**Curve editor:**
When parameters are animated along time, their value can be displayed and modified as a curve.




**Dope sheet:**
Here each keyframe value you entered for parameters are displayed as small blocks that you can move in time (left-right). This is handy to retime an animation without modifying its content.



**Note:** One big difference with a paint program is we don't often paint on the image. This would not be handy for processing video as the paint strokes would appear as jittering artifacts if we painted one frame after the other.

#### Non destructive workflow

In the `.ntp` project files saved by Natron no actual pixels are stored. Only the description of the graph is stored.

To display an image in the viewer, Natron reloads the source files, reprocesses each node one after the other then bring it to the display.

This has several implications:

- Your source files will never be damaged by Natron (unless you use a write node to overwrite your source, wich you should never do).
- You have unlimited undos in Natron as you can always remove a node from the graph. You can always change your mind. (regular undos are still provided in the menus).
- You must keep your source video files as they are not stored in the project file. If you change their folder location you will have to update the paths in Natron. If you want to bring a project to another computer you must carry the source files too.
- A lot of reprocessing is required. To keep your computer responsive, Natron provides a caching mechanism to limit recalcutions. This is very memory hungry and you have a "Cache" menu (and preferences) to help you keep Natron's responsiveness.

### 1.2.2 Installation

This chapter will guide you through the installation of Natron on Windows, Mac and Linux.

#### Windows

This chapter will guide your through the installation and maintenance of Natron on Windows.

#### Requirements

Natron will work on Windows 7, 8.x, 10 with latest updates.

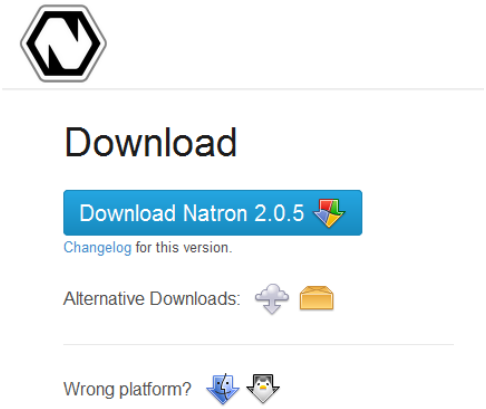
The basic requirements are:

- x86 compatible CPU (Core2 x86_64 or higher recommended)
- **OpenGL 2.0 or higher with the following extensions:**
  - **GL_ARB_texture_non_power_of_two** *(Viewer and OpenGL rendering)*
  - **GL_ARB_shader_objects** *(Viewer and OpenGL rendering)*
  - **GL_ARB_vertex_buffer_object** *(Viewer and OpenGL rendering)*
  - **GL_ARB_pixel_buffer_object** *(Viewer and OpenGL rendering)*
  - **GL_ARB_vertex_array_object** or **GL_APPLE_vertex_array_object** *(OpenGL rendering only)*
  - **GL_ARB_framebuffer_object** or **GL_EXT_framebuffer_object** *(OpenGL rendering only)*
  - **GL_ARB_texture_float** *(OpenGL rendering only)*

If you don't have the minimum required OpenGL extensions we provide a Software OpenGL solution, install the package *Software OpenGL* from the installer. If you have the portable ZIP file copy *bin\mesa\opengl32.dll* to *bin*.

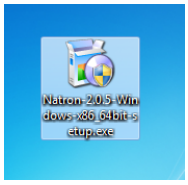
### Download

Navigate to https://natrongithub.github.io/#download and download the latest version. This documentation will assume that you downloaded the installer (our default and recommended choice).

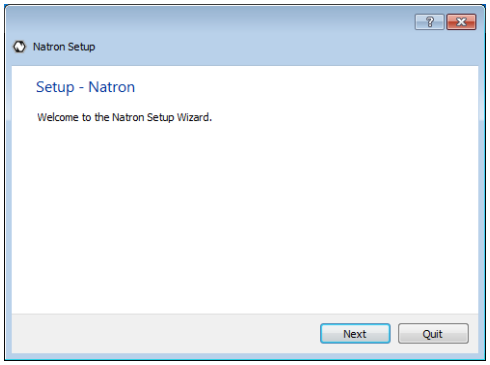



### Install

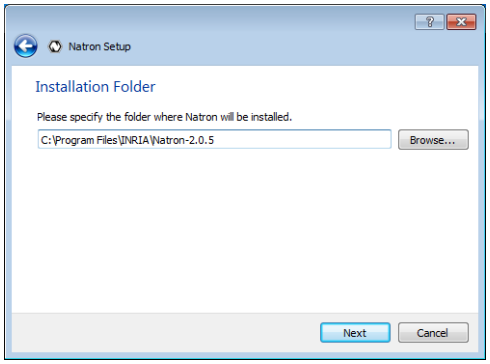
You are now ready to start the installation, double-click on the setup file to start the installation.



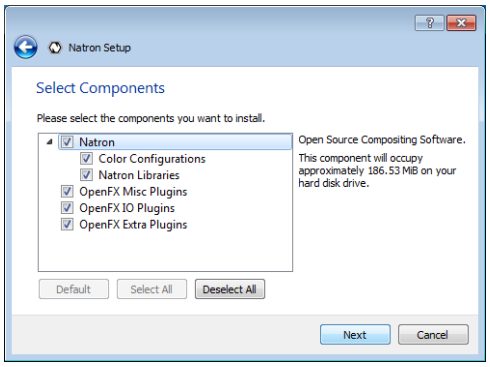

You should now be greated with the installation wizard.



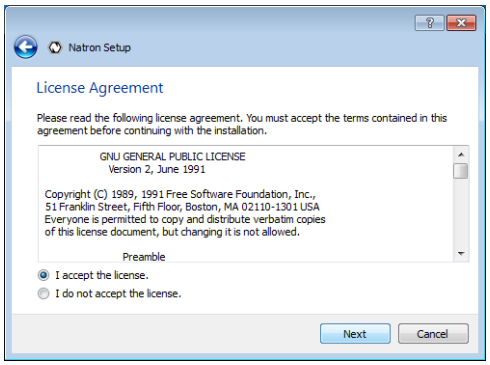

Click 'Next' to start the installation, you first option is where to install Natron. The default location is recommended.



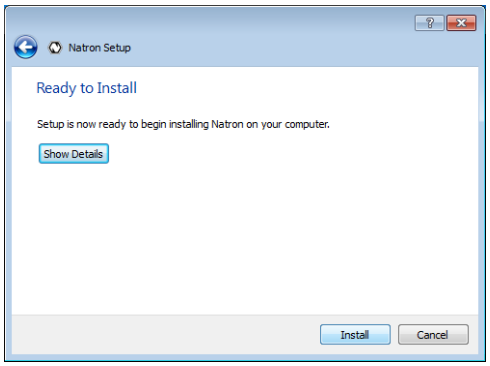
Your next option is the package selection, most users should accept the default. Each package has an more in-depth description if you want to know what they provide.



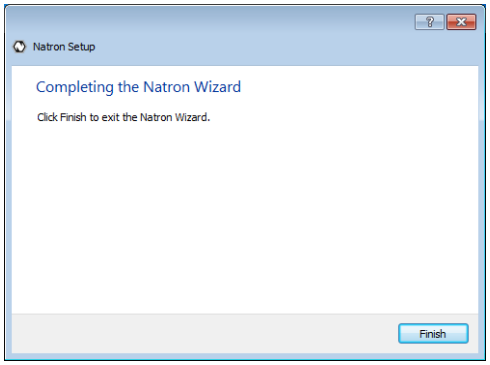

Then comes the standard license agreement, Natron and it's plug-ins are licensed under the GPL version 2. You can read more about the licenses for each component included in Natron after installation (in menu Help→About).



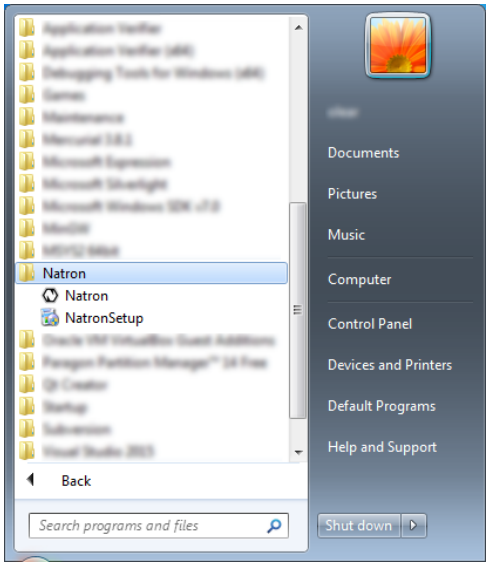

The installation wizard is now ready to install Natron on your computer. The process should not take more than a minute or two (depending on your computer).




The installation is now over! Start Natron and enjoy.

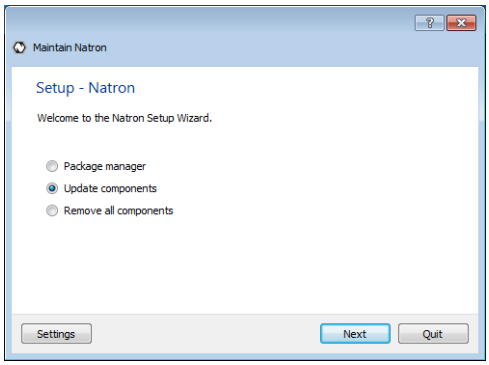


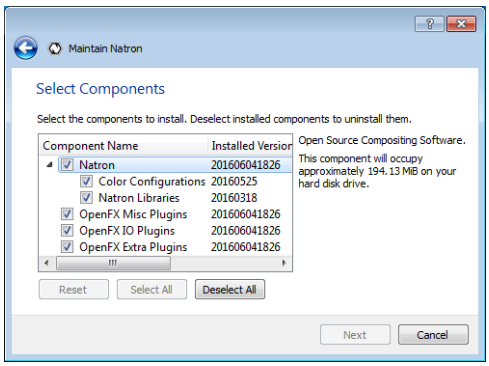

Natron can now be started from the desktop icon or from the start menu.




## Maintenance

Natron includes a maintenance tool called 'NatronSetup', with this application you can easily upgrade Natron and it's components when a new version is available. You can also add or remove individual packages, or remove Natron completely. The application should be in the same start menu folder as Natron, or you can start it from the folder where you installed Natron.




The application also include a basic settings category, where you can configure proxy and other advanced options.

### macOS

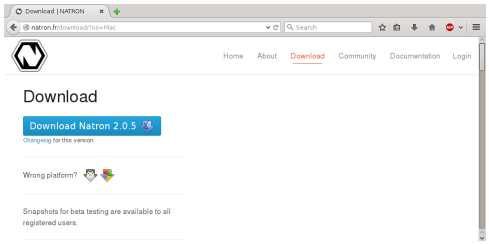
This chapter will guide your through the installation of Natron on macOS (formerly known as Mac OS X or OS X).

### Requirements

- Mac OS X 10.6 (Snow Leopard) or higher
- x86 compatible CPU (Core2 x86_64 or higher recommended)
- **OpenGL 2.0 or higher with the following extensions:**
  - **GL_ARB_texture_non_power_of_two** *(Viewer and OpenGL rendering)*
  - **GL_ARB_shader_objects** *(Viewer and OpenGL rendering)*
  - **GL_ARB_vertex_buffer_object** *(Viewer and OpenGL rendering)*
  - **GL_ARB_pixel_buffer_object** *(Viewer and OpenGL rendering)*
  - **GL_ARB_vertex_array_object** or **GL_APPLE_vertex_array_object** *(OpenGL rendering only)*
  - **GL_ARB_framebuffer_object** or **GL_EXT_framebuffer_object** *(OpenGL rendering only)*
  - **GL_ARB_texture_float** *(OpenGL rendering only)*

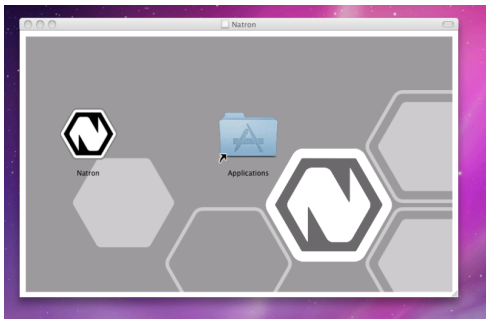
### Download

Navigate to https://natrongithub.github.io/#download and download the latest version.




### Install

Double-click the DMG file and copy Natron where you want it.



### Run

On OS X 10.7 and later, you may get the message *"Natron has not been signed by a recognized distributor and may damage your computer. You should move it to the trash"*.

The macOS binaries are not signed with an Apple Developer ID, because of incompatibilities between the Apple code signing tools and the compiler (GCC 4.9) and target OS (Mac OS X 10.6) we use.

There are at least four options to launch Natron on macOS:

- rather than double-clicking on the Natron application, right-click or control-click on it and select Open
- after an unsuccessful launch of Natron, go to the Security & Privacy preferences panel, and enable it.
- from the terminal command-line, execute `spctl --add /Applications/Natron.app`, as explained in this OSXDaily article.
- (not recommended) click "Allow apps downloaded from: Anywhere" in the Security & Privacy preferences panel. Since macOS 10.12 Sierra, this option is not available anymore, but it is possible to re-enable it, as explained in that OSXDaily article.

## Linux

This chapter will guide your through the installation and maintenance of Natron on Linux.

### Requirements

Natron will work on any Linux distribution which still receives seccurity updates. This includes (but not limited to):

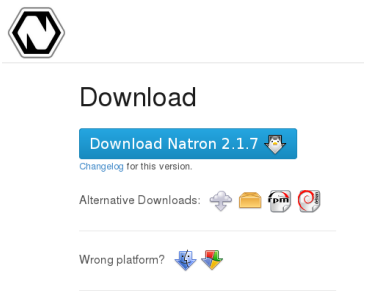
- CentOS / RHEL 7 and later
- Debian 8 "Jessie" and later
- Ubuntu 16.04 LTS (Xenial Xerus) and later
- Fedora 32 and later

The official binaries are built on CentOS 7, thus the basic system requirements are:

- x86 compatible CPU (Core2 x86_64 or higher recommended)
- Linux 2.6.32 and higher
- Glibc 2.12 and higher
- libgcc 4.4 and higher
- **OpenGL 2.0 or higher with the following extensions:**
  - **GL_ARB_texture_non_power_of_two** *(Viewer and OpenGL rendering)*
  - **GL_ARB_shader_objects** *(Viewer and OpenGL rendering)*
  - **GL_ARB_vertex_buffer_object** *(Viewer and OpenGL rendering)*
  - **GL_ARB_pixel_buffer_object** *(Viewer and OpenGL rendering)*
  - **GL_ARB_vertex_array_object** or **GL_APPLE_vertex_array_object** *(OpenGL rendering only)*
  - **GL_ARB_framebuffer_object** or **GL_EXT_framebuffer_object** *(OpenGL rendering only)*
  - **GL_ARB_texture_float** *(OpenGL rendering only)*

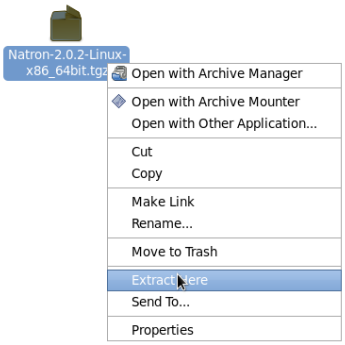
### Download

Navigate to https://natrongithub.github.io/1#download and download the latest version. This documentation will assume that you downloaded the installer (our default and recommended choice).




### Extract

When the file has been downloaded, extract the file. This can be done in your file browser, usually just right-click and select 'Extract Here'.

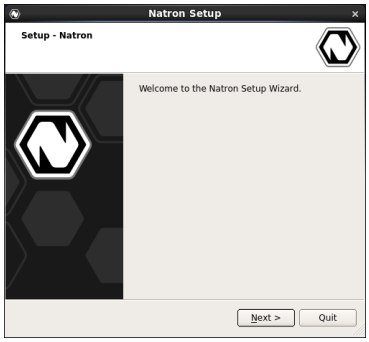



### Install

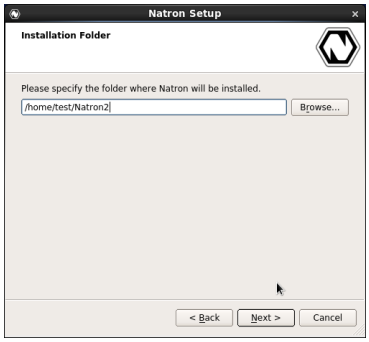
You are now ready to start the installation, double-click on the extracted file to start the installation.

*On some installations you are not allowed to execute downloaded files, right-click and select properties, then tick the 'Execute file as program' option. This option may have a different name depending on your distribution and desktop environment. You can also make the file executable through the terminal, type chmod +x filename.*

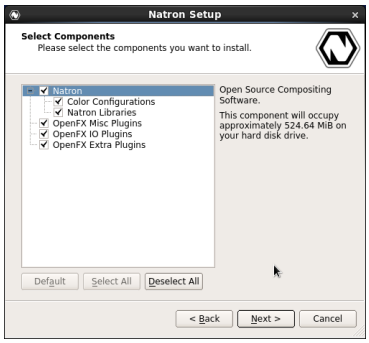
You should now be greated with the installation wizard.



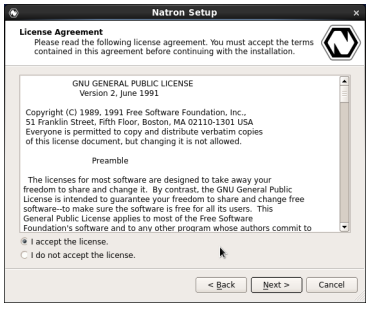

Click 'Next' to start the installation, you first option is where to install Natron. Usually the default location is good enough. If you select a installation path outside your home directory you will need to supply the root (administrator) password before you can continue.



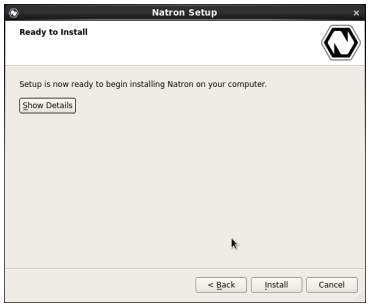

Your next option is the package selection, most users should accept the default. Each package has an more in-depth description if you want to know what they provide.



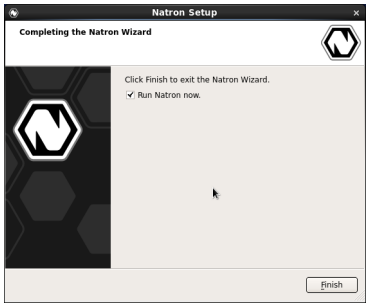

Then comes the standard license agreement, Natron and it's plug-ins are licensed under the GPL version 2. You can read more about the licenses for each component included in Natron after installation (in Help=>About).



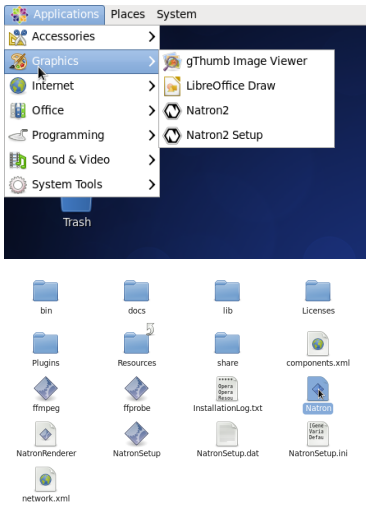

The installation wizard is now ready to install Natron on your computer. The process should not take more than a minute or two (depending on your computer).




The installation is now over! Start Natron and enjoy.

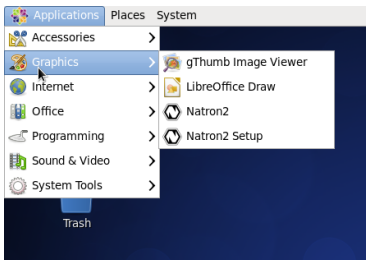


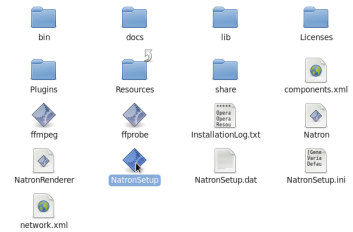

Natron can be started from the desktop menu (under Graphics) or by executing the 'Natron' file in the folder you installed Natron.

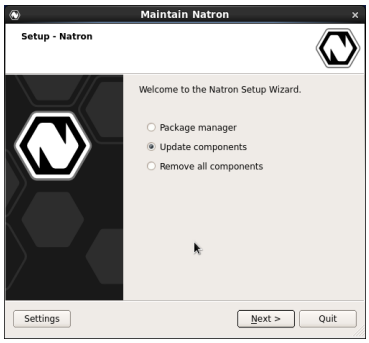



## Maintenance

Natron includes a maintenance tool called 'NatronSetup', with this application you can easily upgrade Natron and it's components when a new version is available. You can also add or remove individual packages, or remove Natron completely. The application is in the 'Graphics' section in the desktop menu, or you can start it from the folder where you installed Natron.






The application also include a basic settings category, where you can configure proxy and other advanced options.

#### Advanced installation

Natron also has RPM and DEB packages, these are recommended for multi-user installations or for deployment on more than one machine. You can find more information on our website at https://natrongithub.github.io/ .

### 1.2.3 Additional Elements

#### Community scripts

Many scripts that bring additional functionality can be downloaded from: https://github.com/NatronGitHub/natron-python-scripting

To install these:

- Copy the content of this repository to your .Natron folder.:ref: 'Natron plug-in paths'
- Restart Natron
- Enjoy the new items available mostly in Tools and Edit menu.

These tool add predefined roto shapes, multilayer EXR extraction, node connexion tools, and more. They will bring Natron closer to the Nuke interface. Albeit experimental, these scripts are a recommended download, more specifically for previous Nuke users.

#### Community plugins

Additional Python plugins (PyPlugs) can be downloaded from: https://github.com/NatronGitHub/natron-plugins

To install these:

- Copy the content of this repository to any folder of your choice.
- Open Natron preferences from the menubar, select Plugins->PyPlugs search path->Add.. and enter the extracted file location.
- Save preferences.
- Restart Natron.
- Enjoy the new tools available in the left toolbar.

These tools bring animated textures for motion designers, as well as most common Nuke gizmos (DespillMadness, PushPixel,...). Albeit experimental these scripts are a recommended download.

### 1.2.4 Nuke to Natron transition guide

This document is an very incomplete stage.

Natron and Nuke are very similar. We will focus here on the differences between them.

#### Nodes names

Many nodes have similar names in Natron and Nuke. Here are the the ones thar are different

| Nuke | Natron |
|---|---|
| CurveTool | ImageStatistics |
| Copy | Shuffle |

#### What's not in Nuke?

1. Cloning node groups and pyplugs is possible. This is very powerful as it mean you can apply the same complex process to different images without constantly copy / pasting when you change parameters. Beware that the nodes connexions must not be changed. Only the node parameters are be updated, not their connexions.
2. Cloning roto nodes.
3. Hide the unmodified parameters of a node. In Natron, click on the 4th icon from the right in the properties panel. This will make the window far more readable and help you focus on what you're working on.

#### What's not in Natron?

1. Mainly 3D functions are not implemented. But Natron is very good for compositing 3D images from other software. For example multi pass EXR generated by Blender or other 3D software.
2. Some missing features can be filled by adding OpenFX plugins from other software vendors.

---

**Note:** **Tip:** CommunityScripts have a tool named PMCard3D and PMcamera that bring minimal 3D functionality.

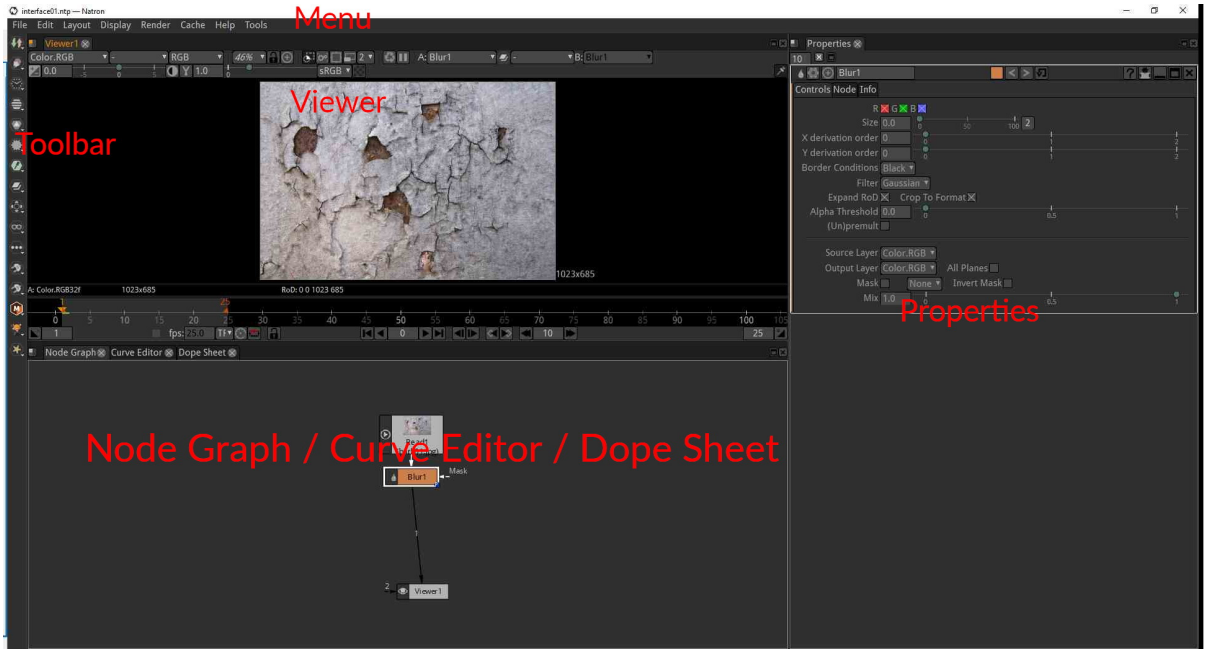
---

#### Python scripting

To get the value of a pixel in Natron, use the ImageStatistics node with a 1x1 rectangle, and retrieve the pixel value from the statMean parameter.

### 1.2.5 Environment

The interface of Natron is composed of different elements




Standard layout of Natron

### Generic Description

The purpose of Natron is to process video images using elementary "effect" bricks called nodes.

See: *Main concepts*

The image is processed in order passing through each node. The nodes are connected with links that define the order of the processing. These connected nodes are called the node graph.

Each node has parameters allowing to customize the effect produced on the incoming image.

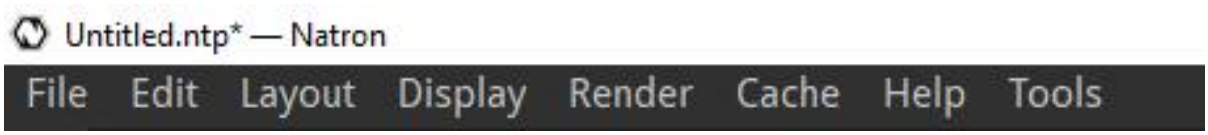
### The Toolbar

It is the list of icons on the left-hand side of Natron.

Each icon is a menu giving access to different categories of nodes (ie. image processing tools) that Natron offers to process or create images.

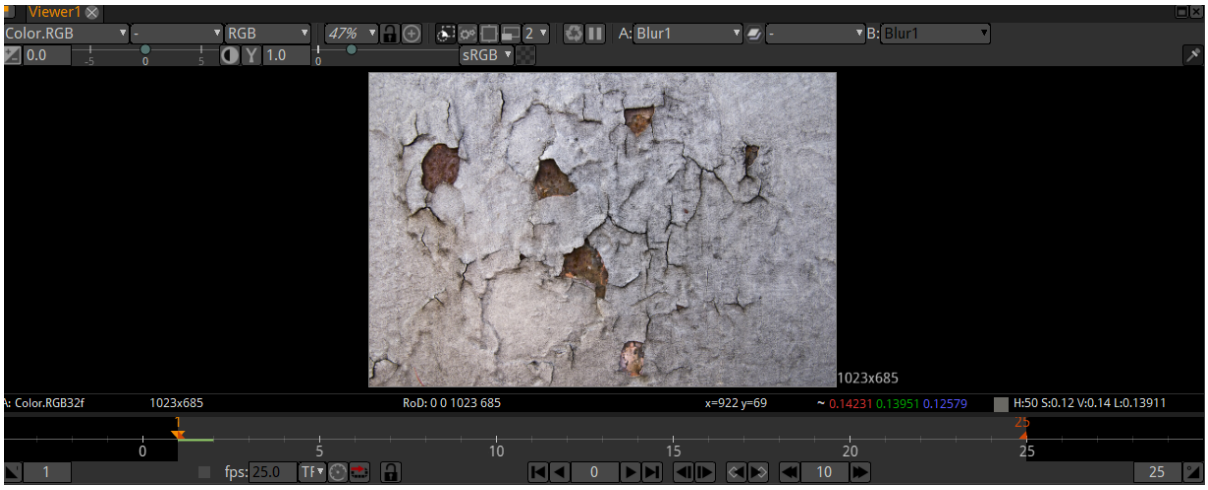
See *the Toolbar section*

### The Menu bar



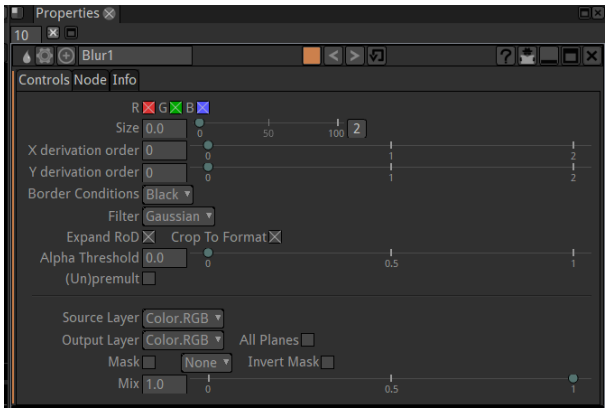

Located on top of Natron window, it gives acces to various actions other than adding nodes to the node graph. Most actions are done on the whole project like saving, rendering…

### The Viewer panel



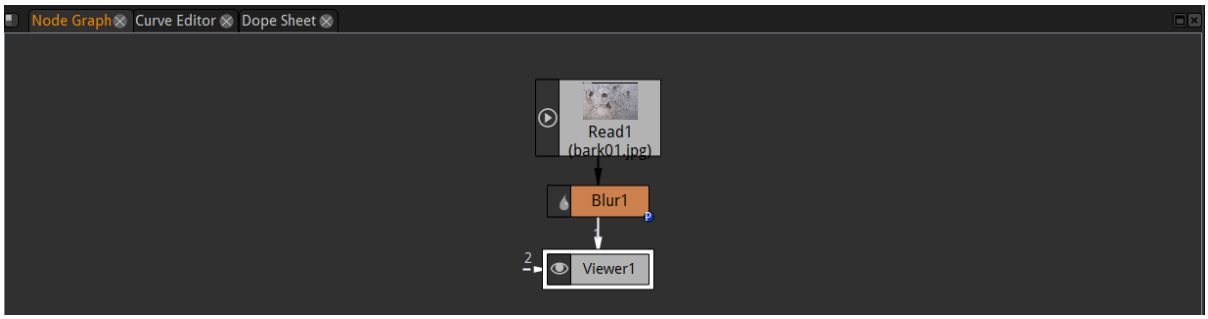

Here is displayed the result of the image processing. To choose what is displayed, each viewer is related to a viewer node in the graph that can be connected to any intermediate point in the graph.

### The Properties editor




This panel shows the parameters of one or several nodes from the graph.

### The Node graph

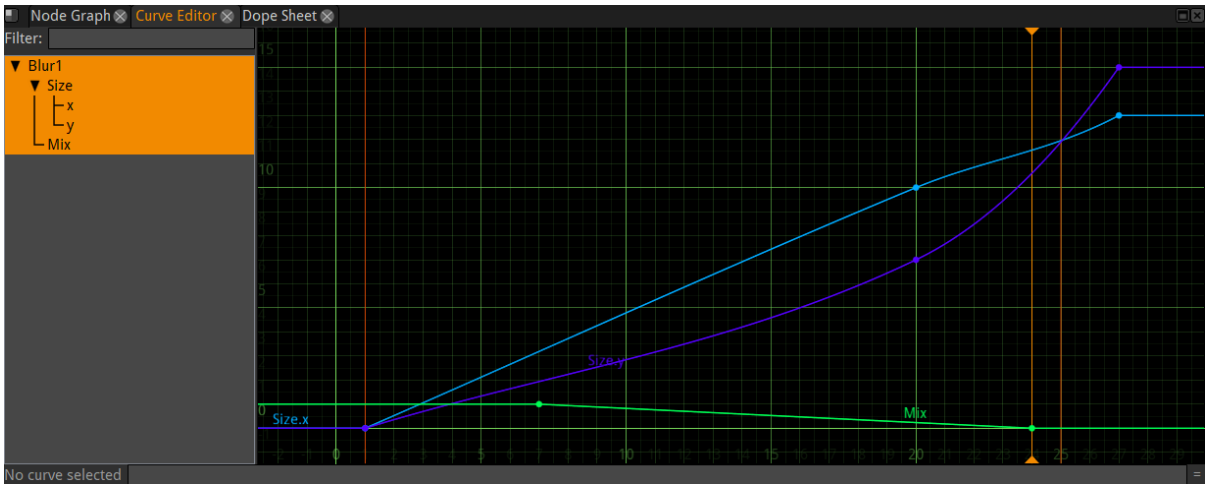



This panel is were connections are made between the nodes to define the processing order of the image.

See: *Nodes* for informations on using nodes one by one.

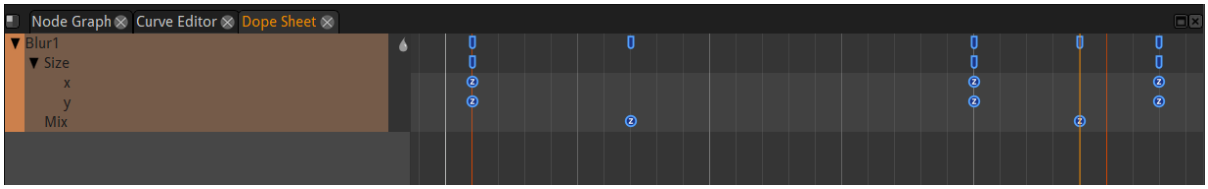
See: *Nodegraph* for informations on creating a Node Graph to process your images

### The Curve editor



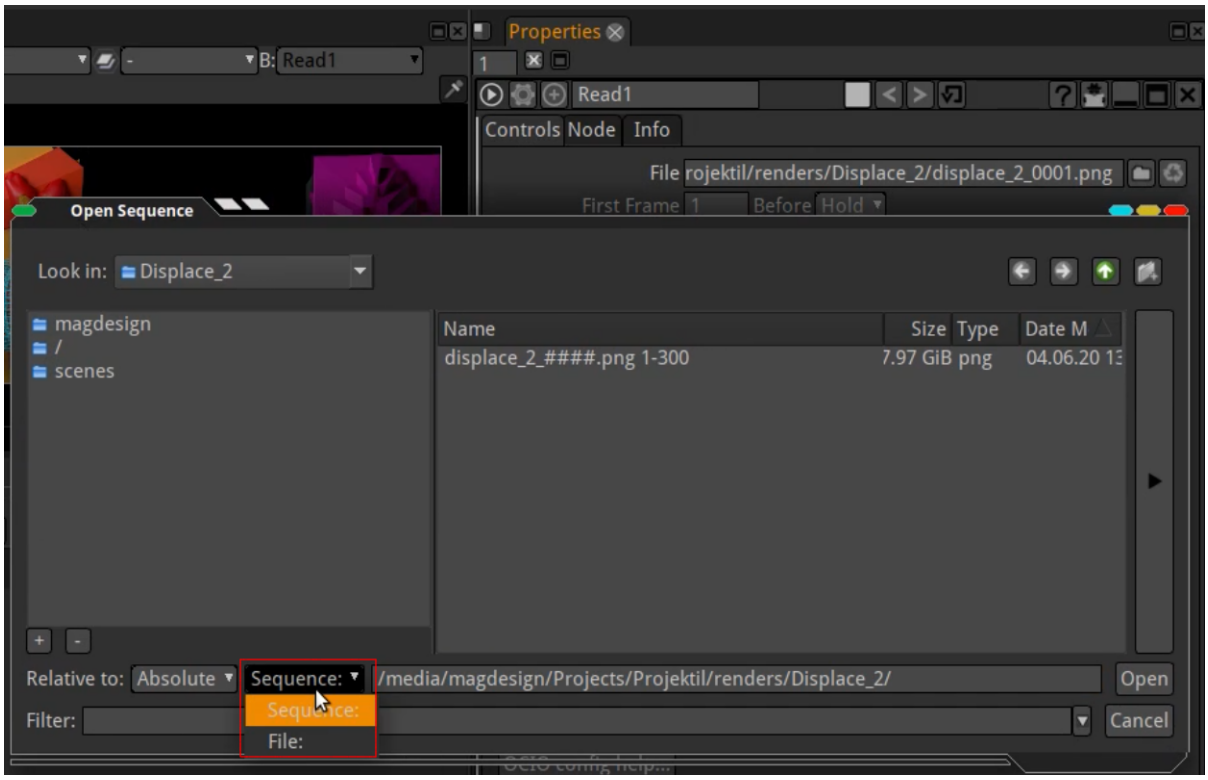

This panel allows one to graphically edit the changes in-time of the parameters of the nodes (these are the same as the numerical values shown in the Properties editor).

### The Dopesheet




This panel allows one to quickly edit the timing of the animations but without access to the actual values. Each little box correspond to a keyframe set on a parameter from one the nodes.

### The File Browser



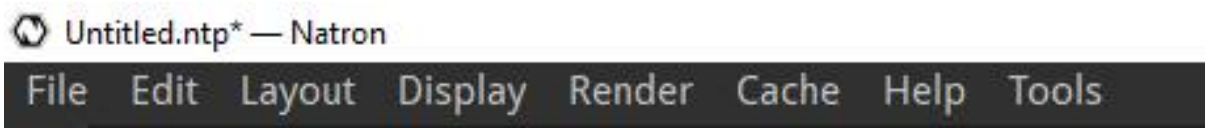

This panel allows one to choose where to write or read an image to/from the disk. It is opened from the properties of a read or write node

See *The File Browser* section for more informations.

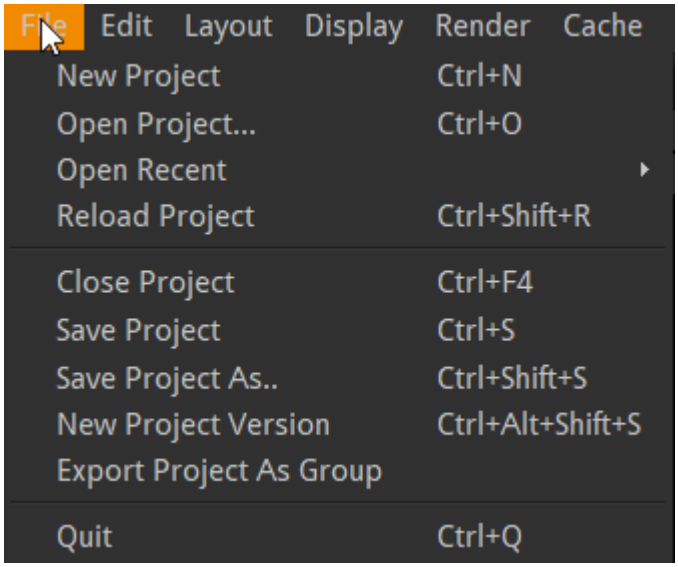
### Using the menus

Modifications of your project are done using items located in menus located in different places of the interface.

### The menu bar



### File menu




**New Project**
Clear the node graph to start from scratch a new process.

**Open Project…**
Load a `.ntp` file that is the description of a node graph. The `.ntp` contains no image data but only the instructions on how to process the images.

**Open Recent…**
Shortcut access to the most recently loaded `.ntp` files.

If a saved project is currently opened, the open functions will open in a new window.

**Reload Project**
Reload the current `.ntp` from disk. This can be used if you break something in your graph and don't know exactly what.

**Close Project**
Close the current project but keep other projects opened.

**Save Project**
Save the current node graph.

**Save Project As…**
Save the current node graph with a new name

**New Project Version**
Increment the version number in the project file.

Project files are very small files. It is thus recommended to save different files for the different steps of your work. Would you want to recover a previous state or in case your `.ntp` gets corrupted.

Natron expects the version number to be in the form `name_001.ntp`, `name_002.ntp` and so on.

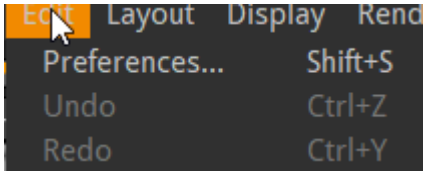
---

**Note:** You can number your files with different patterns like `name_v01` but you will have to increment manually with "Save Project As…"

---

**Export Project As Group**
With this item you can export a group of nodes to be reused later. This way you can create custom tools for Natron named plugins or Pyplugs. The group of nodes will appear as a single node when reused. This is why you must add one "output" node and "input" node(s) if relevant. So that Natron can determine how to connect your group when you will reuse it as part of another node graph

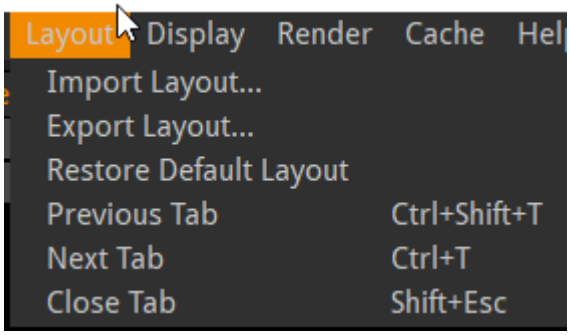
### Edit menu




**Preferences...**
Many preferences let you change the display of informations inside Natron. Many optimisation settings are also located in this menu.

**Undo/Redo**
The Undo item is modified dynamically to hint you about the last operation that can be undone.

### Layout menu




The Layout is the position of the different user interface elements of Natron. This menu let's you manage different layout configuration.

Useful for:

- Use different configs according to your present task (animating with a bigger curve editor, rotoscoping with a bigger viewer,...)
- Export a layout to use on a different computer
- create separate viewer and tools windows when using a dual monitor setup.

**Import Layout...**
Load a file containing the position of UI elements. The file extension is usually `.nl`

**Export Layout...**
Save a `.nl` file.

**Restore default layout**
Some UI elements are stacked in the same screen position to acees these you can click on their tab names. In default Layout: Node Graph, Curve Editor, Dope Sheet are in the same lower left pane accessible through Tab navigation

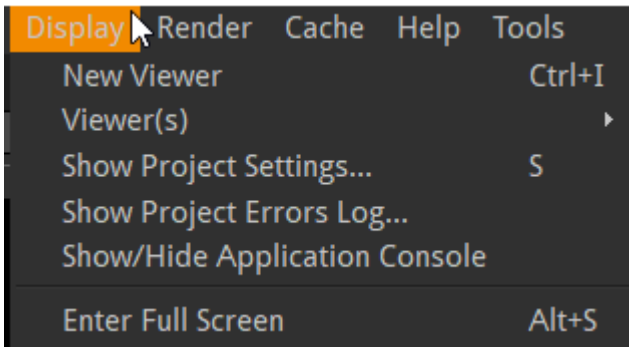
Here are 3 commands better used through their keyboard shortcuts:

**Previous Tab**
Shortcut: CTrl+Shift+T

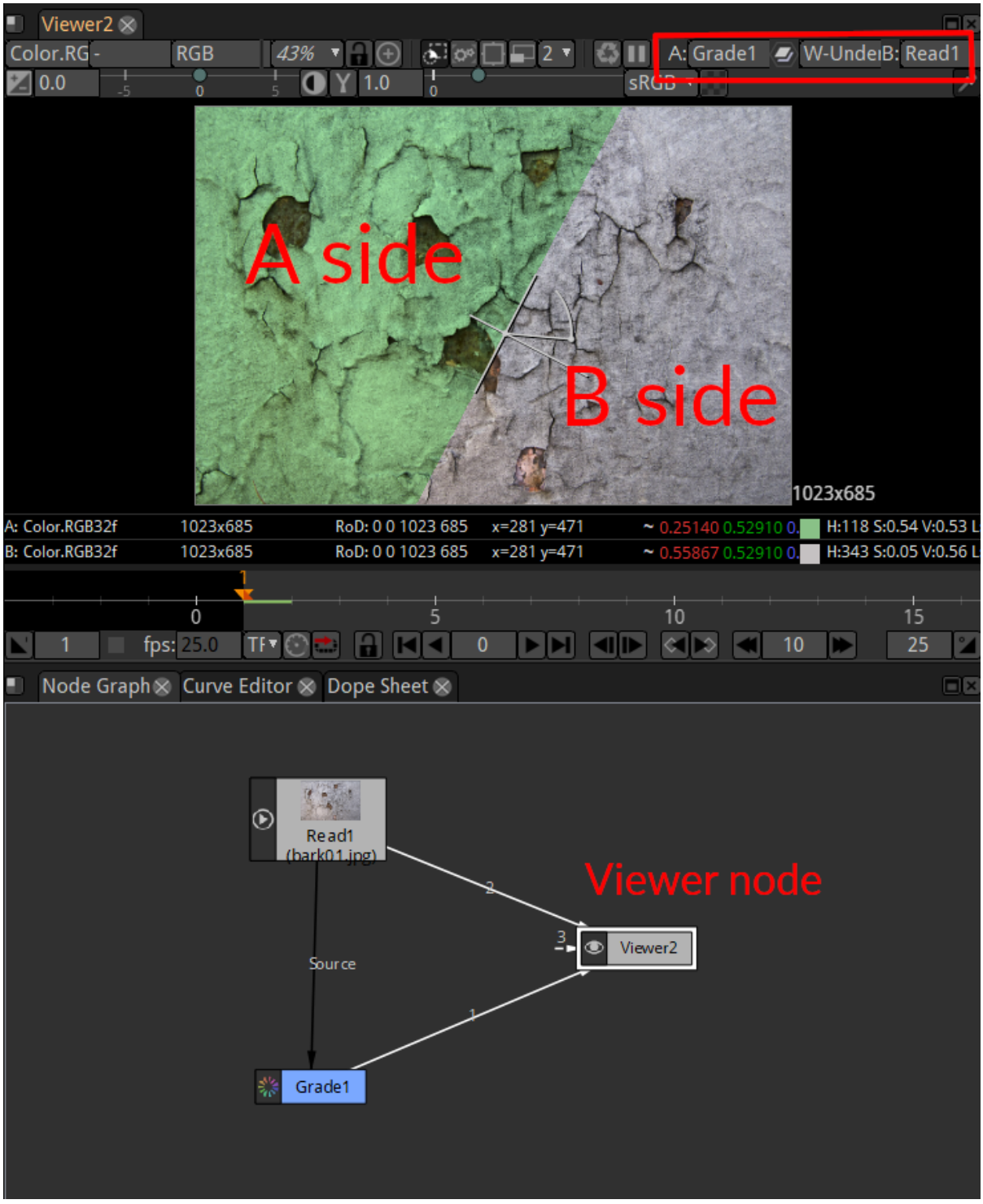
**Next Tab**
Shortcut: Ctrl+T

**Close Tab**
Shortcut: Shift+Esc

### Display menu




In Natron you can view different parts of your work in different windows. For each window a viewer node is present in the node graph. To better compare different images each viewer can be split in side A/side B. This menu helps you manage these settings.




Above: a viewer can have multiple inputs, up to 10. By default only one input is displayed. Once you choose a mixing mode (see red box above) A and B sides become active. "W_under" is the usual mode.

**New Viewer**

Add a new viewer node in the node graph. The new viewer will be displayed in a new tab. This command also comes in handy if you inadvertently delete the first viewer node.

**Viewer(s)>Connect to A/B side>Connect Viewer to input 1/…/10**

Show the image connected to input 1..10 in the A (or B) side of the viewer. If a node is selected it is also connected to the input 1..10 of the viewer.

It is very convenient to use shortcuts: `0` to `9` to quickly show the output of the selected node.

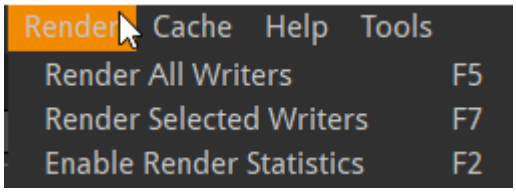
Show project Settings…

**Show project errors log…**
This console shows error issued while rendering.(e.g. GPU specific errors can be inspected here as this is a sensitive area depending on your computer configuration).

**Show/Hide application console**
This console shows error that may occur when Natron's configuration change (e.g. new plugins installed). Also handy to get the result of your python scripts.

**Enter Full Screen**
Save some screen space removing the title bar of Natron.

### Render menu



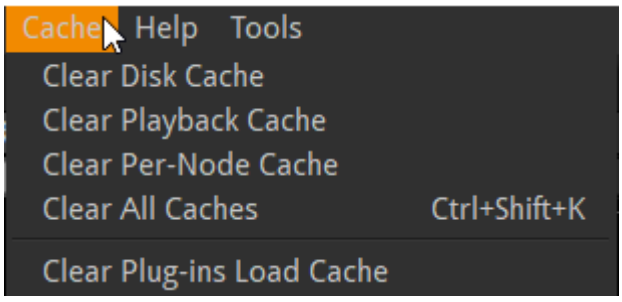

The final result of Natron image processing is only written to disk as a new image. When a Write node has been setup and the render process has been launched.

**Render All Writers**
Launch the rendering for all write nodes. The frame range to render is defined by the project settings and the Write node settings

**Render Selected Writers**
Launch the rendering for one or more write nodes.

**Enable Render Statistics**
Display a window showing how long it takes to render each node. This can help find bottlenecks when a project takes a very long time to render.

### Cache menu




To improve Natron speed, some intermediate images of the node graph are kept in memory/on disk. This caching mechanism sometimes need to be cleared to free up memory/disk space. Use this if Natron seems to slow down or warn you about memory usage.

**Clear Disk Cache**
Clears the internal disk cache (which is persistent between Natron runs), and data generated by "DiskCache" nodes.

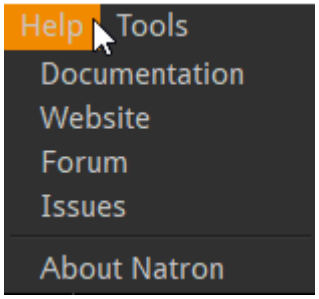
**Clear Playback Cache**
Clears final images sent to the viewer. Useful for previewing long sequences

**Clear Per-Node Cache**
Clears in-memory intermediate results. Useful when you make change high up in the node tree or have nodes with "Force caching" enabled.

**Clear All caches**
Best way to free up space in Natron.

**Clear Plug-Ins Load Cache**
Will trigger a full plugins scan on next Natron run.

### Help menu




**Documentation**

- 

**Website**

- 

**Forum**

- 

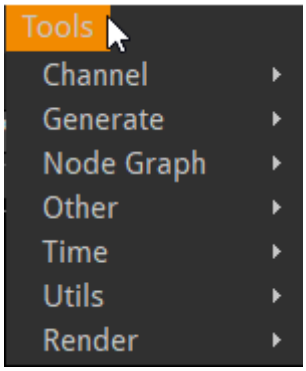
**Issues**

- 

Links to various resources to help you with Natron.

**About Natron**
Information about your version of Natron.

### Tools menu




In this menu additional functions are added through python scripting. Natron interface can be vastly modified through scripting.

### Context menus

You can right-click in many places of Natron to get quick access to a contextual menu. Here are the main ones:

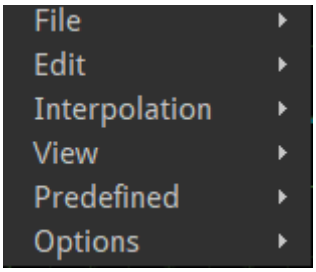



Fig. 1: Context menu for the Curve Editor window

- 

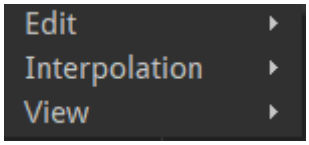



Fig. 2: Context menu for the Dope Sheet window

- 
- 
- 
- 

### Menus Usage

When a menu item has a keyboard shortcut associated, it is visible inside the menus.

### Using the toolbar

Each icon in the toolbar is a menu giving access to different categories of nodes (ie. image processing tools) that Natron offers to process or create images.

If you click on a tool, the corresponding node will be added to the node graph

---

**Note:** If a node is selected in the graph, the new node will be inserted below the selected one. It will be processed right after the selected one.

---

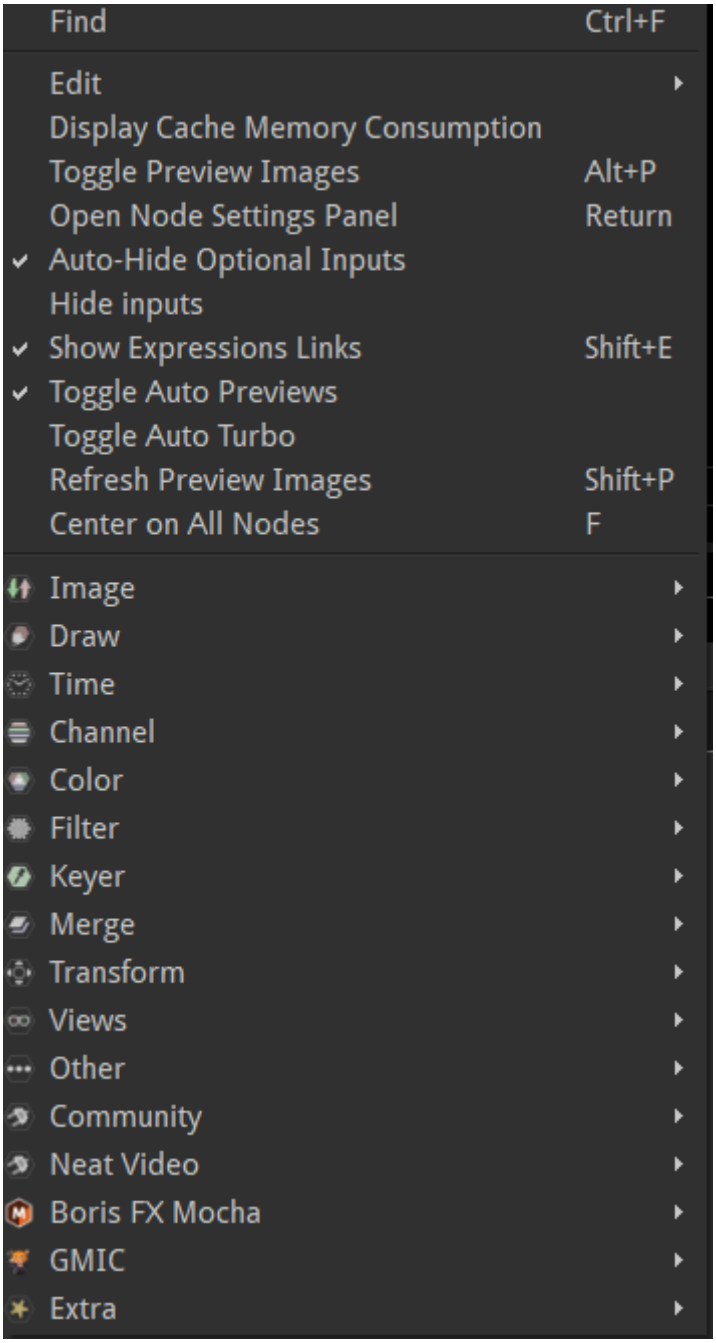



Fig. 3: Context menu for the node graph window

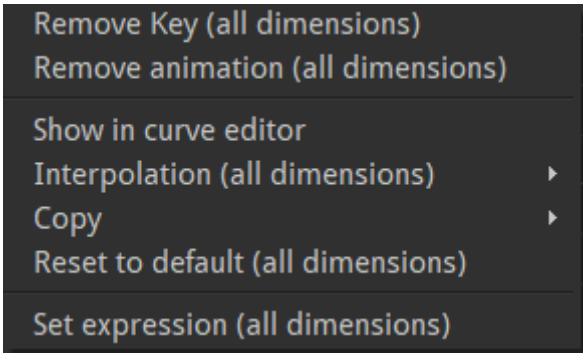



Fig. 4: Context menu for the Node Graph window

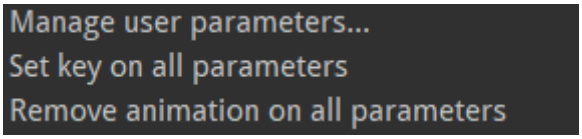



Fig. 5: Context menu for the Properties window

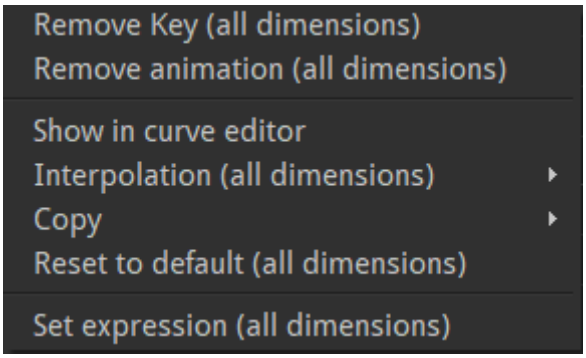



Fig. 6: Context menu for a parameter box in the Properties window

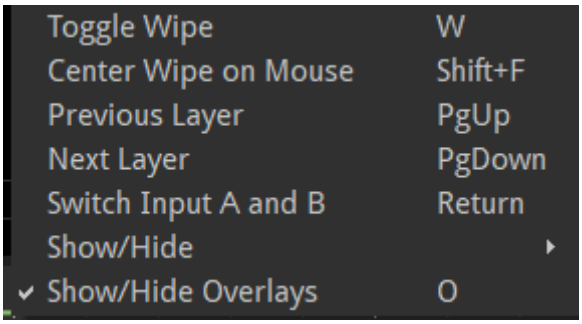



Fig. 7: Context menu for the Viewer window

### Image tools

The nodes to bring images in and out of Natron, plus a few utility nodes.

See *the Image nodes section*

### Draw tools

The nodes to create basic shapes.

### Time tools

The nodes to change the timing of your clips.

### Channels tools

The nodes to changes the order of your image channels (basic channels are RGBA for Red Green Blue Alpha but others can be added).

### Colors tools

Mainly color correction nodes.

### Filter tools

Nodes to change the texture of the image (blur or sharpen for example).

### Merge tools

Nodes with multiple inputs that can merge multiple images into one composite image.

### Transform tools

Nodes to change the geometry of the images.

### Views tools

Nodes to manage stereo images that considered as different views (left and right).

### Other tools

Mainly utility nodes to keep the node graph clean and readable.

---

**Note:** Other entrys in the toolbar can be added with plugins / scripts. So your Natron installation may have other Tool icons (community plugins,...)

---

### Working with nodes

For a brief introduction to the concept of nodes and images in Natron see: *Main concepts*

### Main rules

- **Nodes can have 1 or more inputs.**
  Most processing nodes have only 1 input (blur, color corrections…)

  Merging nodes have several inputs that are turned into one "mixed" output
- **mask input is present on many nodes.**
  It's purpose usually is to limit the effect of the node to the part of the image defined by the white part of the mask
- **Nodes always have exactly 1 output.**
  If several nodes B and C connect their inputs to the same output of node A they will receive the same image

  The only node without any output is the Viewer node. It determines what node is shown in the Viewer pane

When a node has several inputs (eg. Merge node) the B input is the "background" and A is the "foreground" image. If you disable the node, B input is passed unmodified Merge nodes can have many inputs added when required to allow many merge operations at once

### Creating nodes

Nodes can be created in 3 ways

- **Use their shortcut**
  `G` Grade

  `T` Transform

  `B` Blur

  `C` ColorCorrect

  `R` Read

  `W` Write

  `.` Dot

  `O` Roto

  `P` Rotopaint

  `M` Merge
- Pick the node in the tools palette under each category.

- Call the Node search menu with `tab` then type some letters to make the list of the names appears

### Duplicating Nodes

Nodes can be duplicated by copying (shortcut `CTRL+C`) and pasting (shortcut `CTRL+V`)

This create two independent copies.

If you want the two copies to process different images with the same parameters even when they are changed the nodes can be cloned (shortcut `ALT+K`).

The link between the nodes is shown with a pink arrow.

---

**Note:**

- Even Group (New in v2.4) and Roto can be cloned (which is not possible in nuke)
- Beware that parameters of the group are clones dynamically updated but not the internal structure of nodes inside the group

---

### Connections

To connect a node to another: grab the tip of the input arrow and drop it onto the input node

insert in the graph: hold `ctrl` + drag and drop node C onto a existing connection between A and B will insert the node inbetween. resulting in A->C->B To show you where the node will be inserted, a green arrow is displayed

To disconnect a node: select it, press `ctrl+shift+x`

**community scripts**

To connect distant nodes, select output node, input node, press `y`

For more in depth information on how to manage your nodegraph see *Nodegraph*

### Navigating inside the Node Graph

Pan the nodes view: `middle mouse drag`

zoom the nodes view: `ALT + middle mouse drag`

Frame all nodes: shortcut `f`

Frame only selected nodes: shortcut `f`

**Mini Node Graph**

The bottom right rectangle shows a minified view of the graph.

Click and drag the yellow rectangle to change the part of the graph that is displayed

### Node Graph Tidiness

### Rearrange Nodes

- Select several nodes connected in chain
- press shortcut L

Nodes are automatically aligned vertically without moving the last one

### Natron's Tidy Nodes

Natron has a couple of nodes devoted entirely to script housekeeping.

### Backdrop

A Backdrop is a flat colored sheet that can be placed behind a bunch of nodes. This is useful for making a complex script easier to read. I use backdrops in many of my. The other useful thing about a backdrop, is that its entire contents can be moved about by simply dragging on its header bar. Colored backdrops in a node graph.

**Create a backdrop**

- Tools Palette "Other"
- Select "Backdrop

or

- Press `Tab`
- Type "bac"
- Select Backdrop in the list

**Backdrops can be color coded.**

A common convention is:

- Grey Mattes
- Blue CG
- Green Live action footage
- Yellow Made in Nuke
- Pink Other

---

**Note:** A backdrop can be used as a sticky note to store text information inside nuke's project.

Use the "Control"/"label" text field to type in

---

### Dot

A Dot can be added to any arrow that runs between nodes. This can be used to maintain tidiness. One general rule of node graph tidiness is that arrows should run vertically or horizontally, not diagonally. To add a dot, hold down the 'command' key and click the yellow dot that appears.

### Group

Many nodes can be grouped together to make the graph easier to read.

- select the Nodes
- hit CTRL+G. The nodes will be replaced by a group node containing them all.

  Its content is automatically opened in a new node graph tab called "Group" To reopen later this node graph click the eye icon in the top bar of the group node.

### Nodes properties

### Nodes naming

Label everything (using NoOps with preview enabled, BackDrops etc)

Rename the "Label" of a node not the "script name"

### Previews

A node can show a thumbnail of it's output by ticking the Preview checkbox.

---

**Note:** If a node graph has many previews it can slow down the display. You can disable the auto refresh of these previews disabling the "Auto Previews" checkbox of the project settings (shortcut S in the node graph)

---

### Hide input

When nodes have very long connections they can make the node graph difficult to read. To avoid this you can hide the input arrow of a node.

The input arrows only disappear when the node is not selected.

To make the script easy to read you often enable the preview and rename the node with the input hiddens

### Nodes placement convention

Scripts should be readable: laid out in a rational and consistent manner. This is to enable their easy reading by you and anyone else who might review your script.

A common convention is:

- Main input feed from the top.

  the B input of the merge that is transmitted when the node is disabled

- Masks feed in from the right

  usually labelled mask

- Image secondary inputs feed in from the left.

  the A input for the Merge

- Favour vertical connections for main branches.

  They allow naming the nodes without overlap and take less screen room. The autoarrange functions is coded for this.

- Favour horizontal connections over diagonal ones to connect several branches.

  Dots can be used to make this happen.

- Put everything inside backdrops.

  This useful even for moving groups of nodes, to ensure you don't forget part of a function

- Label everything.

  Using backdrops, postage stamps, and the Labels of the nodes.

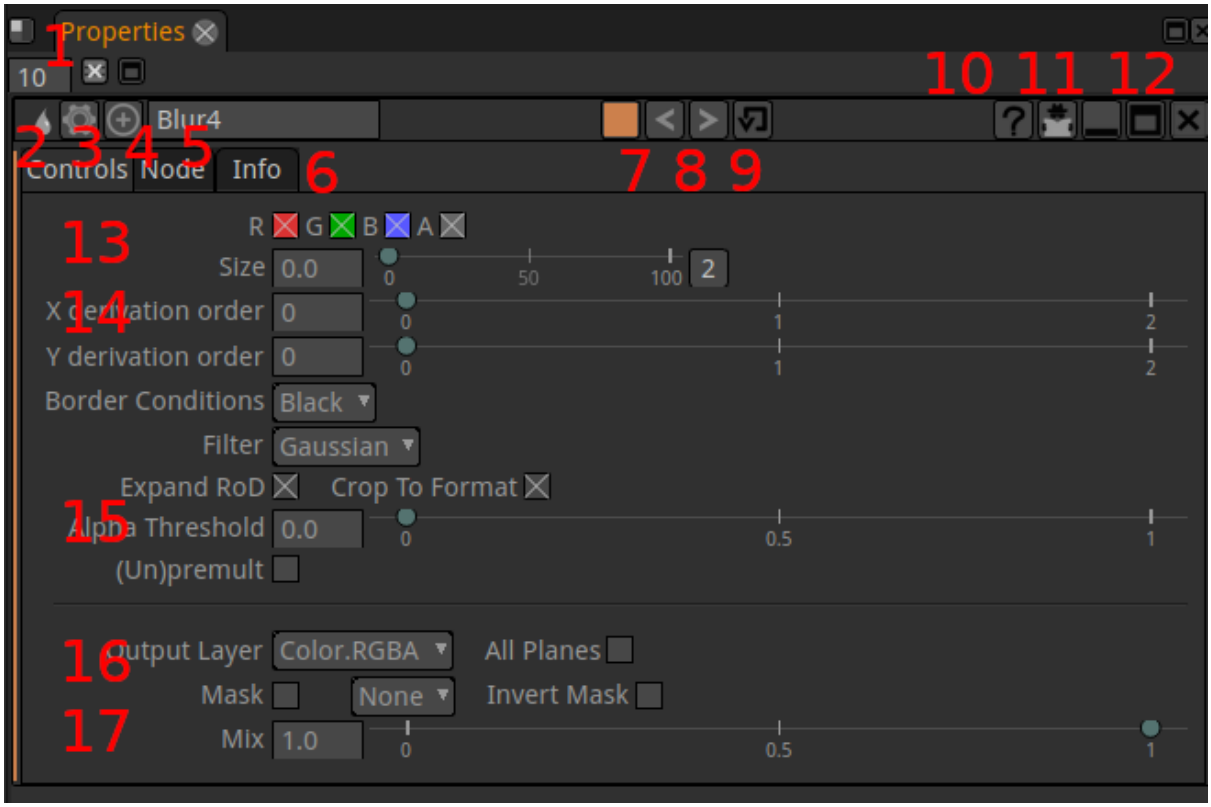
- Don't change the script name.

  This can be confusing for humans and the expression engine. It's not a viable option because no two nodes can have the same name. Hence Natron does some automatic renaming when duplicating nodes

  For more in depth information on Nodes see *Nodes*

### Properties panels

Here you can interact with the node properties to fine tune the effect on the image. As in the rest of Natron all changes are non destructive and can be modified at any time.




**The elements of the properties panel are:**

- 1 Maximum number nodes opened in the properties window
- 2 icon of the node to identify it's type. Most useful when the name has been changed. Hovering the icon popups the node type in plain text
- 3 icon of the presets / user menu *Presets menu*
- 4 icon of the center in node graph. When you click this the view in the node graph is moved to center the node on screen
- 5 Node name This can be changed but it is good to keep this name to easily tell the type of a node and keep syntax short, should you reference this node in an expression. For more verbosity the node "label" field gives more freedom.
- 6 Node parameter tabs. The parameters of a node are spread across several tabs. The controls, Node, Info tabs are present in most nodes but others can sometimes be found too. You can even add tabs through
- 7 The color of the node in the graph window
- 8 Undo/redo specific for this node and not the overall Natron session.
- 9 restore values for this operator. When clicked it will reset the node (including those with expressions)
- 10 the ? icon opens the documentation for the specific node
- 11 shrink the node pane to show only animated parameters. Use only after you started your animations.
- 12 flat line: shrink completely the node parameters display. Box icon: detach the node of the current pane
- 13 Global parameters :ref: proppanel_parameters

- 14 Main parameters
- 15 Optimisation parameters
- 16 Limitation parameters

_proppanel_parameters: Controls tab ————

**RGBA**
The channels that will be computed

**Main parameters**
These ones are different for each node type as they are the ones really defining the effect.

**Border Conditions**
Sets the way to evaluate pixels beyond the canvas edges "Nearest" virtually extends the image to avoid the appearance of dark edges when blurring and set to "Black"

**Expand RoD**
Let the calculation of the node run for "out of image" pixels. These pixels could be brought back in frame by a subsequent transform lower in the graph

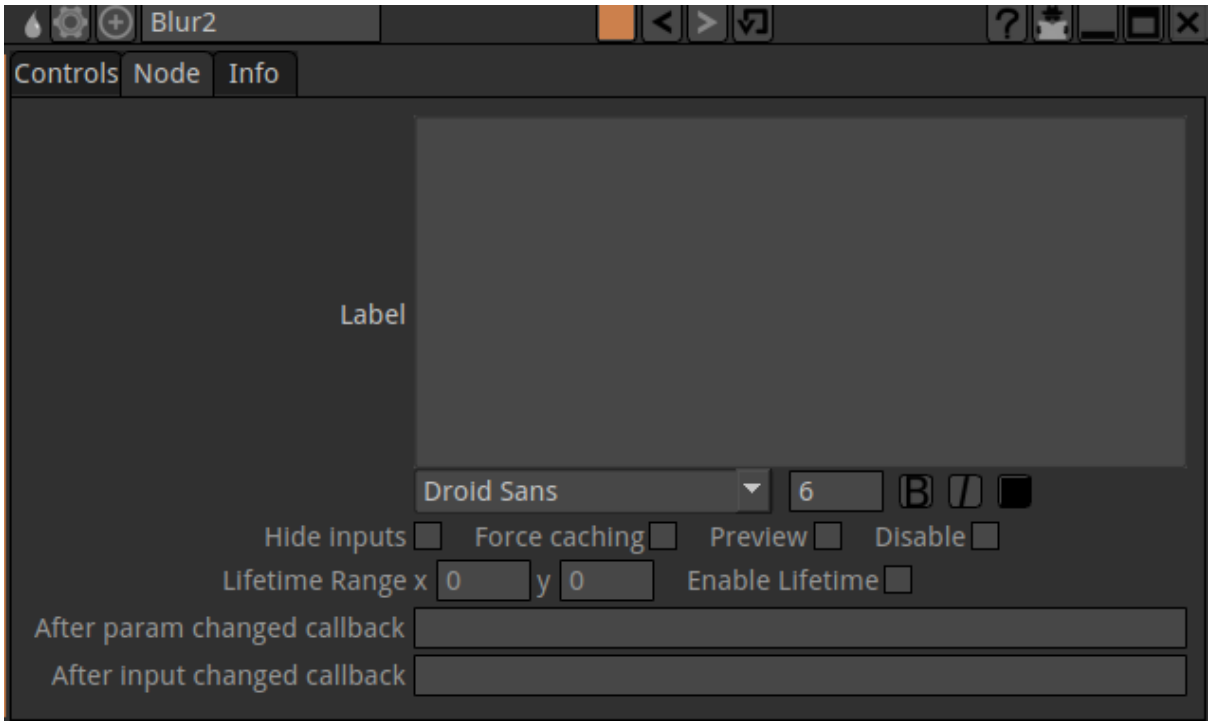
**Crop to Format**
crop the result to the format defined in pro ject settings avoiding useless calculations

**Output Layer**
Define the channels that will actually be modified by the node

**Mask**
Define how the mask provided on the mask input should be treated. By default the node affects the image only where the alpha channel of the mask input is not Black

**Mix**
Let's you revert partially the effect to go back toward the original image

### Node tab




**label**
Here you can put custom test or expressions that will be shown in the node graph on the "body" of the node.

**Hide inputs**
Hide the incoming connexion arrow of the node. Useful when it is very far from it's inputs

**Force caching**
Avoid rerendering this node (and ustream ones) when your are done setting up this part and will start to add more nodes downstream.

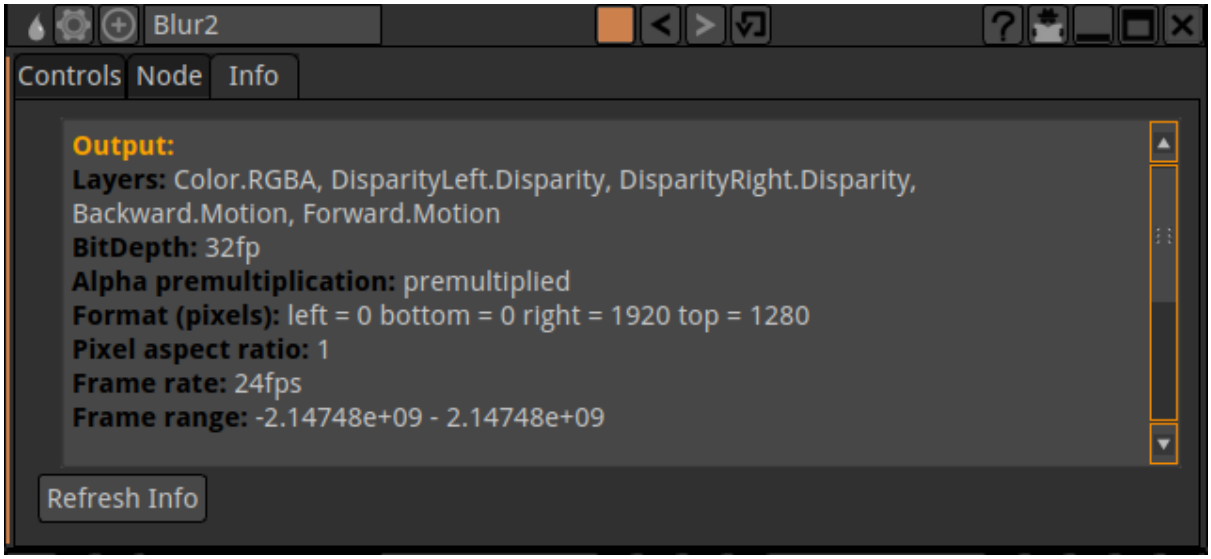
**Preview**
Add a "postage stamp" to the node to get a preview of the image getting out of it.

**Disable**
Same as toggle with "D" key to compare with and without the effect of the node

**Lifetime**
Save computation time by not evaluating this node outside of the Lifetime interval. This is similar to the in/out points of a clip in editing

**Callbacks**
are for python scripting and automation of Natron

### Info tab



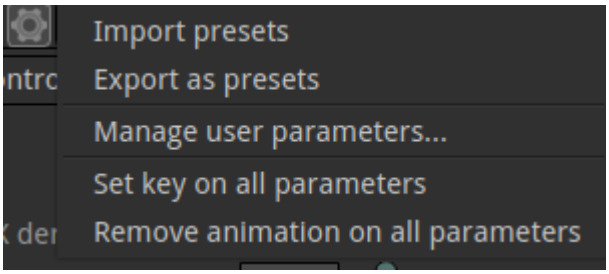

Here you can check the properties of the data generated by the node. It may be useful if your project becomes suddenly very slow to compute. For example, memory can be filled by an image carrying too many Layers that may not be useful

### User tab(s)

To build expressions you can add new parameters to your node. They can't be added to default tabs. You will be prompted to add a user tab before adding new parameters to it with command "Manage user parameters… " *Presets menu*

### Presets menu

This menu let's you work on the parameters of the node




**Import Export presets**
Let you save to file the values of all the parameters of the node at once. This can then be restored with "Import"

**Manage user parameters…**
A menu to add new parameters to your node. They will be useful to build expressions that can be modified interactively (on "real" parameters)

**Set key on all parameters**
A quick and dirty way to animate the values of a node

**Remove animation on all parameters**
A quick way to "freeze" a node settings. Only animation curves will be frozen. Expressions are kept.

### Using the color controls

### Using node presets

### Animating parameters

### Compositing viewers

### Using the file browser

The File browser in Natron has some specific features.

### Relative Path

in order to allow moving files without breaking links or to allow sharing files between computers with different storage setups, Natron allows relative path.

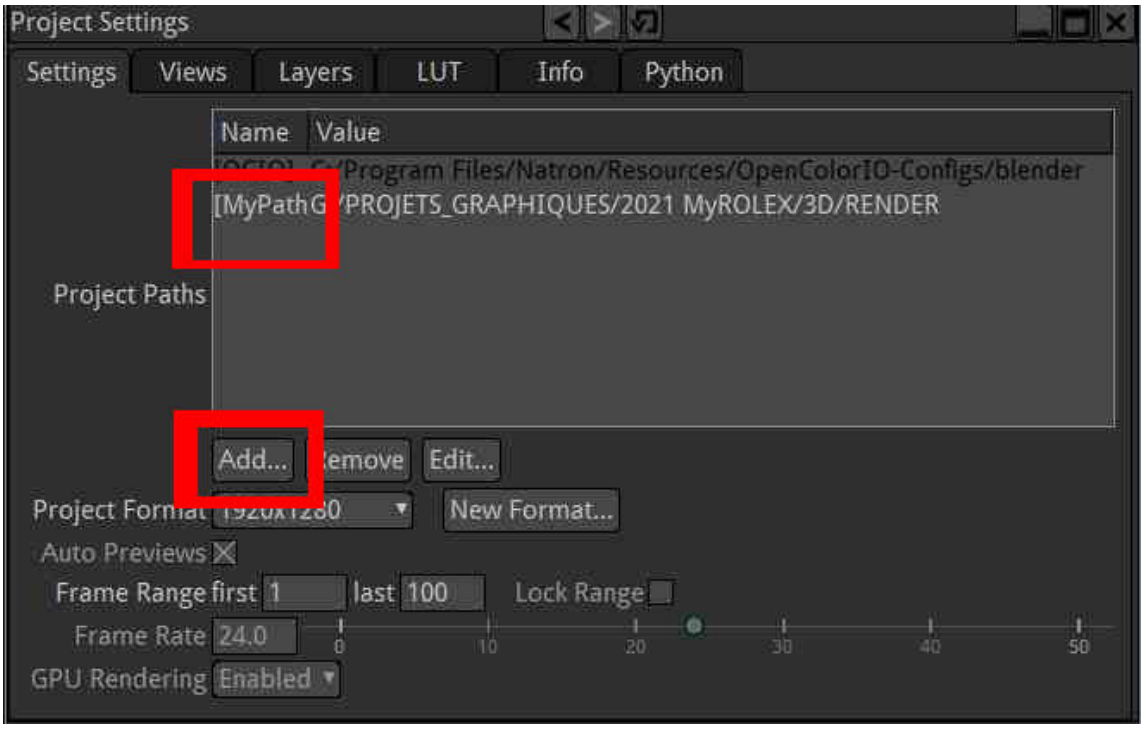
### The Short method

To use path relative to the current Natron .ntp project file

- Save your current project where you want but in the disk tree as your video files. This creates a [project] entry in the Project Paths list
- Create a read or write file. You have now access to Files path relative to the current .ntp file by selecting Relative to:[project]

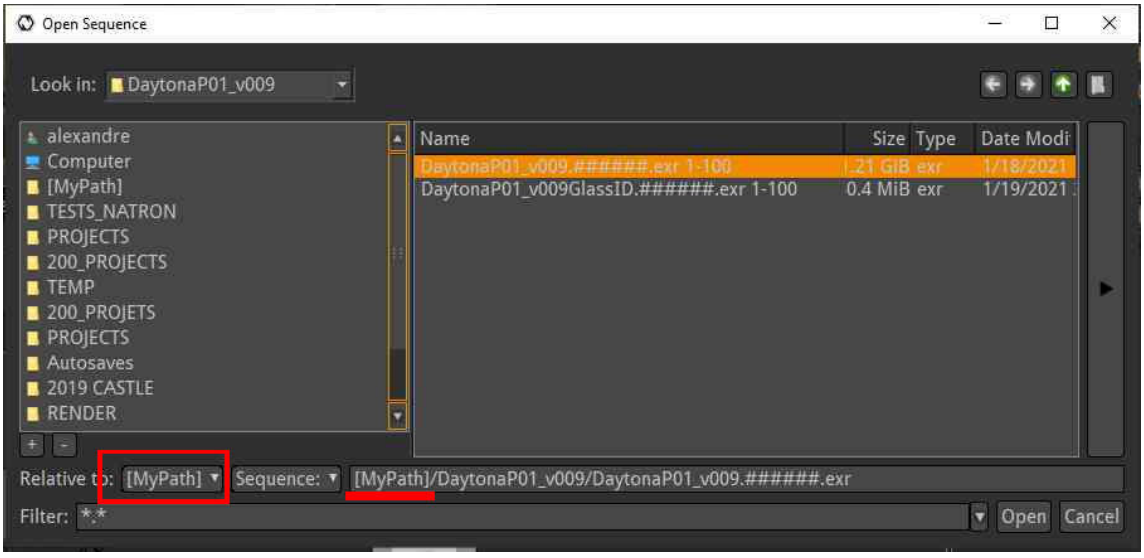
### The complete method

**First create a "base path"**




- open "Project settings" (shortcut "s")
- create a "project path" by clicking "add…" then choose a folder
- rename the path shortcut by clicking on its name

**Then use it to read or write a file in relative path.**

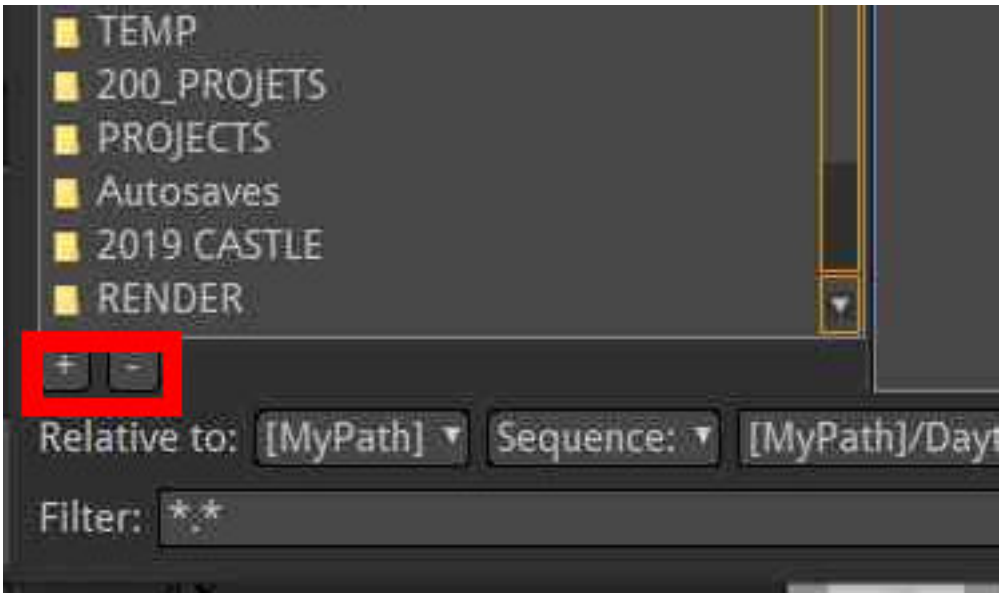



- open the browser from the read or write node you want
- navigate to your file
- switch Relative to the preset name you have created before

Your path is now converted to relative. Should you move your files, you would only have to edit the shortcut in the settings with the 'Edit…' button

### Favorites

**If you want fast access to often used folders you can create favorites.**




When the browser is opened, click the + icon to make the current folder a favorite.

Click the - to remove the favorite from the list.

---

**Note:** **Tip:** It's good practice to create a folder to store the different layouts you use for working in Natron and create a Favorite to this folder

---

### File sequence

In Natron, videos can be made of a list of image files instead of a single video file.
image.0001.jpg
image.0002.jpg
image.0003.jpg
...

instead of:
image.mp4

---

**Note:** **Tip:** Natron behaves way better with image sequence (numbered) files rather than Movies (quicktime, mp4, ...). More reliable, faster access, possibility to overwrite parts of sequence when (re)rendering are the main reasons for this

---

**Warning:** To have a consistent behavior, all images must be of the same resolution. (ie. number of pixels)

for this reason the file browser automatically groups numbered files and would display in the list: image.####.jpg 1-3

If you want to pick a single image of the list you should switch the 'sequence' button to 'File' to see each individual file.

When you set the filename in the bottom line you can tell Natron how many digits it should use to write or read the files:
image.####.jpg
or
image.%04d.jpg

These are two different ways to tell Natron to use 4 digits in the file name. This is called padding

**Note:** **Tip:** It's good practice to put the image number between two dots

#### Slash/Backslash

In Linux and macOS, the directory separator is "/" (slash), whereas Windows uses "\" (backslash). Natron support both syntaxes in the file path of the browser.

#### Undoing and redoing

#### Progress bars

### 1.2.6 Troubleshooting

Natron has bugs, as any software does.

Natron is also a free and open-source software, and bugs are fixed by volunteers when they have some spare time, so please be tolerant and do not expect your bug to be fixed within the hour. It may take days, weeks, or it may even never be fixed.

Properly reporting a bug takes time, but the time spent reporting a bug will certainly help you and the community a lot. It is also the best way to find a temporary solution or a workaround.

#### Identifying the Kind of Bug

Natron may fail in several ways:

1. It crashes while doing some specific user interaction with the GUI.
2. It crashes while rendering the project.
3. Rendered images are wrong, or contain black areas.
4. Natron hangs and the GUI is not responsive (i.e. menus and buttons do not respond). This is probably a *deadlock* in the GUI code of Natron.
5. Rendering stops before the end of the sequence. This is probably caused by an OpenFX error: check the error log from the "Display/Show Project Errors Log…" menu: there may be an indication of the problem (but it can still be a Natron bug).
6. Rendering hangs or Natron hangs, but the GUI is responsive. This is probably a *deadlock* in the rendering code, and this is the hardest kind of bug to reproduce or fix. If it cannot be reproduced easily, then your best bet is to use one of the workarounds below.

### Searching and Reporting Bugs

Bugs may come from OpenFX plugins that were not bundled with Natron, so before reporting anything, if you have any extra OpenFX plugins installed, uncheck "Enable default OpenFX plugins location" in "Preferences/Plug-ins", save preferences, relaunch Natron, and check that the bug is still here.

The best way to have your bug considered for fixing is to first search on the Natron forum and in the Natron issues if this is a known bug. If yes, then read about it, and try some workarounds given in these bug reports (see below for more workarounds).

If this bug does not seem to be a known issue, then post a new issue on the Natron github, and follow strictly the guidelines to report the bug. The issue title should be as precise as possible ("Natron crash" is *not* a correct title, see existing issues for title examples). If possible, also post a project that exhibits the issue. Make the project as small as possible: remove extra assets or replace them by small JPEG sequences, checkerboards or colorwheels, etc. You can then either attach your project as a zip file to the github issue, or post a link to a file sharing service.

### Known Bugs and Workarounds

This document is an very incomplete stage. the sharp+number is the number of the issue on github to help keep track of bugfixes.

Luckily, there are workarounds for most Natron crashes or hangs. Here are a few one worth trying, but of course your mileage may vary or you may find another workaround (which you should describe in the proper Natron issue).

- Avoid using videos with inter-frame compression as inputs and outputs. This includes H.264 (eg AVCHD) and H.265 (HEVC) video. ProRes is OK but slow, especially for writing. DNxHR is OK. Individual frames are *best* (DPX, EXR, TIFF, PNG, JPEG, whatever suits your input video quality and bit depth). The video reader is here for convenience, but it may have difficulties decoding some videos. The video writer may also be a source of bugs, and should be avoided for long sequences: if Natron crashes in the middle, then the whole sequence has to be rendered. Extract individual frames, do your compositing, then compress the frames (and optionally mux the audio) with an external tool. To extract frames, you may use a simple Natron project or any other tool (e.g. FFmpeg). To compress frames to a video, there are also many tools available, e.g. FFmpeg, MEncoder, or VirtualDub (windows-only). This is the standard compositing workflow and the preferred method of running Natron. See the *tutorial on how to convert videos to image sequences*.
- If Natron hangs or crashes when rendering an image sequence (this does not work when rendering to a video), check that the rendered frames are OK, relaunch Natron and in the parameters of the Write node uncheck "Overwrite". That way, only the missing frames will be rendered.
- If you have a large project, or a project with heavy processing, use the *DiskCache Plugin* at places that make sense: downstream heavy processing in the graph, or before you use the result of processing as inputs to *Roto* or *RotoPaint*.
- On multicore computers (e.g. Threadripper), go to Edit => Preferences => Threading and under Number of parallel renders limit it to "8".

You will quickly notice that using individual frames instead of videos for inputs and output give a *big* performance boost and will most probably solve your issues, so once you've learned how to decompress/compress any video, this will become your standard workflow. Just add extra disk space, and you're good to do serious and fluid compositing with Natron.

#### User Interface bugs

- Can't rename a node #664: If the Properties panel does not let you rename a node try to rename with the "N" shortcut in the nodegraph. If it does not work either, it can be done in Python with `myoldname.setLabel('newname')`

#### Roto Node bugs

- Mask input does not work #367: This feature is not yet implemented.
- Rotopaint clone tool: sourceTypeChoice performs the same action when set to both "background" and "foreground" #629: Use multiple rotopaint nodes.

#### OpenGL/GPU Rendering Issues

If the viewer displays some error message about OpenGL, then GPU rendering is probably going bad. Note that this kind of problem seems to only happen on Windows, so you might want to consider switching to Linux or macOS to use Natron if your GPU is not well supported by Natron under Windows.

1. Create a *Shadertoy*, click "Renderer Info…" and check that the OpenGL version is at least 2.1 and that the extension `GL_ARB_texture_non_power_of_two` is available. If the displayed info does not correspond to your graphics card, check that the OpenGL drivers for your card are installed. If not, install the software called "OpenGL Extension Viewer" and check that your card appears in the list of renderers. If not, then it is a drivers issue.
2. In Natron Preferences / GPU Rendering, check that the displayed is consistent with what "Renderer Info…" above gave.
3. Now uncheck "Enable GPU Render" in the Shadertoy node and click the refresh/recycle button on the top of the viewer. Click again "Renderer Info…" and it should say it now uses Mesa in the `GL_VERSION`. Does it fix the issue? If yes, you may try the next step to globally disable OpenGL rendering in Natron.
4. To temporarily fix this issue, in Natron Preferences / GPU Rendering, set "OpenGL Rendering" to "Disabled", click the "Save" button in the Preferences window, quit Natron, launch Natron, check that GPU rendering is still disabled in the Preferences, and test your project.

If you there is an error similar to `Shadertoy3: Can not render: glGetString(GL_VERSION) failed.`
Go to File => Preferences => GPU Rendering and set No. of OpenGL Context to 5
Save and relaunch Natron.

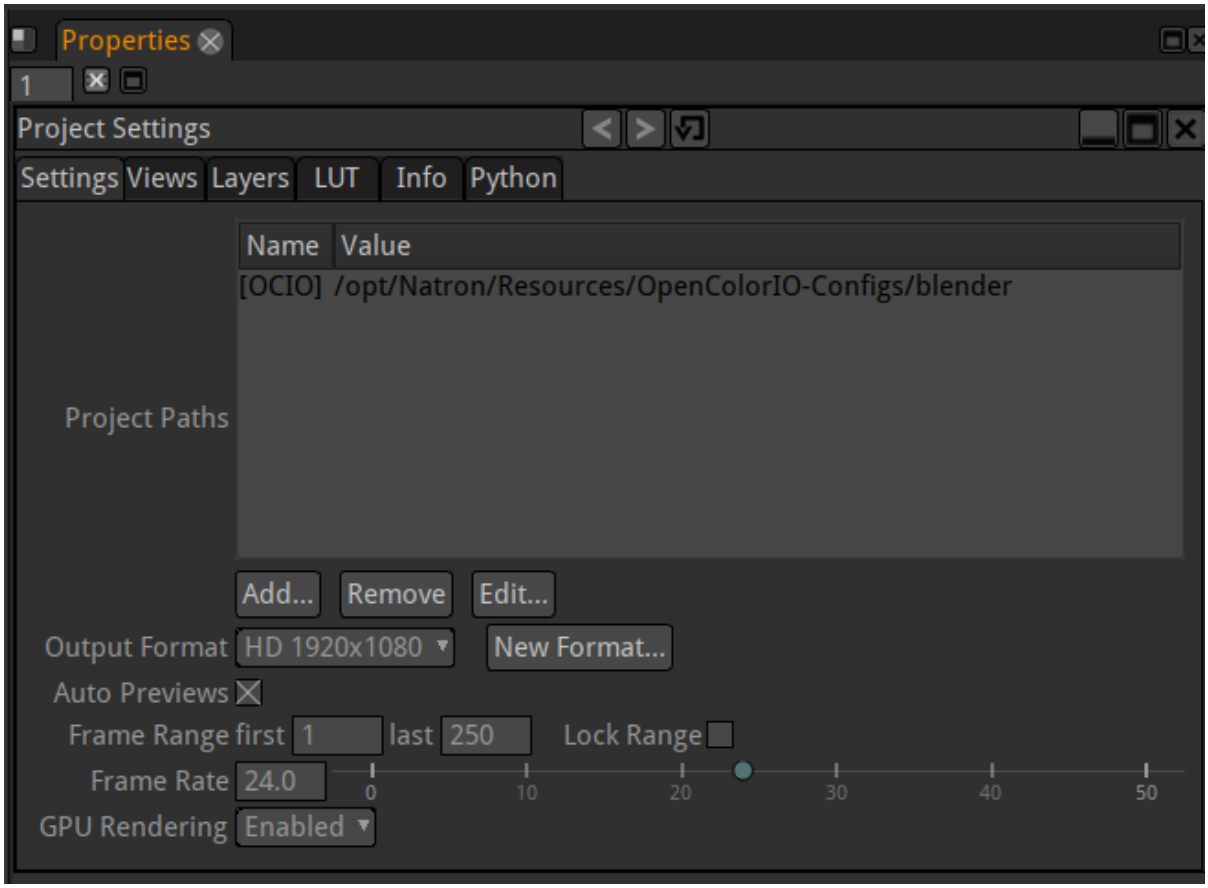
## 1.3 Compositing

### 1.3.1 Managing Projects

#### Project setup

Natron will automatically adjust the project settings when importing media using a Read Node or by drag'n'dropping content into the Node Graph.

- To access the Project Settings, go to "Display > Show Project Settings" or press "S" on the keyboard.




### Output Format

While clicking on Output Format, a dropdown appears with various standard formats to choose from. If the desired format is not in the menu:

1. Select New Format.
2. Copy a format from any viewer by selecting the viewer and choose Copy From or define a custom width and height in the w and h fields.
3. Enter a new for your new format.
4. Click OK to save the new format, it now appears in the Output Format dropdown menu.

### Frame Range and Frame Rate

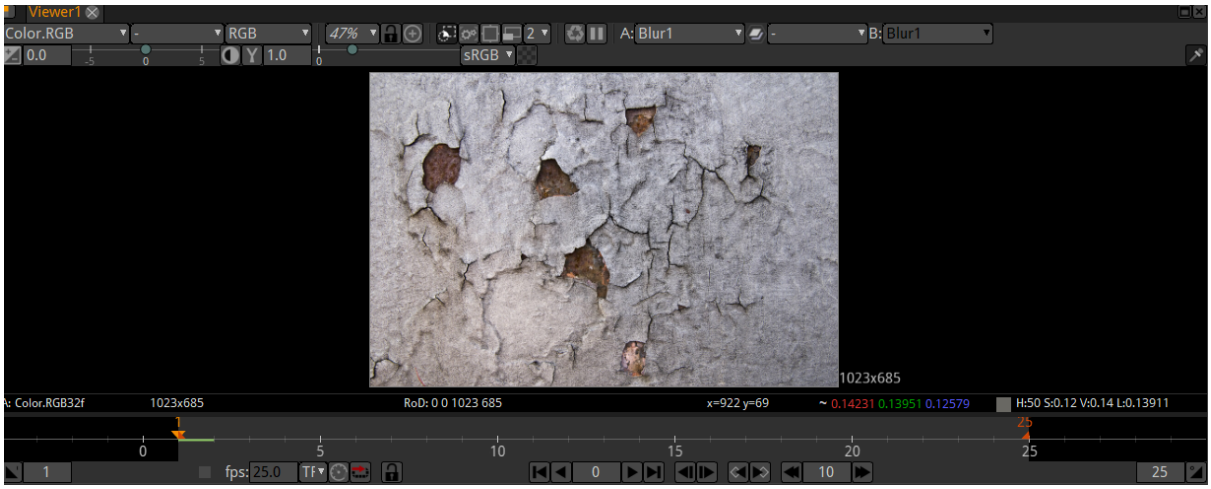
- Define the lenght of the project with Frame Range first and last frames value.
- Enter the desired FPS in the Frame Rate field.

### GPU Rendering

User can select when to activate GPU rendering for plug-ins. Note that if the OpenGL Rendering parameter in the Preferences/GPU Rendering is set to disabled then GPU rendering will not be activated regardless of that value. Enabled: Enable GPU rendering if required resources are available and the plugin supports it. Disabled: Disable GPU rendering for all plug-ins. Disabled if background: Disable GPU rendering when rendering with NatronRenderer but not in GUI mode.

### Proxy Mode

It is possible to enable the Proxy Mode in the Viewer. On top of the Viewer panel there is a group of 5 buttons. Click the fourth button from the left to turn on Proxy Mode (Its the one with the two squares). If it turns red, it's on. The next button to the right is used to define a simple scale factor by which the images are scaled down whenever the proxy mode is activated.




As an alternative to letting Natron generate proxies on the fly, proxy files can be specified using the Proxy File fields in the Read nodes.

### Loading Images / Video

The preferred method to import footage into Natron is to import image sequences.

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**Note:** The video reader is only here for convenience, it may have difficulties decoding some videos. Avoid using videos with inter-frame compression, this includes H.264 (AVCHD) and H.265 (HEVC) video. ProRes and DNxHR is OK but slow. Individual frames are *best* (DPX, EXR, TIFF, PNG, JPEG, whatever suits your input video quality and bit depth).

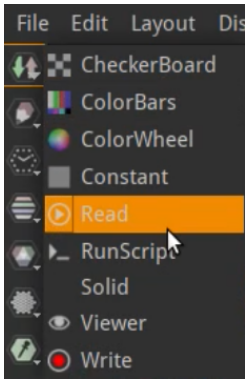
---

See this chapter *tutorial on how to convert videos to image sequences* on how to create image sequences.

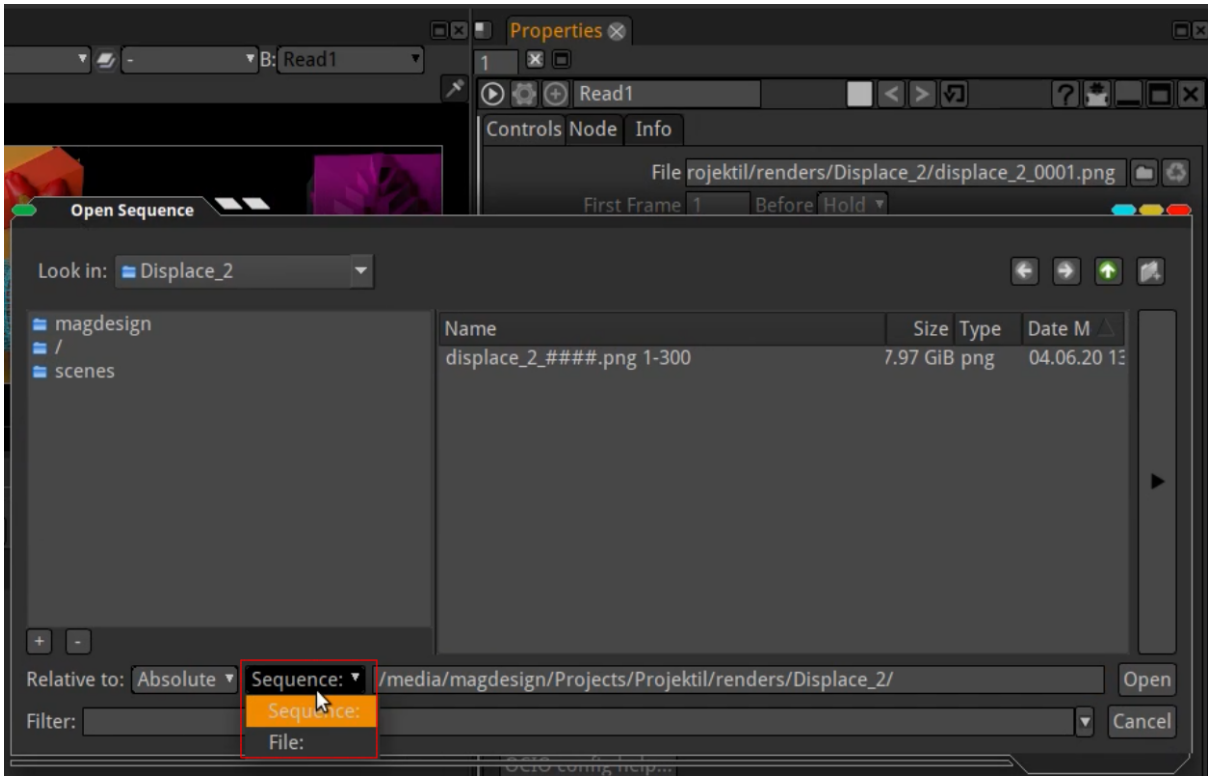
### Loading footage

There are three ways to load footage into Natron:

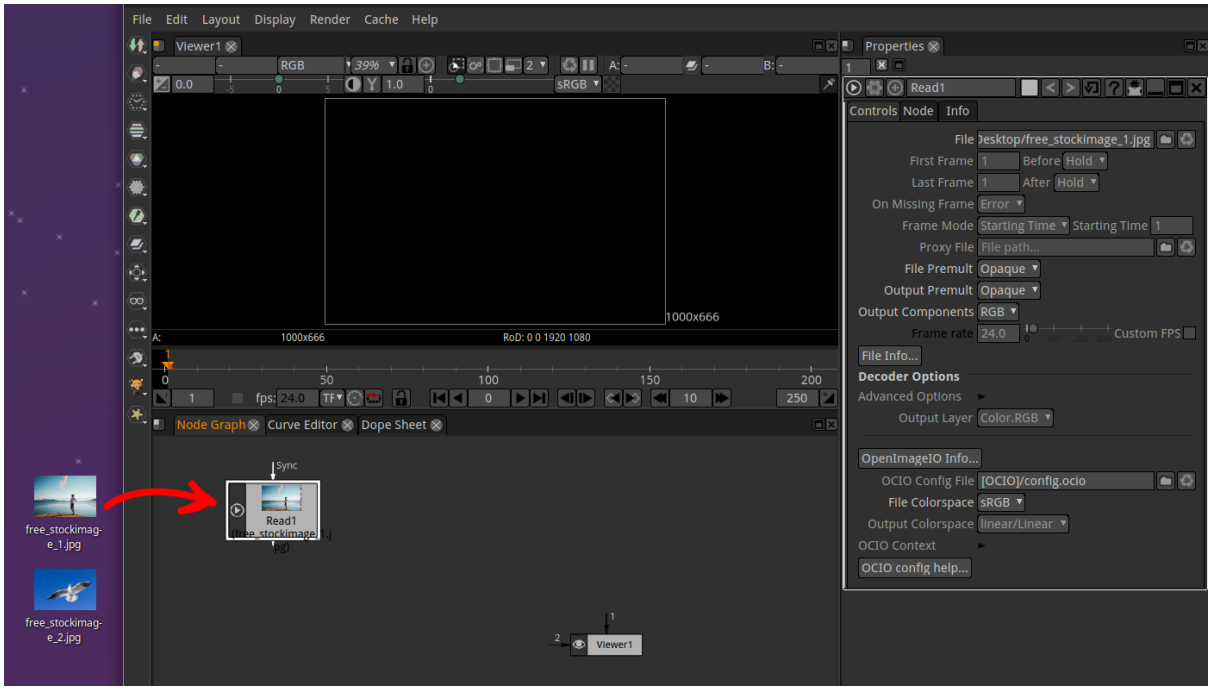
- Add a Read Node from the sidebar and select your media:




- In the Node Graph hit 'R' on your keyboard and select your media:

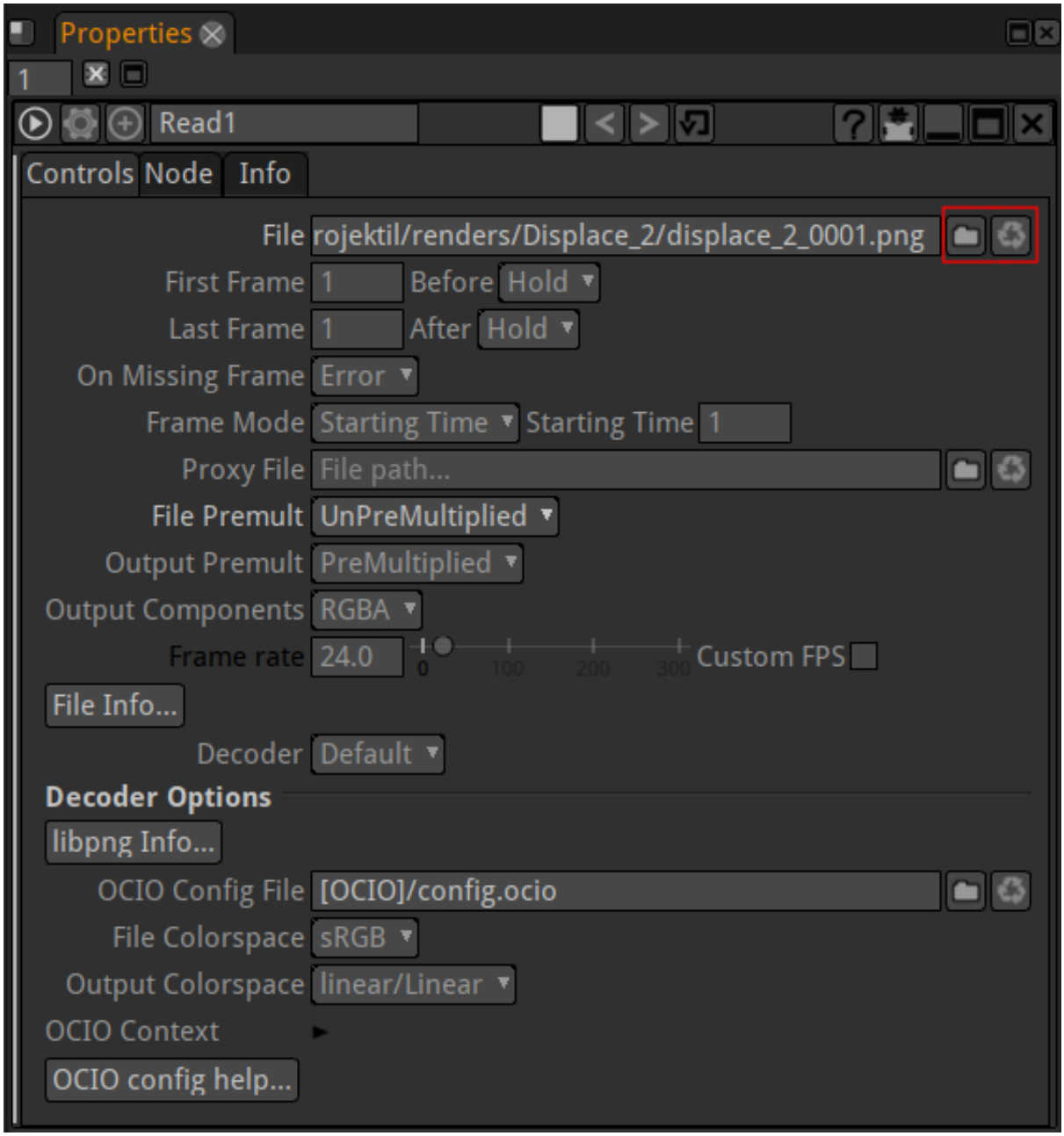



- Drag'n'drop your media to the Node Graph:




**Note:** To see the imported footage in the viewer, select the Read Node in the Node Graph and hit 1 on your keyboard.

In the Properties Panel on the right side you can make several adjustments to your Read Node, its more or less self-explanatory:




See *The Reader node* section for more information.

### Preview and rendering

#### Preview

While working in Natron you can preview your work in many ways:

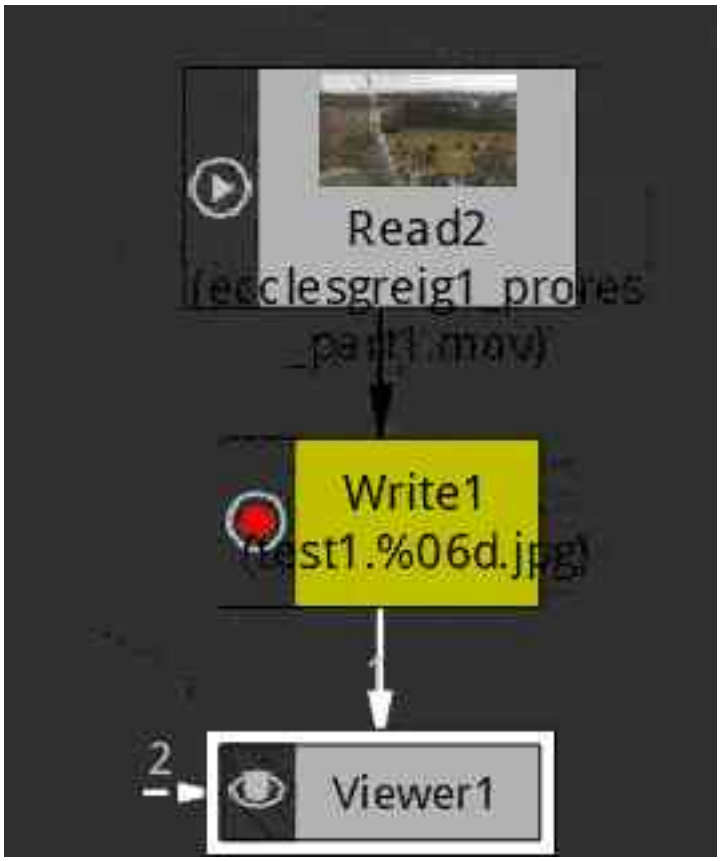
- connect the input of the viewer node to the node you want to look
  - pick the input arrow of the viewer node
  - select the node to view then use shortcuts `0` to `9`
- select the quality of the render (full/proxy)
- start playing
- the images are rendered in memory

- when the preview render is finished all memories are storeed in the memory cache and the playback becomes realtime and plays in loop

See *The Viewer* section for more information.

### rendering

When you want to get the result of your nodetree as image file(s) on disk: - create a write node (shortcut `w`) - connect the write node to the last node of your NodeTree



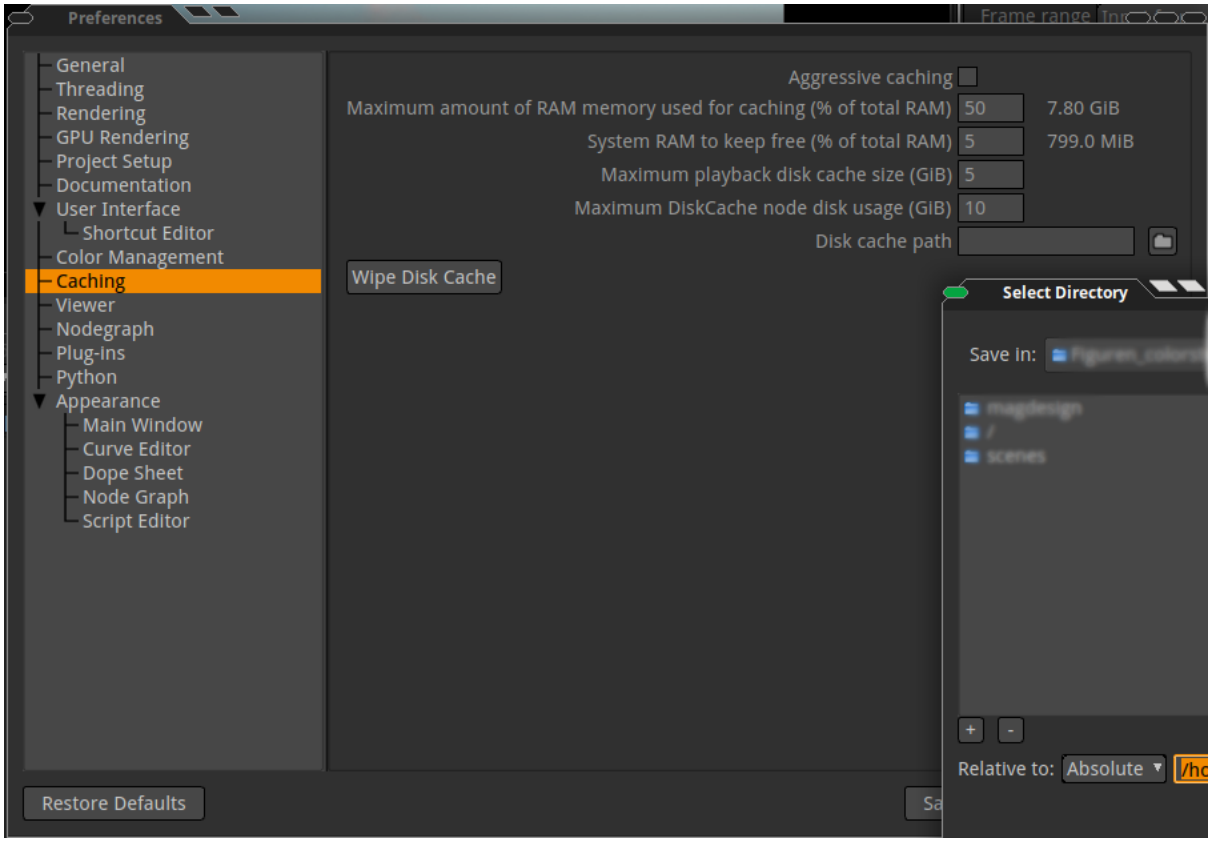

- start the render with the render button in the Write node properties

See *The Write node* section for more information.

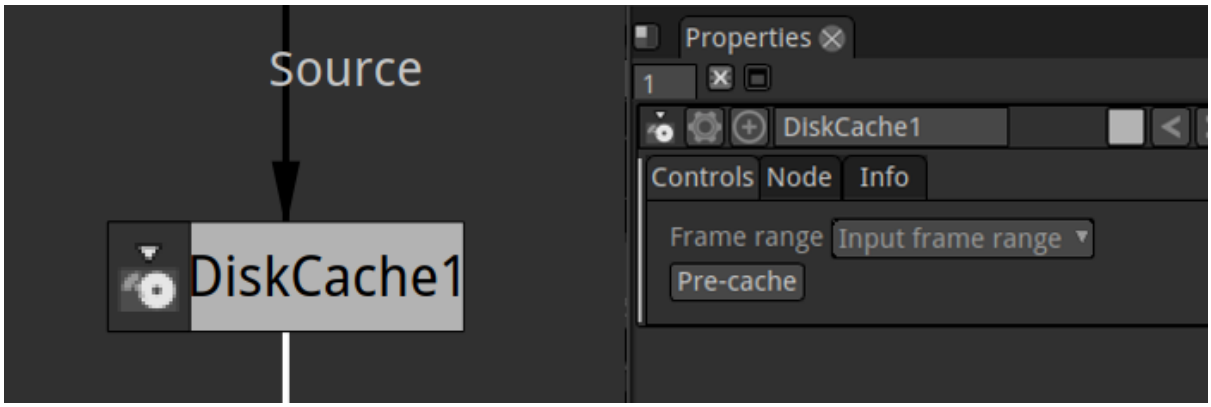
### Image caching

When having a big comp it makes sense to cache the part of the node tree which stays as is to disk. For this we have the DiskCache node. Sometimes this cache also helps preventing crashes while rendering.

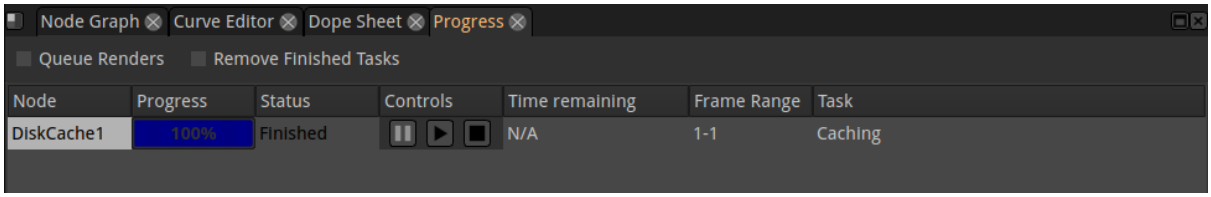
Before using the DiskCache node, make sure you set a Disk cache path under Edit=>Preferences=>Caching.




Make sure you have enough disk space left, your computer might crash due to full harddisk!




Then just add the DiskCache where needed in the node tree and select Pre-Cache in the Properties panel.




You will see the progress bar, wait until its 100% finised, then continue your compositing.

#### Frame ranges

The project frame range (in the Project Settings, key 's' in the Node Graph') is the range that will be used by default when rendering Writers.

Each clip (input or output of a node in the Node graph) also has its own frame range. This "clip frame range" may be used or even modified by plugins, such as Retime (which may change the frame range), Merge or Switch (which set the frame range to the union of their input frame ranges). The plugin may be able to render images outside of this frame range, and it is just an indication of a valid frame range. This information is available from the "Info" tab of the properties panel of each node.

Most generator plugins (e.g. CheckerBoard, ColorBars, ColorWheel, Constant, Solid) have a "Frame Range" parameter, which is (1,1) by default. The FrameRange plugin may be used to modify this frame range inside the graph.

The default framerange of an image sequence or video is the range of the sequence

### 1.3.2 Reformatting elements (empty)

### 1.3.3 Channels

Everything in digital art is channel information and Natron can manage many more than the standard red, green, blue and alpha channels. This is particularly important when 3D rendered output is composited typically consists of such channels as reflection, ambient occlusion, motion etc. It is also important in the management of alphas that typically need intense management within the composting workflow.

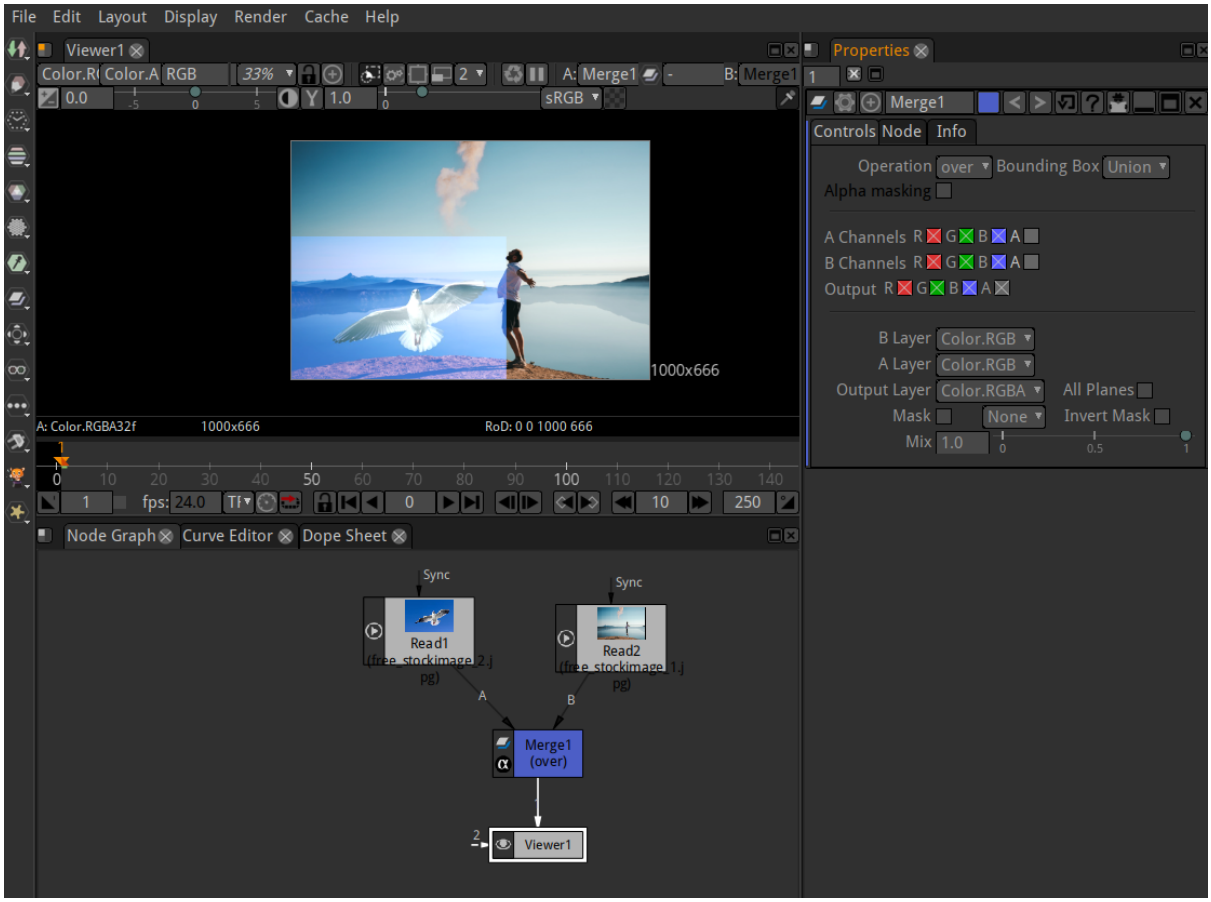
*Shuffle node*

### 1.3.4 Merging images

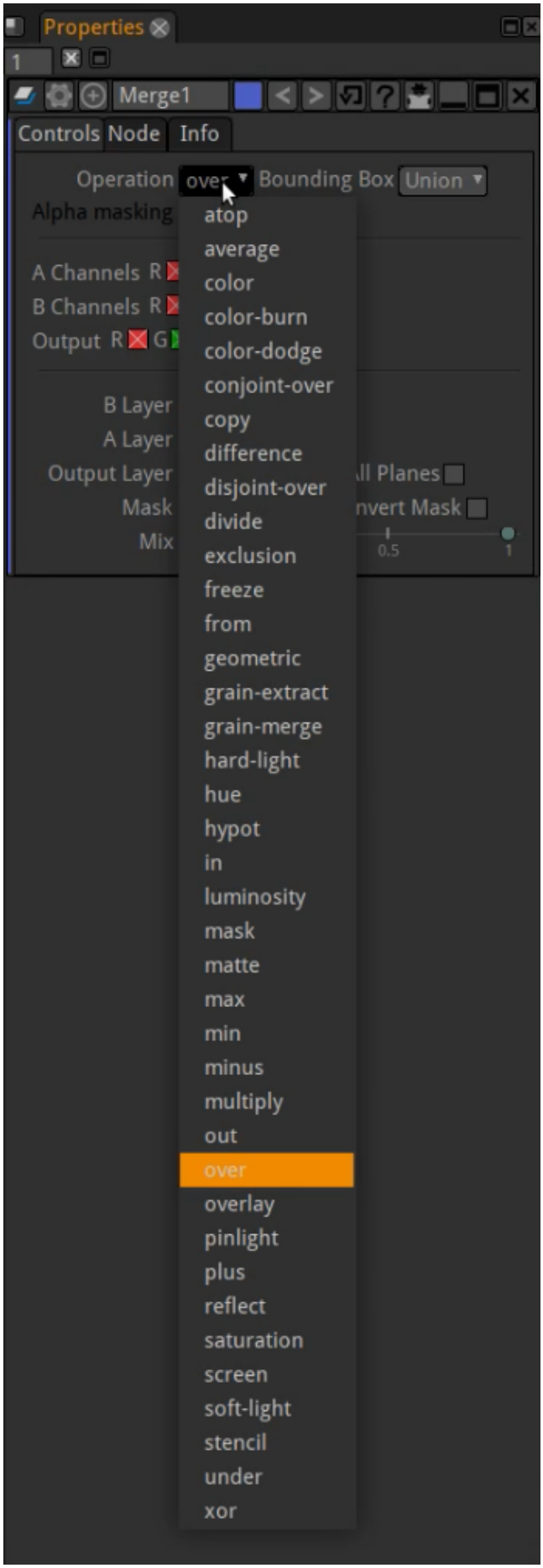
With the merge node you are able to control how your images are combined.

#### Layering Images Together with the Merge Node

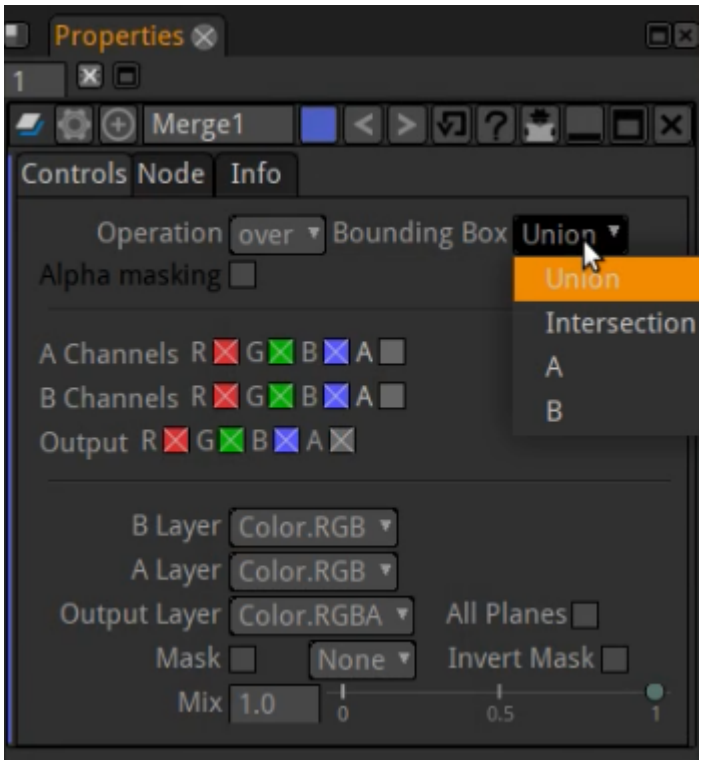
1. Select Merge > Merge (or press M in the Node Graph) to insert a Merge node after the images you want to layer together.
2. Connect your images to the Merge node's **A** and **B** inputs.
3. Connect a Viewer to the output of the Merge node so you can see the effect of your merge operation.




4. In the Merge node's controls, select how you want to layer the images together from the operation dropdown menu. The most common operation is **over**, which layers input **A** over input **B** according to the alpha of input **A**. Just click through the various operations to figure out what they are doing.


Properties
1
Merge1
Controls
Node
Info
Operation
over
Bounding Box
Union
Alpha masking
A Channels R
B Channels R
Output R G
B Layer
A Layer
Output Layer
Mask
Mix
0.5
1
atop
average
color
color-burn
color-dodge
conjoint-over
copy
difference
disjoint-over
divide
exclusion
freeze
from
geometric
grain-extract
grain-merge
hard-light
hue
hypot
in
luminosity
mask
matte
max
min
minus
multiply
out
over
overlay
pinlight
plus
reflect
saturation
screen
soft-light
stencil
under
xor

5. Set which input's bounding box you want to use for the Merge output:




- **union** - resize the output b box to fit both input bboxes completely.
- **intersection** - use only those parts of the image where the input bboxes overlap.
- **A or B** - use the selected input's bbox for the output.

6. With using the **A Channels** and **B Channels** checkboxes you may select which color and alpha channels to use and to output.
7. The **Mix** slider is used to fade/mix in the image from input **A**.

---

**Note:** **A** is always the foreground layer. **B** is always the background layer.

---

### 1.3.5 Noise removal (empty)

### 1.3.6 Keying (empty)

### 1.3.7 Using Roto / Rotopaint

Natron features a vector-based RotoPaint node for help with tasks like rotoscoping, rig removal, garbage matting, and dustbusting. You can draw Bezier and B-Spline shapes with individual and layer group attributes, including per-point and global feather, motion blur, blending modes and individual or hierarchical 2D transformations.

### Roto or RotoPaint?

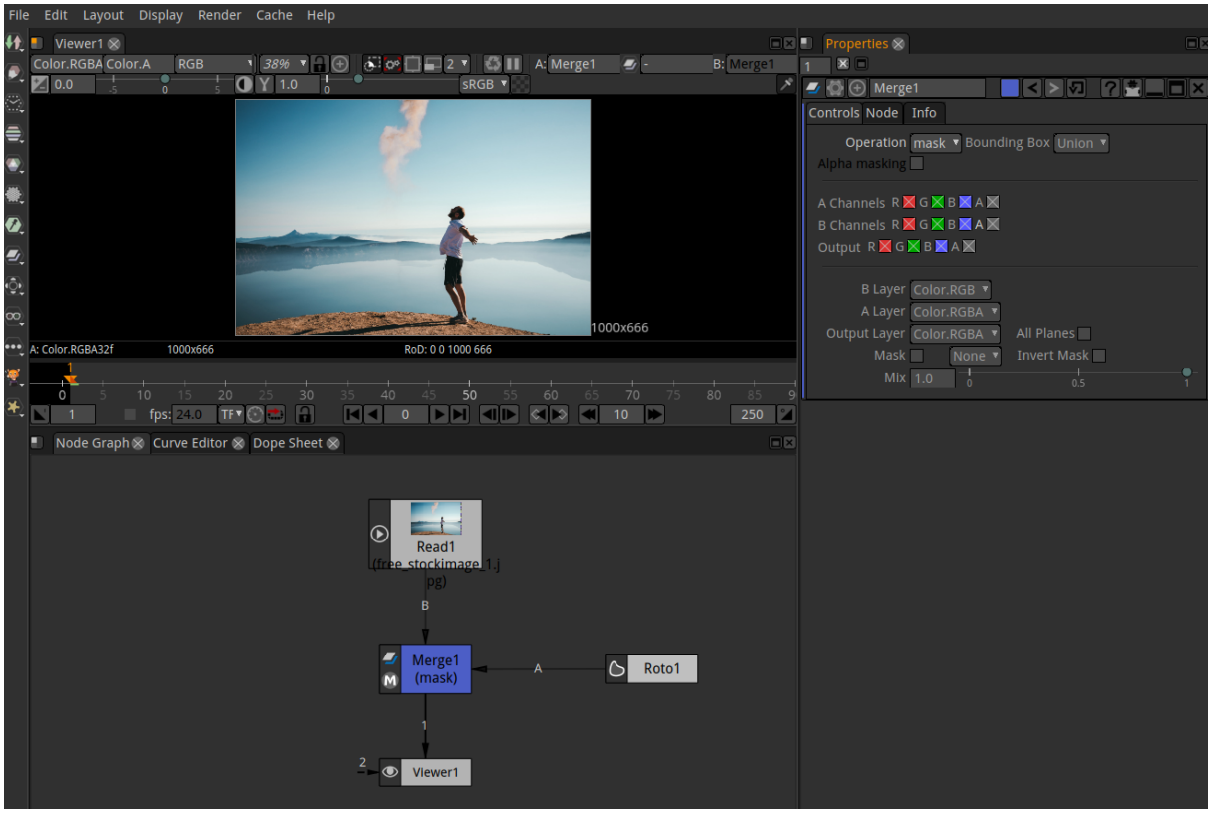
There are two similar nodes in Natron for rotoscoping, Roto and RotoPaint. The main difference between these two is that you can only create and edit Bezier and B-spline shapes with Roto, while RotoPaint allows you to draw paint strokes too with various brushes. So the Roto node is an optimal choice if you're doing rotoscoping only, whereas RotoPaint gives you a broader scale of tools to use.

All tools and controls in the Roto node work the same way as they do in RotoPaint node.

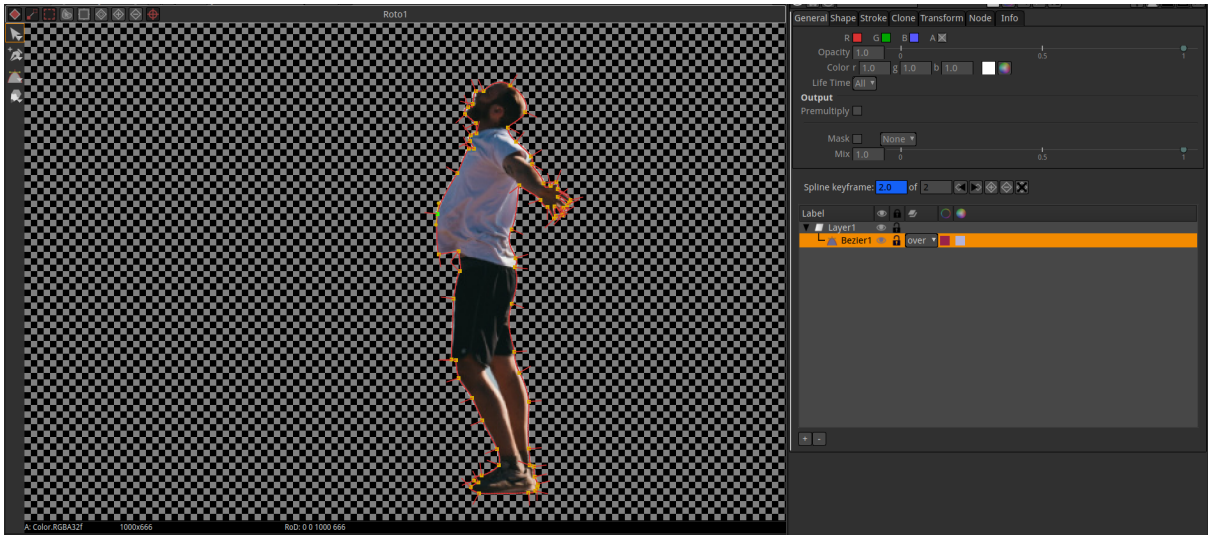
### Roto (Mask)

You can use Roto for masking things, similar to mask tools on other known VFX software. In the following example we will mask the person in the picture:

1. Insert a Merge node.
2. Insert a Roto node.
3. Plug the B pipe of the Merge node to the footage.
4. Plug the A pipe into Roto node.
5. Double click the Merge node, in the Poperties panel under Operation select: mask and make sure that all A Channels are ticked (This is the first thing to double check if the result is not as expected!).




6. Double click Roto node and in the Viewer's left side apears a menu, select Bezier tool.
7. Draw your Bezier directly in the viewer. While holding the mouse it draws curved points, when just clicking it draws edges. Try it yourself to get the feeling.
8. Close your Bezier with hitting Enter or clicking the first point drawn:

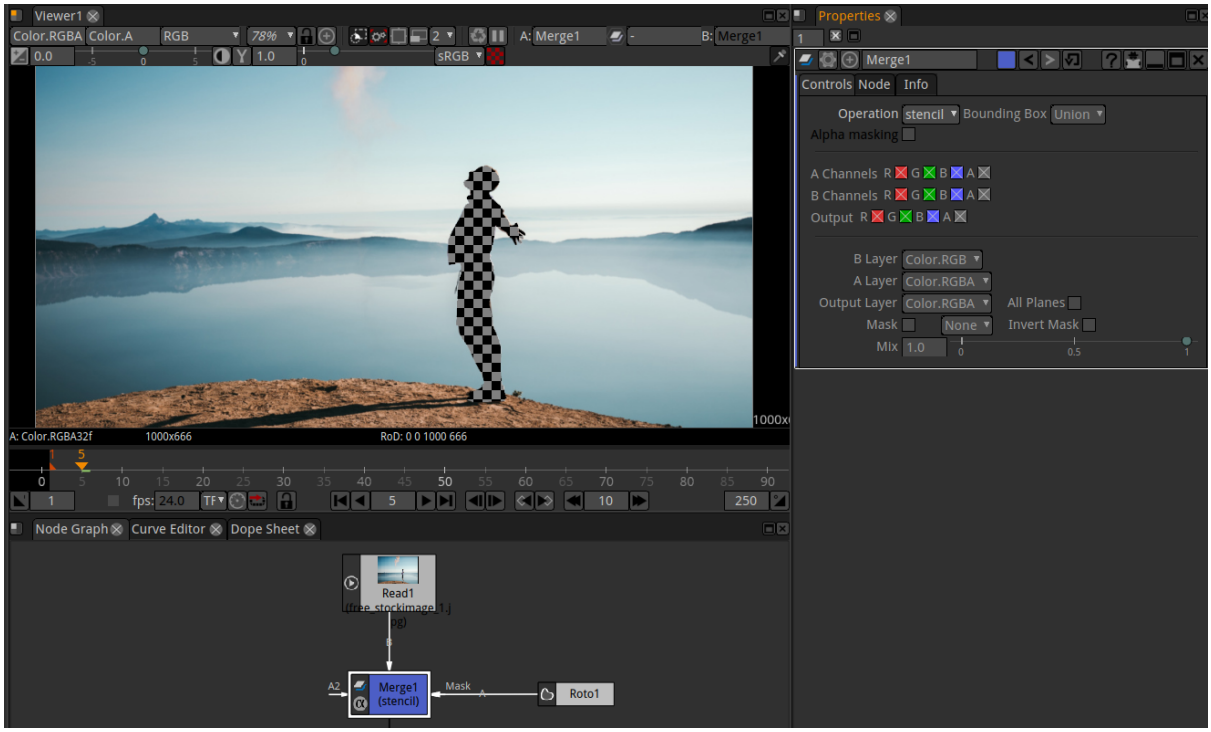



9. To feather some parts, you can drag the red handle lines. To feather everything just add a Blur node between Roto and Merge.
10. To animate the mask, just move the curser in the Timeline, then move your mask, it will Keyframe automatically.

### Roto (Stencil)

If you want to invert the mask:

1. Change the Operation in Merge node to: Stencil



#### RotoPaint (Paint)

The RotoPaint node gives you a broader scale of tools to use than Roto, though many of the controls are shared across both nodes. As with the Roto node, you should use the Viewer tools to create shapes and paint strokes, and then edit them using the control panel.

### 1.3.8 Tracking and stabilizing

#### Workflow Summary

In order to track a planar shape and move a Roto mask or a texture corresponding to that shape:

- Track some points inside your mask (shape)
- In the Transform tab, set the transform to CornerPin and to match-move
- Disable the CornerPin and set the from points of the corner pin at the reference frame where you want your object to move in (basically the bounding box of the shape to track)
- Export to CornerPin
- Append your CornerPin to the Roto node

In a future version we will have a planar tracker that will do that automatically for you in a single click.

#### Detailed Usage

To link parameters in Natron, it is the same as in Nuke except that you drag and drop the widget of a parameter onto another one by holding the control key (or cmd on macOS).

The tracker works differently than the Nuke tracker regarding the "Transform" part. For the tracking itself, almost everything is the same. Basically, in Nuke they can only output a CornerPin with exactly 4 points, and they map 1 track to each corner of the CornerPin. For the Transform node they may use 1 (translation only), 2, or N points to find the final transformation, however that will never be something other than a similarity, which means that it cannot handle perspective deformation.

In Natron, we offer the possibility to compute a CornerPin with N points, that is an homography, which encompasses all distortion-free perspective transforms.

This is much better, because the more tracks you use to compute that CornerPin, the more robust it will be.

An homography is typically used to contain information about a perspective deformation, whereas a similarity is more constrained: a similarity is translation, rotation and uniform scale.

In The Transform tab, this is what we call "the model". Basically, the problem we are trying to solve is to fit a model (i.e. similarity or homography) so it is the closest to the N point correspondences. Each correspondence is the position of a track at the reference frame and its position at the tracked time.

Hence the more correspondences you have (i.e. the more tracks), the more robust the homography is in the region where you tracked features.

The *Fitting error* parameter (in the Transform tab) is an indication of how much difference there is in pixels between the reference point on which we applied the computed transformation and the original tracked point. This is the RMS (root mean square) error across all tracks, and gives an estimate of the quality of the model found in pixel units.

For each tracked frame, the *correspondences* we use to compute the CornerPin are the tracks that are *enabled* at this frame (i.e. the Enabled parameter is checked at this time) and that have a keyframe on the center (i.e. they successfully tracked).

When you press *Compute*, it computes the model (CornerPin/Transform) with all the tracks that meet the aforementioned requirements *over all keyframes*.

When *Compute Transform Automatically* is checked, whenever a parameter that has an effect on the output model is changed, this will recompute the Corner/Pin transform *over all keyframes* again.

The parameters that have an effect on the output model are:

- The motion type
- The Transform Type (i.e. Similarity or Homography)
- The Reference Frame
- Jitter Period
- Smooth: this can be used to smooth the resulting curve to remove some of the noise in the high frequencies of the CornerPin/Transform. Note that in "Add Jitter" mode, you can increase High frequencies to simulate a camera shake that follows the original camera movements.
- Robust model: this is quite complicated, but in short: When trying to find a model that *best fits* all correspondences, you may have correspondences that are just wrong (bad tracking for example). These bad correspondences are called *outliers*, and this parameter when checked tells we should not take into account those outliers to compute the final model. In most cases this should be checked. However sometimes, the user may have for example required to compute an homography (i.e. CornerPin), but the given tracked points (correspondences) just cannot make-up an homography. In this case, if the parameter were to be checked, it would fail to compute a model. If you uncheck this, it will take into account all the points and compute a model that averages the motion of all correspondences.

Also when *Compute Transform Automatically* is checked, the model will be computed automatically when the tracking ends.

We cannot compute the model after each track step (i.e. during tracking) because the model at each frame depends on the model at other frames since we may smooth the curve or add jitter.

So all in all it works differently than Nuke, the whole transformation computation can be more robust and happens as a second pass after the tracking is actually done.

One last thing: to compute the CornerPin in the "Transform" tab of the tracker, the **to** points are computed using the **from** points as reference.

Basically what happens is that the tracking outputs a transformation matrix at each frame. Then when computing the model, this matrix is applied to the **from** points at each frame in order to obtain the **to** points.

So if you were to change the reference points (i.e. the **from** points) with the *Set to input RoD* for example, then you would need to recompute the model at all frames, because the **to** points would just not be the same.

The work is usually done in two steps:

- First, disable the CornerPin so that even if the viewer is connected to the Tracker there is no deformation going on, and set the **from** points to be the RoD (bounding box) of the Roto shape at the reference frame.
- Then, export the CornerPin. It just links the parameters of the CornerPin to the ones in the tracker, so if you change something in the tracker transform tab the changes will reflect onto the CornerPin.

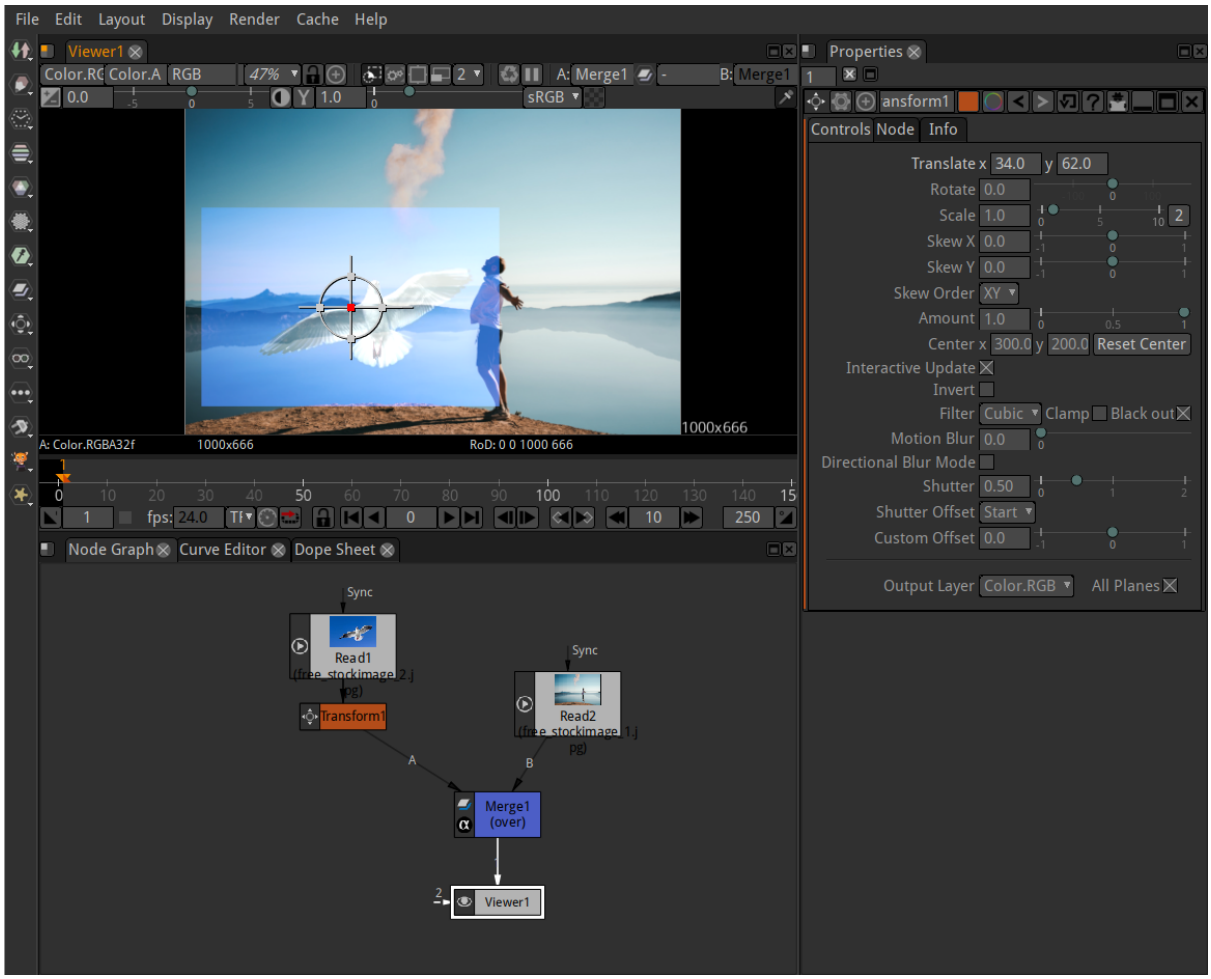
Basically what the Planar tracker will do in the future is automatically do all the steps for you: it will place markers inside the mask for you, track them and output a CornerPin from the bounding box of the roto shape.

### 1.3.9 Transforming elements

Transform nodes are used to deal with translation, rotation, and scale.

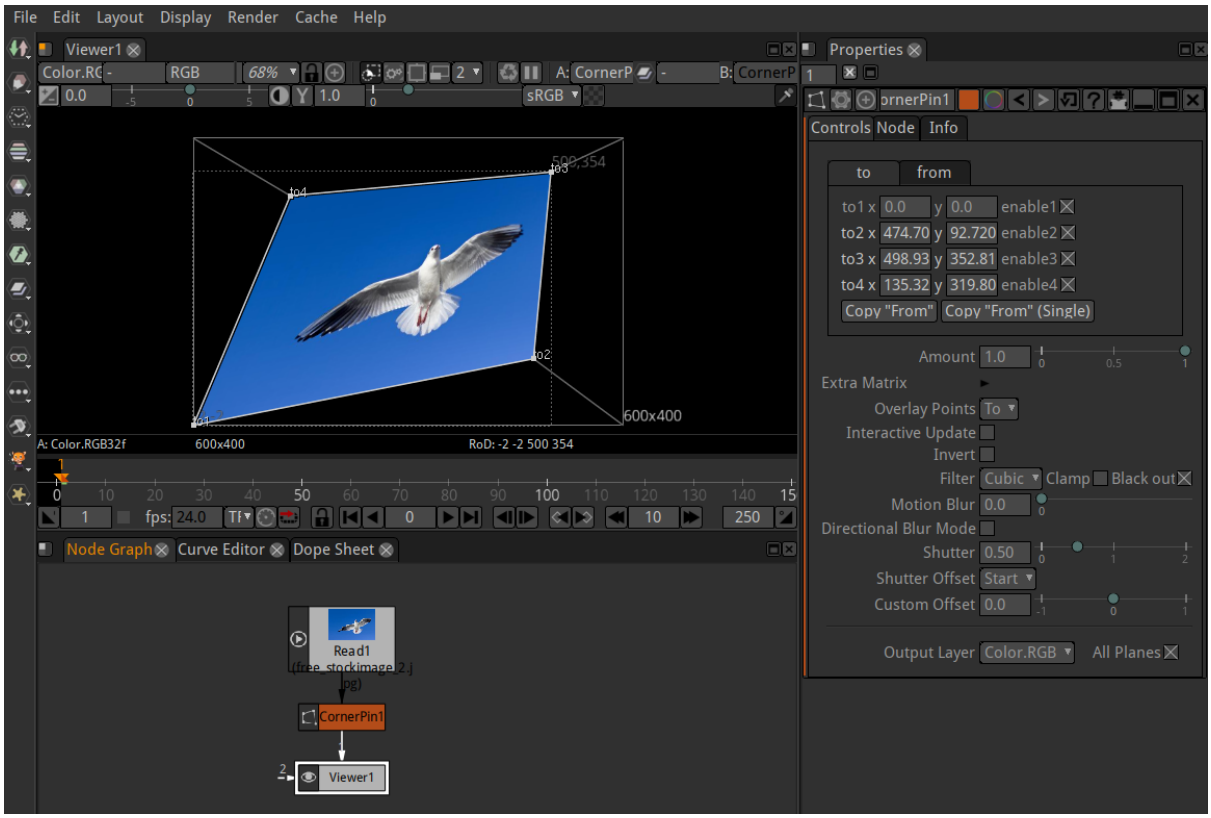
### Transforming Images

1. Select Transform > Transform (or press T in the Node Graph) to insert a Transform node after the image you want to transform.
2. On the viewer there will appear a control element called “Gizmo” (the circle with the crosshairs). Use your mouse within the “Gizmo” to scale, rotate, skew and move your image. Just hover with the mouse over the crosshairs or the circle of the “Gizmo” to fastly select the operation you need.
3. In the Controls Panel you can also input your values with typing in numbers, highligthing the value and scrolling the middle mouse wheel or dragging the sliders (with CTRL pressed the slider reacts in a higher resolution).



### Corner Pin Images

1. Select Transform > Corner Pin to map the position of the four corners of an image.
2. Now you are able to move the corners directly with the mouse or entering values in the Controls Panel.




## 1.3.10 Working with color

How to use Natron color correction nodes and tools to adjust the appearance of the images in your composites. When starting out, this information provides a good overview of Natron scopes and color-correction nodes, however not all options are covered here.

### The nodes

Really important nodes are marked with an asterix:

**Add***

This node affects all values within the image in the same way: literally adding to them. Positive values will brighten all parts of the image. As a stand alone color manipulation it is of limited use, though it is ideal for lightening the blacks of distant objects.

**Multiply***

It can be used to brighten or darken an image, or to fix a color cast. In maths, Multiply has no effect upon zero (black). Hence, the Multiply node will have no effect upon the blacks of an image.

**Clamp**

The Clamp node, like the ColorLookup node, is not explicitly designed to provide feedback on images, however it can easily be used to do so. It functions in much the same way as the ClipTest node: it flattens out the user-defined lower and upper lightness range of the image and, if you tick MinClampTo and MaxClampTo, can replace these values with user defined colors. Properly used it can provide clearer information than the ClipTest node.

**ColorLookup***

A color lookup is what image editors Curves tool does. It is a very powerful tool, capable of replicating the function of many other color nodes. Its disadvantage is that it requires more processing than many of those nodes. The curve of a color lookup can also be a bit more difficult to read than nodes featuring sliders.

**ColorSpace**

Engineers think of color as existing in things called spaces which are mathematical, 3D models the purpose of which is to organise them. Different color spaces serve different purposes: some are meant for printing, some are meant for screen-based work, some are meant for TV. The ColorSpace can move an image from one color space to another. The neat thing about this is that it makes it possible to use channels from exotic color spaces as masks to simple RGB operations or to perform adjustments on images to produce results that would have been impossible in ordinary RGB space. The workflow is: convert from Natron default Linear color space into the color space of your choice, perform your funky magic, then convert back to linear. The saturation channel of HSL can, for example, have a contrast adjustment applied to it which could desaturate the less saturated parts of an image and super saturate the remainder. Woot! Try that in Photoshop! Lab color space is another useful fellow. It is the quantum physics of the color world and I shall but kiss the shadow of it's vast and complex form. The fascinating thing about this space is that it separates the lightness values of an image (the L channel) from it's hue and saturation (the a and b channel combined). HSL also does this but not nearly so well. You can take the a and b and move them into those of another image. The effect of this is similar to image editors hue blend mode. I have found it useful to augment the colorfulness of a dull sky by using the blurred color values from a vivid sunset. Try also blurring the a and b channels. This will blur only the hue and saturation components of an image and leave its lightness values alone. A novel use for the ColorSpace node can be found in the Assets page (see the Double Rainbows asset).

**ColorCorrect***

Artists have for thousands of years been separating the lightness values of their paintings into three bands: shadows, midtones and highlights. The ColorCorrect node is a collection of operations that not only can effect the entire image but can address separately these three ranges

**Gamma**

This raises or lowers the middle-ish point of the color curve. The default value is one, with smaller numbers darkening the lower registers and higher numbers lightening them. There is a Gamma node but I find that stand-alone gamma adjustments are best done using ColorLookup so as to give you flexibility over where the 'grab point' of your curve is. Both ColorCorrect and Grade have built in Gamma value sliders.

**Grade***

This node is a collection of operations that combine to work upon the lightness and hue values of an image. It is mostly a fixer: used for correcting and matching, though of course it can also be used for more aesthetically lavish purposes.

**Histogram**

**HueCorrect***

This can be a very tricky node to get to know. We can conclude that the perception of the amount of hue within a color (its chroma) is linked to two things: saturation and lightness. When adjusting color it is important to have separate control over these values, which is something that the HueCorrect node offers. This effect it masks by two further values: hue and saturation. Its interface offers control over nine values:

Saturation (sat) This can change the saturation value of an image, with respect to particular regions of hue.

Luminance (lum) This can change the luminosity (i.e. brightness) value of an image, with respect to particular regions of hue.

Luminance components (red, blue, green) This can change the r, g and b channels of an image, with respect to particular regions of hue.

Suppression (r_sup, g_sup, b_sup) This is similar to adjusting the luminance components, but instead of nullifying them (replacing them with black), replaces them with white.

Saturation threshold (sat_thrsh) This only effects the image if first the 'Luminance' or 'Luminance components' have been adjusted. Adjustments to this value will act as 'per hue' saturation level mask to the effect.

**HSVTool**

The HSVTool has three functions: Color replacement, Color adjust, Hue keyer

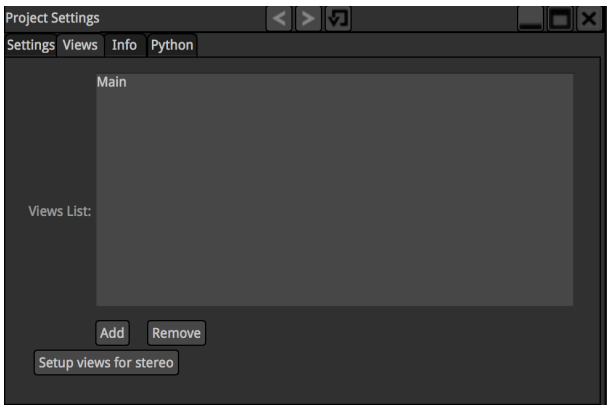
**Saturation***

A color becomes a grey if its RGB values are all identical. The Saturation node desaturates an image by averaging its RGB channels. More localised control over saturation is offered by the HueCorrect node.

### 1.3.11 Stereoscopic compositing

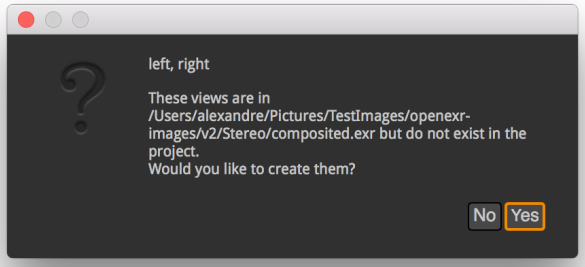
#### Importing stereoscopic sequences

When creating a new project in Natron, by default there is a single view present. It is called the "Main" view.

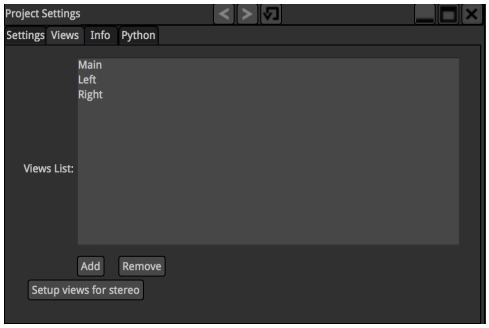



You can add, remove and rename views as desired. Clicking the "Setup views for stereo" button will make exactly 2 views named "Left" and "Right".

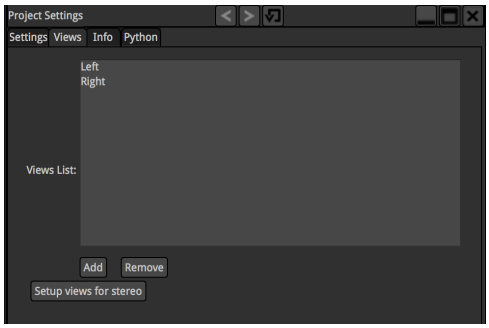
Upon importing an EXR file containing multiple views within the file, Natron will prompt you to create the appropriate views in the project:



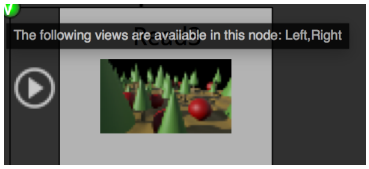

If clicking yes, Natron will create the missing views in the project:



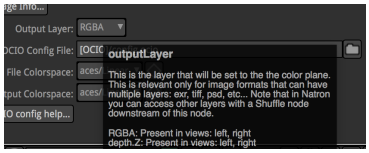
You can remove the “Main” view if needed (in our case it does not make sense to leave it in the project). You can do so by clicking either Remove and selecting the “Main” view or clicking “Setup views for stereo”:



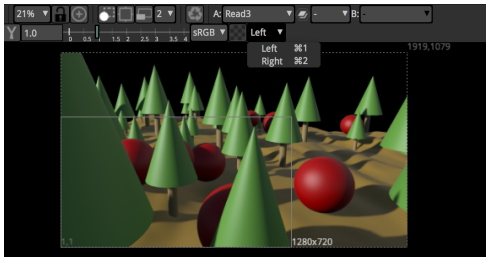

The Read node will have a special “V” mark on its top-left corner, indicating that it has multiple views available. When hovering the “V” indicator with the mouse, more information is available regarding which views are present in this Read node



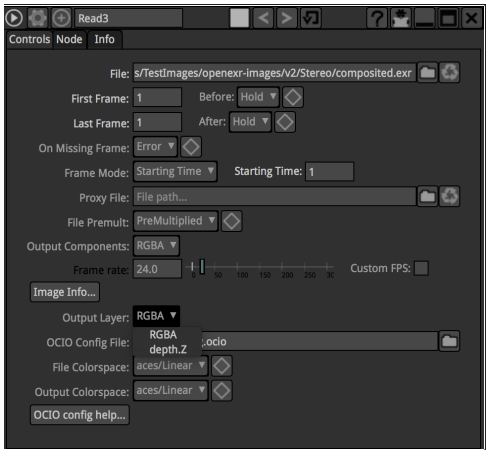

Hovering your mouse over the Output Layer parameter will detail which layer is available in which view:




When the project has multiple views available, each viewer will have a drop-down with available views. You can select with view to display:

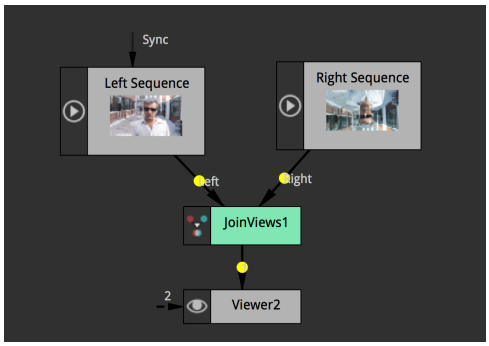



If we take a look at our Read node’s properties, you can see that we have 2 layers in this file: RGBA and depth. Layers may sometimes not be present in all views in the file, but the Read node will show the union of all layers available across all views:



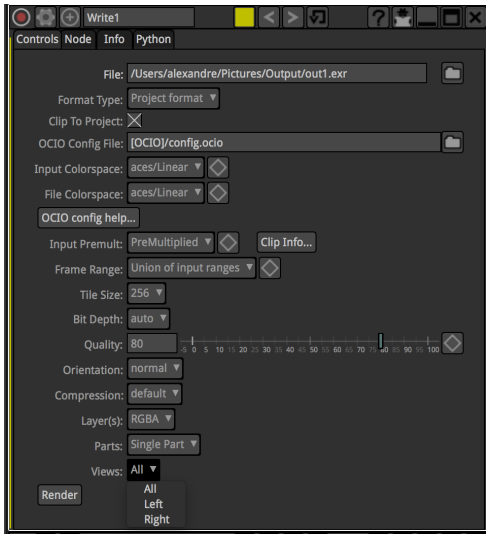
### Joining separate views

In Natron you can join different simple-view files to a multiple-view stream by using the JoinViews node, like this:




### Exporting stereoscopic sequences

Exporting multi-view files in Natron can be done multiple ways: Either you want to have a separate file for each view, or you want all views to be in the same file. The later is only supported by the EXR file format. When exporting to EXR, the Write node properties panel will have an extra "Views" parameter:

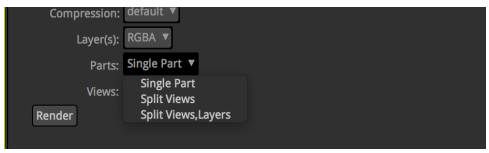



This is quite straight-forward: you can select which views you decide to export.

You can also select which layer you would like to export:

The "All" choice is only available for the EXR and TIFF file formats which allow embedding more than 1 layer per-file.

Another interesting parameter controls how the EXR/TIFF file is written, this is the "Parts" parameter:




When set to "Single Part", the Write node will aggregate all views requested to render in a single "part" of the file. Single part files are what is written by OpenEXR 1.x applications, thus selecting "Single Part" ensures compatibility

with other applications that do not support OpenEXR 2.

When set to “Split Views”, all views will be scattered in different parts of the file. The resulting file will only be readable in applications that support OpenEXR 2 but with the advantage of being faster to read than the single-part files. Note that if you select “All” layers to render all layers will be aggregated for each view.

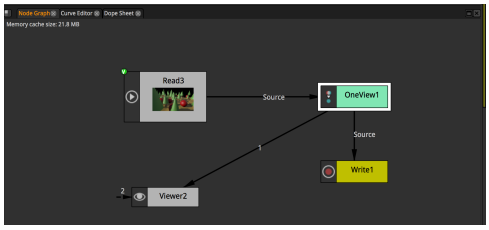
When set to “Split Views,Layers” each layer of each view will be written to a separate part, ensuring EXR optimized for decoding speed, though the file will be larger.

#### Writing to separate files

You can choose to export views to a separate files by adding a %v (which will expand to the letter ‘l’ or ‘r’) or %V (which will expand to the word “left” or “right”) to the output filename:

In that case the “Views” parameter will no longer be available. This is how you should proceed if you want to output multiple views but do not want to write EXR’s.

By default for files that do not support multi-view (I.e: anything besides EXR), if requesting to write multiple views to the same file, Natron will only write the first view in the project’s views. If you do not want to render all views but a specific one, you can use a “OneView” node prior to your Write node to specify which view you would like to write-out:




### 1.3.12 Expressions (empty)

## 1.4 The Nodes

### 1.4.1 Common Properties

We describe here the type of parameters that can be found on many nodes. And how to use the properties window.

#### The properties window

1: Clears the properties panel. It is a quick way to close everything in the properties panel.

2: Minimize the panels to keep only the node names visible. One can then choose wich ones to close completely with their own close button (see 14).

3: Maximum number of nodes simultaneously opened in the propoerties pane. Too many opened panes can be confusing as some are not visible anymore because of limited screen space. Too many nodes opened can also slow down the user interface.

### The Utility icons

1: The node icon. Just a visual clue to see what a node really is (in case its name was changed). It is the same icon used in the node Graph.

2: Special settings of the nodes. If a node is often used with the same settings, these can be saved/loaded as a preset file. This function is not used very much as it can be more convenient to copy-paste the node from a dummy Natron project used as a node presets library.

One can also remove animations while keeping parameter values. This complements the "Restore Defaults" button (cf. 9).

3: Center the node graph on this node. This can be useful to check wich node your are about to make changes on.

4: The script name of the node as it appears on the top of the box in the node graph

It is considered a good practice to leave this name unchanged and change the Label in the node tab instead. It helps see what the node really does just by looking at the graph. There cannot be 2 nodes with the same name. The names cannot contain spaces.

In Python, this name is accessed through the `getLabel` function.

5: The node color as seen in the graph. Click to change. This is just a visual cue and has no effect on the resulting image.

6: Overlay color. For nodes that draw helpers in the viewer, a color can be specified here. This can be used if multiple transform nodes are opened to help you tell wich one belongs wich handle.

7 / 8: Undo / Redo. These functions are specific to the node. It is separate from the global Undo / Redo of Natron and thus gives you more control on your changes.

9: Restore default values for this node on all parameters, and delete animations.

10: Help brings you to the reference documentation for this node.

11: Hide parameters without modifications. .. note:

```
**Tip:**
This button is a quick way to find what parameters were modified in a node.
```

### Layers Properties

Channels to process Output Layer Mask

### Time Properties

Frame Range

Lifetime Range

Enable Lifetime

#### Geometric Properties

Extent

Transform

Filtering

#### Functional Properties

Mix

Utility

Hide Inputs

Force caching

Preview

Disable

### 1.4.2 Image Nodes

These are the nodes located in the image icon of the toolbar.

#### Checkerboard Node

The checkerboard node can be used to generate varoius geometric patterns. By default it generates a checkerboard

#### Usage

The pattern can be changed in size and color.

The Checkerboard can be used to generate a grid when the 'line color" and "line width" are set.

The pattern is centered by default. To control the position of the lines you can add a G'MIC_ArrayRegular node with "X-Tiles"=1 and "Y-Tiles"=1. To make the pattern tileable you will have to change the Extent of the checkerborad to "Size" and choose a vulae that is a multiple of the "Box Size" parameter.

#### ColorWheel Node

The ColorWheel node can be used to generate disc patterns. By default it generates a preview of all the colors in the visible spectrum

#### Usage

The pattern can be changed in size and color.

The ColorWheel can be used to test the result of a color grading. Below we can easily see the settings of an HSVTool darkening the reds.

The ColorWheel can be desaturated to turn it into a circular geometric pattern.

### Read Node

The read node brings movies or still images into the script. When you call it from the menu (shortcut key R) a file browser will appear. You will need to navigate to the 'Users' folder and look for your user identity in the list.

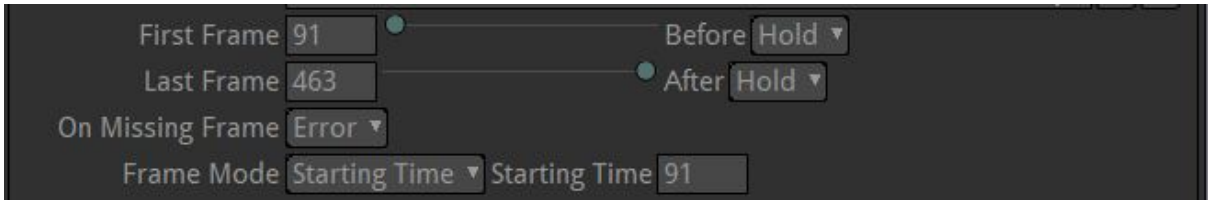
It might be easier to just drag your files onto the Node Graph where they will automatically be assigned a Read node. Image sequences need to be placed inside a folder, and the folder dropped into Natron. Read-in paths can be tidied up later. Natron will find all image sequences in this folder recursively (ie. folders inside folders)

### Filename

Click on the folder icon to open the file browser and choose the file you want to read from disk.
See *The File Browser* section for more informations.

### Timing

The Read node can change the timing attributes of a movie file or image sequence.




Main Settings

- "First Frame" and "Last Frame": By default the value of the beginning and end frames found on disk. (The length is not shown, it is length=Last-First+1 ). You can change the First and Last values tu cut head or tail of your clip
- "Frame mode": The sequence can be moved in time. Selecting "Time Offset" and inputing -100 into this will shift the sequence back in time by 100 frames. "Starting time" use an absolute start time.

Other Settings

- "after" and "before": They define what happens before the first frame and after the last. The default is "hold", but by selecting "loop" or "bounce", looped animations can be made. An example use of this is to loop the swaing of a tree. The value "black" in these menus results in a black transparent image. "error" also gives a black image but should stop a render
- "On Missing Frame": let"s you use a sequence by filling the gaps with previous or next image. This can be used for test renders from 3D rendered only 1 frame out of 2. or to quick fix a broken file that you have to remove

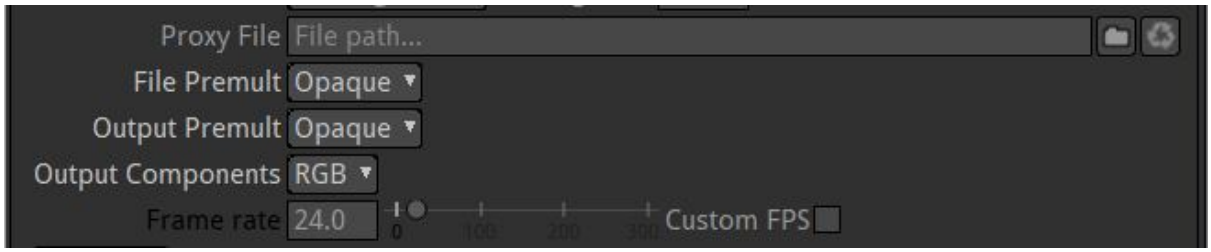
---

**Note:** **Tip:** Natron behaves way better with image sequence (numbered) files rather than Movies (quicktime, mp4, ...). More reliable, faster access, possibility to overwrite parts of sequence when (re)rendering are the main reasons for this

---

### Interpretation

The read node can change how the image is imported in the project




Main settings

- "Frame rate" defaults to the value as found in the file. It can be overridden if the file has been encoded with the wrong values

---

**Note:** A numbered file sequence has no absolute framerate. So, when loading a sequence you should set the Frame rate here as Natron can not guess from the file. As noted below this will however not change the behavior of Natron

---

---

**Note:** Natron is frame rate agnostic. It means that it will always process one frame in the source to one frame to the output. The framerate is mainly a metadata. You can do framerate conversions explicitly in your node tree. (24 to 25fps with "retime" node set at speed 0.96)

---

- Premultiplication. If your image has transparent areas, you should know if it was encoded in "premultiplied" or "unpremultiplied" mode. Natron can work in both modes (and switch from one to the other with Premult and Unpremult Nodes)

  For a video leave all this to opaque, for most photoshop like documents use "premultiplied" in all, for some 3D render passes you will switch both to "unpremultiplied". If both values are the same, the image is not changed but the metadata passed to the node tree. If the values are different, the file is "Premultiplied" or "Unpremultiplied" as needed

---

**Note:** Most programs output premultiplied images, but not all 3D renderers

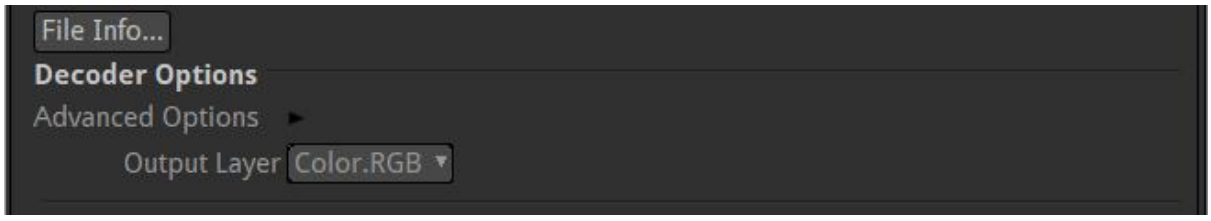
---

Other settings - "Output Components" tells Natron wether or not to ditch the Alpha channel from the source file.

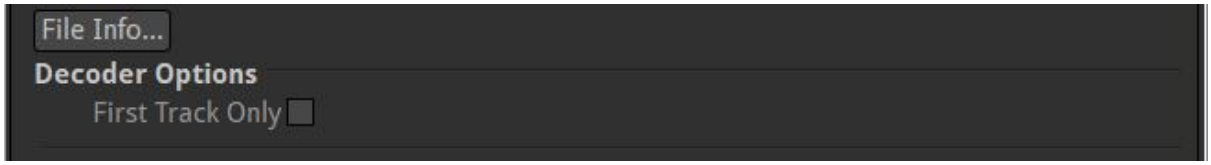
### Decoding

The read node can change the way an image is rendered from the values in the disk file. These options change with the type of file being read.

jpeg options:

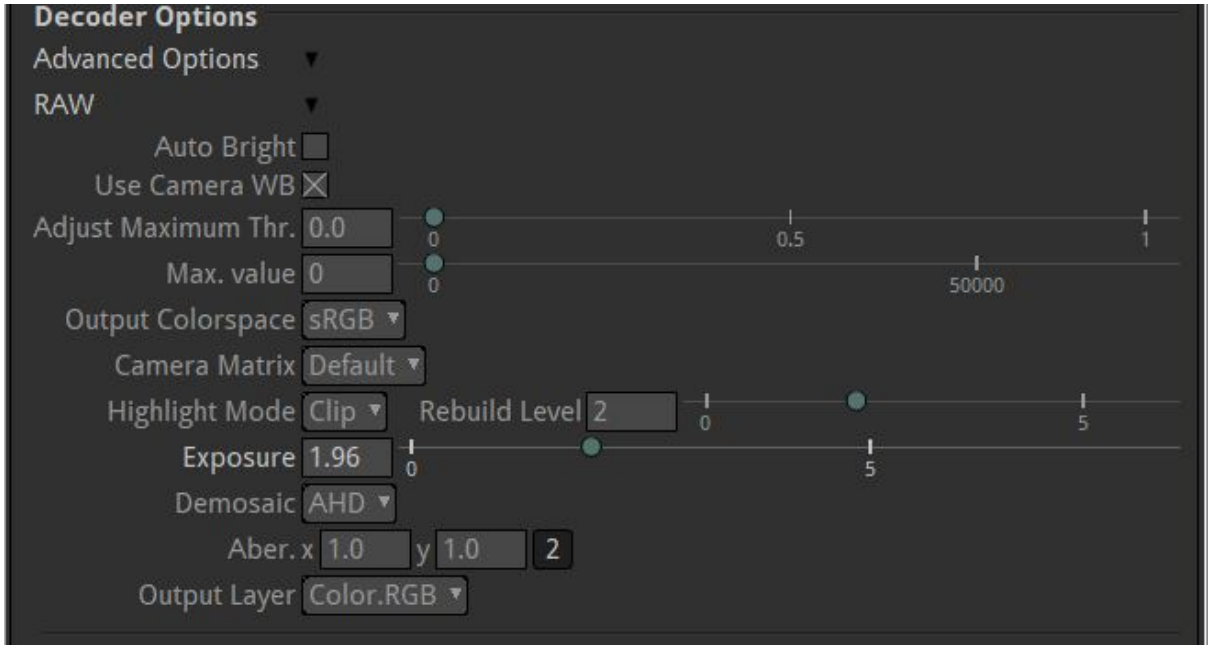



quicktime options:




Allows multi track videos (eg. stereo files) to be split in different Layers in Natron

RAW file options:

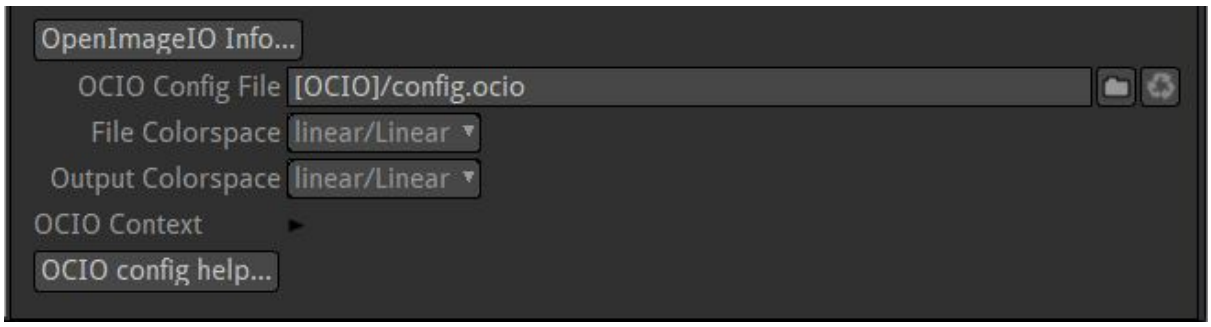



PDF file options:

Multi-page PDFs can be loaded in Natron. To view the different pages, add a Shuffle node after the Read node to choose the layer containing the desired page.

### Color

The read node can change the color interpretation of an image.




The file will be converted from “File colorspace” to “Output Colorspace”

---

**Note:**

**Tips:**

- It is recommended to leave “Output” to linear as this is the recommended basic workflow in Natron
- When file and Output spaces are the same, no conversion will occur

See *The readers* section for more information.

### Write Node

The Write node is where the result of the script is rendered out. This may be formatted as a .mov file, or as an image sequence.

- Create a write node (shortcut `w`).
- Connect the write node to the last node of your NodeTree.
- Press the little folder icon next to the 'file' value, then navigate to Where you wish the result to be rendered.

See *The File Browser* section for more informations.

- The name of the output must be followed by the file extension of the format (.mov, .tga, .tiff etc). Once this is in place, the parameters in the Write node will expand to include those that are specific to that format.
- The "frame range" "First Frame" "Last Frame" parameter should be specified. In the screen shot below, a frame range of 1 to 665 has been set.
- Start the Render (ie. start calculation of the result)
  - press the "Render" button in the node properties.
  - Or go to the menu select Render->Render Selected Writers

### Filename

Click on the folder icon to open the file browser and choose the file you want to read from disk.

See The File Browser section for more informations

### Format Type

The size of the output image in pixels. This size is not influenced by the proxy setting of the viewer

### Color

The write node can change the color space of the output image.

The file will be converted from "Input colorspace" to "File Colorspace"

---

**Note:**

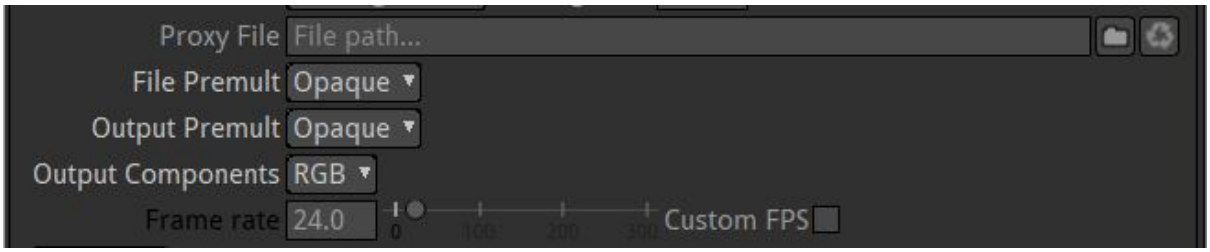
**Tips: Natron**

- It is recommended to leave "Input" to linear as this is the recommended basic workflow in Natron
- When file and Input spaces are the same, no conversion will occur
- Output usually is set to the same colorspace as the main read node. This results in an unmodified image.

---

### Interpretation

The Write node can change how the image is exported to disk




- Premultiplication.

  If the processed image has transparent areas and the state of the "premultiplied" flag has been treated properly in your node tree, Natron will guess the value of the "Input Premult". If the result is not correct you can force the "Input Premult" to your liking.

  when writing RGBA to a file format that does not support alpha, the write node just drop alpha and don't premultiply (This is new from v2.4 to avoid that the file written to disk look different from the viewer in Nuke

- **Output Components**
  tells Natron wether or not to ditch the Alpha channel. The A option is disabled when image format doesn't support alpha channel

---

**Note:** For Quicktime files the Alpha support is located in the encoder options. Beware that most codecs don't actually support alpha channel (DNxHD, Prores do)

---

### Encoding

The read node can change the way an image is rendered from the values in the disk file. These options change with the type of file being read.

quicktime options:

- **Frame rate**
  defaults to the value in the project settings. It can be overridden for movie file types. Image sequence don't have Frame rate.

---

**Note:** **Tip:** Natron behaves way better with image sequence (numbered) files rather than Movies (quicktime, mp4, ...). More reliable, faster access, possibility to overwrite parts of sequence when (re)rendering are the main reasons for this

---

See *Rendering projects* section for more information.

### 1.4.3 Draw Nodes

These are the nodes located in the pencil icon of the toolbar.

#### Lightwrap Node

LightWrap helps composite objects onto a bright background by simulating reflections from the background light on the foreground, around its edges.

Input A is the foreground image and its matte, and input B the the background to use for the wrapping effect.

The output of LightWrap should then be composited over the background to give the final composite.

#### Usage

Increase FGBlur and Intensity to make the Lightwrap more visible.

Increase Diffuse and BGBlur to make the Lightwrap softer, that is remove details from the background.

It is easier to adjust the settings with the Generate wrap only box.

This can be useful to manage precisely how Lightwrap is composited onto the FG image. It is common practice to use a “plus” Merge rather than the default “Over”. (see Merge3 node in the example below)

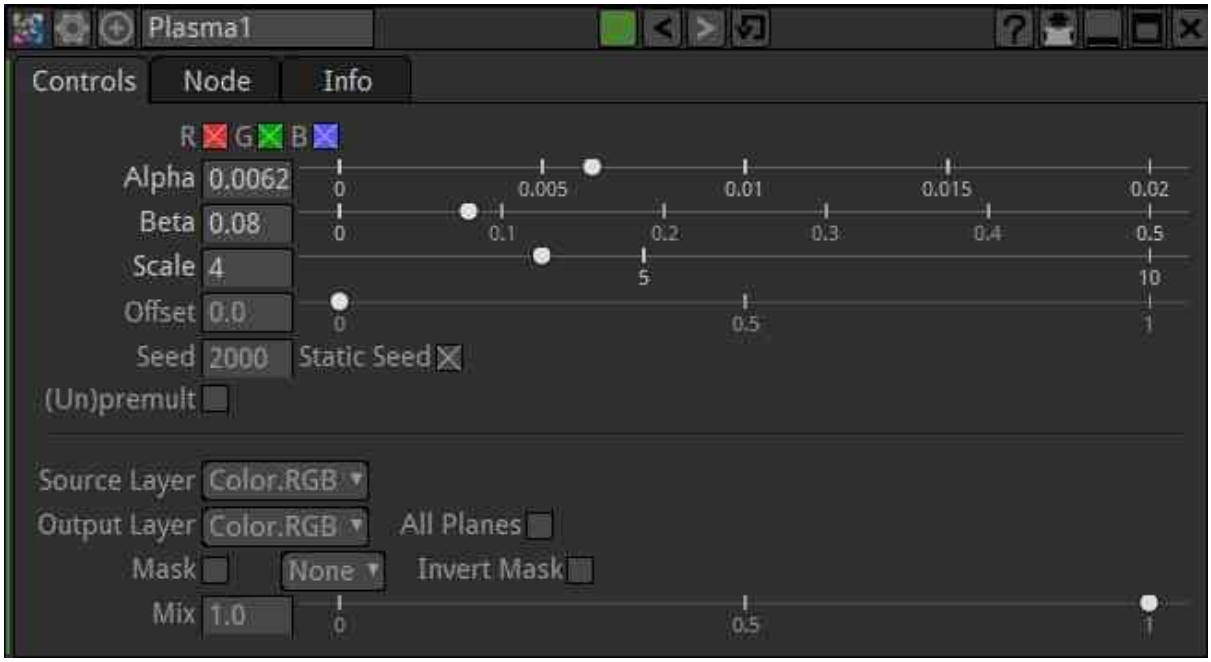
Use “Enable Glow” to allow the Lightwrap to be visible also on the background image itself.

The lightwrap can also be made of a unique color of your choice with “Use Constant Highlight” and “Constant” color.

#### Plasma Node

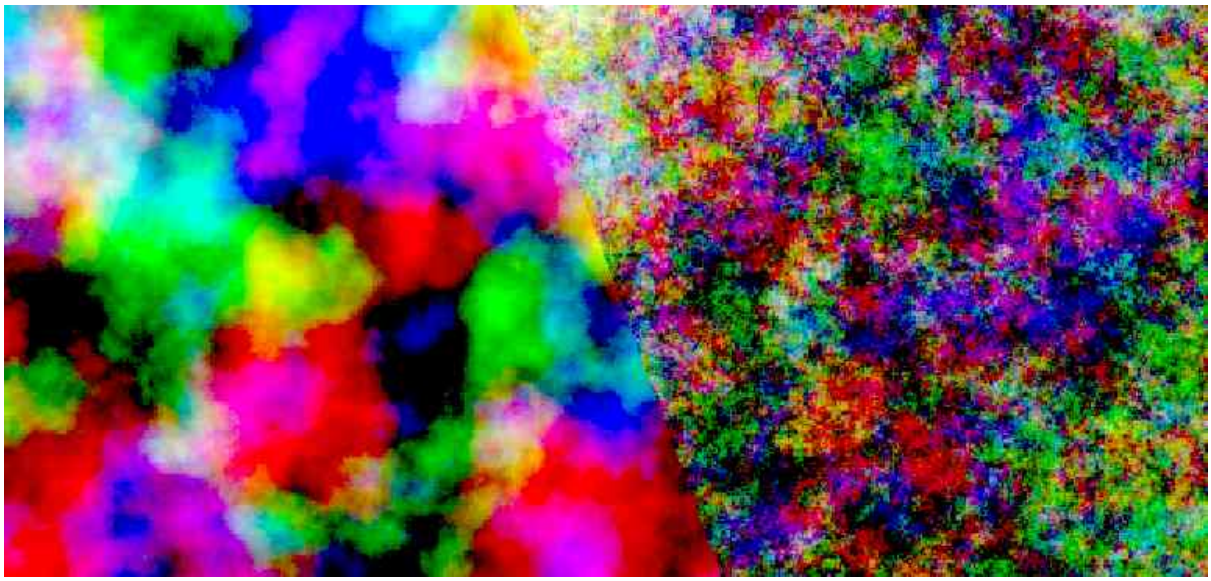
Creates cloudy noise. Brightness of the result can be modulated by the source image

### Usage




The “Scale” parameter changes the size of the clouds pattern

check “Static Seed” for a freeze frame of the effect



**Above:**

- high alpha/low beta gives clean clouds
- low alpha / high beta gives noisy clouds

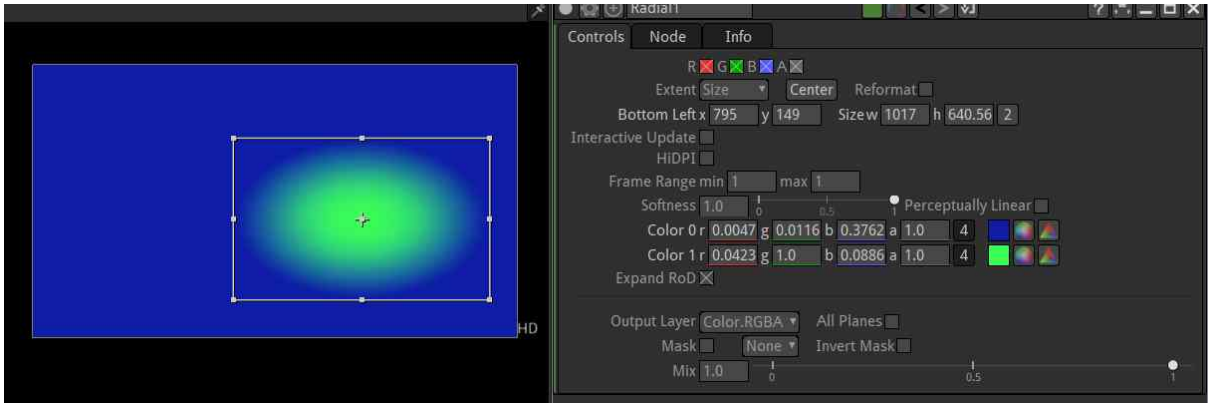
This node alone is not suitable for image regrain. but with a scale of 1 it can partly simulate the splotchy behavior of high speed film stocks

### Radial Node

Radial creates a radial gradient.

It is very useful for masking off a color adjustment and its softness parameter can be edited without compromising its edge values too much. Frequently use it to mask out nebulous regions of an effect.

It is faster to use and to process that a Roto or RotoPaint node.




### Usage

Use the rectangle gizmo visible when properties are opened to edit the shape If an exact circle is required then the “2” button should be pressed in the size parameters. If the circle should be centered in the image press the “center” button

A hard-edged circle can be obtained by setting the softness paramet to 0.

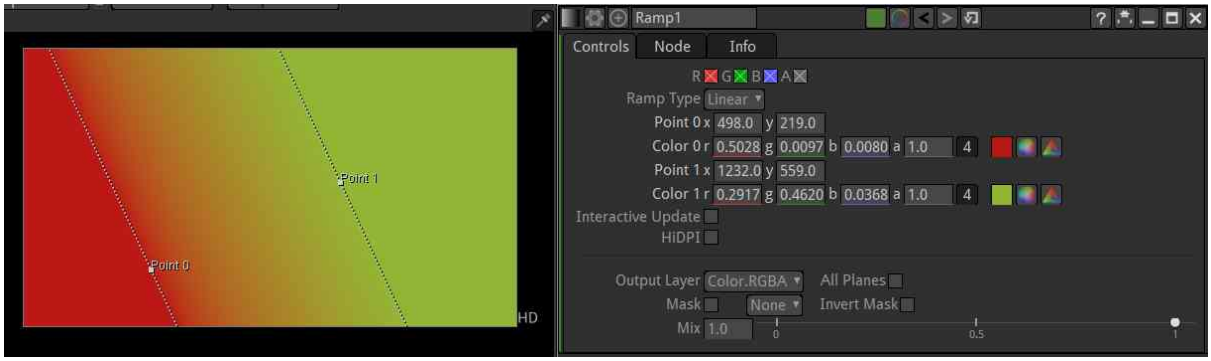
The End colors can be changed with “color 0” and “color 1” parameters.

To fill the image with the effect set “Extent” to “Project”

The node allows different 2 of transitions. With or without the “Perceptually linear” checkbox.

### Ramp Node

Ramp is what grown-ups call a gradient. The Ramp node of Natron give a butter-smooth gradient that is best used to mask off color operations.



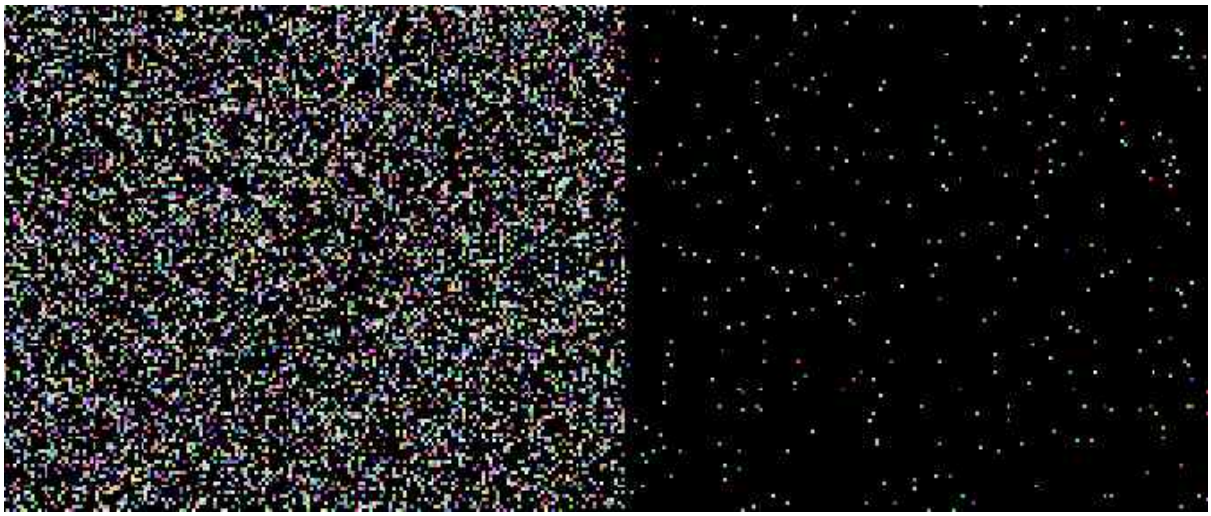
### Usage

The End colors can be changed. And the end positions can be moved in the viewer with the point 0 / Point 1 widgets visible in the viewer when the properties of the node are opened.

The Ramp type allows different types of transitions. The gradient is always linear. The colorwheel node can be changed to become a radial gradient.

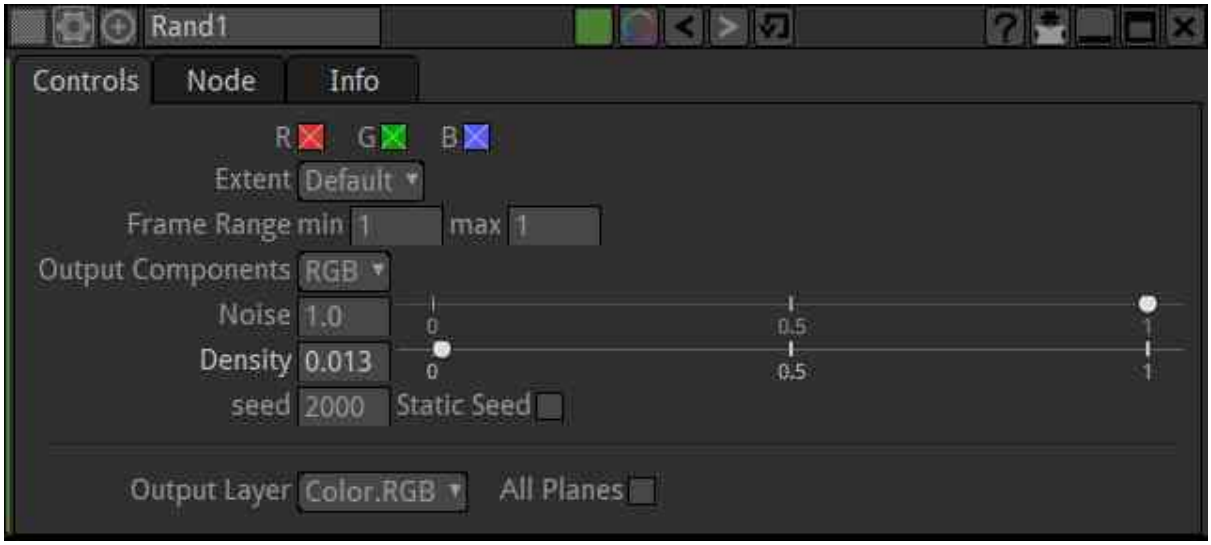
### Rand Node

Creates uniform Random noise. This node alone is not suitable for image regrain.



2 different Rand with different values of “Density”

### Usage




The “Density” parameter allows one to change the average distance between the random dots of the noise

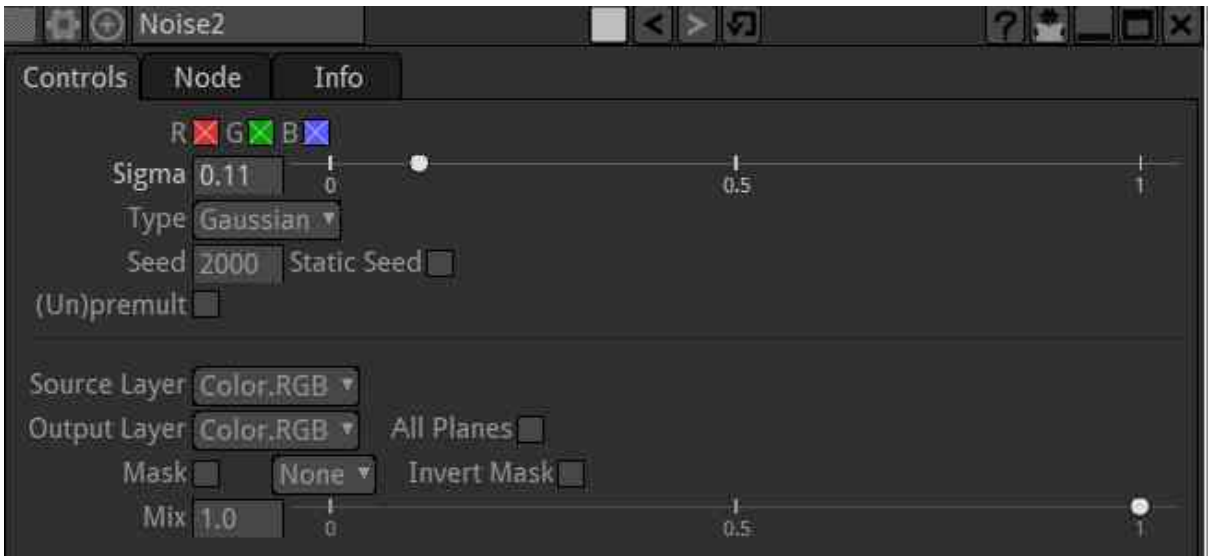
check “Static Seed” for a freeze frame of the effect

### Noise Node

Creates noiseover the source image.

2 different types of Noise. Poisson on the left, Gaussian on the right.

### Usage




The Sigma parameter control the amount of noise.

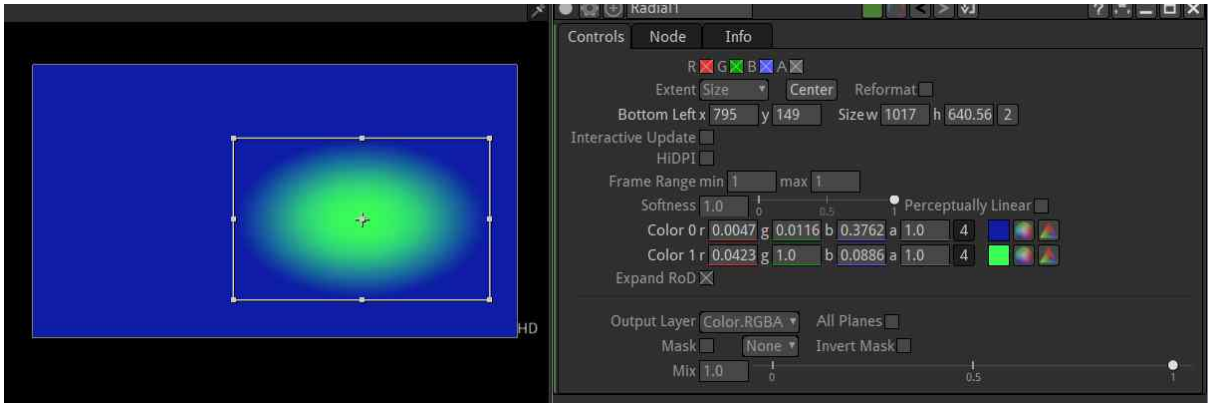
The “type “Poisson” noise reacts to the source image. It could be used to simulate electronic sensor noise. It gives a black result when no source image is provided. Type “Gaussian” is more uniform and is not dependant on the source image

check “Static Seed” for a freeze frame of the effect

### Rectangle Node

the Rectangle node makes rectangle shapes. It can add rounded corners and soft edges to the shapes. It is very useful for masking off a color adjustment and its softness parameter can be edited without compromising its edge values too much. Frequently use it to mask out nebulous regions of an effect.

It is faster to use and to process that a Roto or RotoPaint node.




### Usage

Use the rectangle gizmo visible when properties are opened to edit the shape If an exact square is required then the “2” button should be disabled in the size parameters. If the rectangle should be centered in the image press the “center” button.

A hard-edged circle can be obtained by setting the softness paramet to 0.

The End colors can be changed with “color 0” and “color 1” parameters.

To fill the image with the effect set “Extent” to “Project”.

### Roto Node

Using a Roto node a vector shape may be drawn (like the pen tool in Photoshop or Illustrator). There are two main uses for this node:

- To make a mask: In a situation where a node such as Multiply is being used to darken an image, a Roto shape may be used as a mask: to limit the effects of that node.
- To make an alpha channel: In a situation when the alpha of an image needs editing, a Roto shape may be used to add to, remove from or replace that alpha.

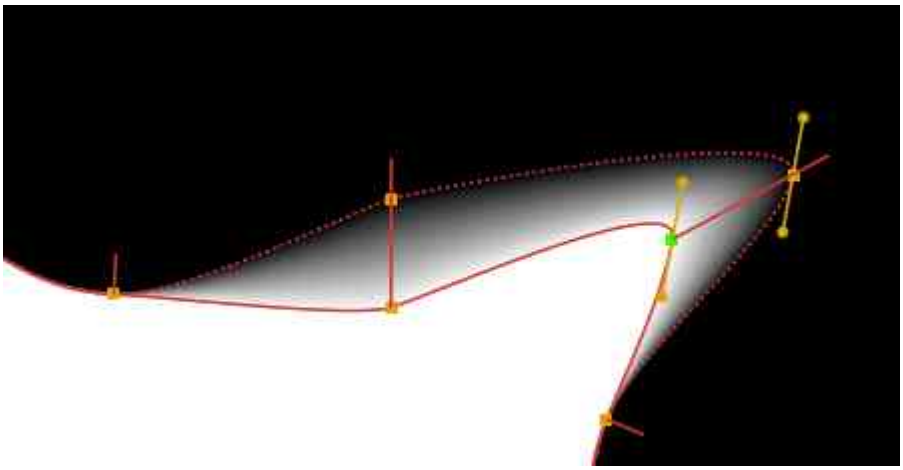
Added to this is a host of other functionality. It may, for example, be used to hide or revel one layer from another. This functionality can be used to hide glitches in an image using something called a ‘clean plate’.

Natron’s Roto node has many parameters parameters in the tabs. However, most day to day usage is covered effectively by the first two tabs.

### Usage

**Basic usage:**

- create the node with ‘o’ or ‘p’ shortcut
- start click+dragging in the viewer
- click on the firs point to close it
- If you want soft edges around your shape, pull the little red lines protruding from each control points. The dotted line that appear is the limit of the soft edgea
- That’s it you image now have your shape drawn (in the alpha channel by default)



To edit the shape you have tools in the viewer window:

**In the viewer the tools to create or edit shapes are:**

- 1: “Autokey” create a new key to your shape each time you move any part of it. If this is disabled click on the “+” (25) to create a key
- 2: “FeatherLink” lets you move a point on the shape and the feather point follows.
- 3: “display feather” can disable viewing/editing the feather points (dotted line)
- 4: sticky selection of vertices. Helps editing the shape with constant selection
- 5: sticky bounding box: Helps editing the shape with constant selection.
- 6: “Ripple Edit” let you change the shape on all keyframes in an offset manner
- 7-8: Add / Delete keyframe to the currently selected shape (similar to 25/26 in the properties
- 9: show transform. Let you move the whole shape without the need to edit each point of the shape. Good for rotoscoping “hard objects” wich shape doesn’t change much over time.
- 10: Select/transform “arrow” tools. Select it after the creation of the Curve
- 11: Add/remove points tool
- 12:create shape tool. Long click to get the choice between freeform, rectangle, ellipse shapes.
- 13: pencil tools

---

**Note:** The layers don’t have geometric properties. Their only purpose is to group paint dabs/masks to enable/disable these in s ingle click

---

See *The Rotopaint* section for more informations.

### 1.4.4 Merge Nodes Menu

These are the nodes located in the layered paper sheets icon of the toolbar.

#### Merge Node

The Merge node allows one to complete compositing operations, by default it places image data from A overtop B with an "over" operation.

#### Usage

Never consider RGB as being transparent by default - this is OK for unpremultiplied compositing (After Effects) but is invalid in a premultiplied compositor such as Natron or Nuke.

Users still have the option to ignore the alpha channel. (new from v2.4)

## 1.5 Tutorials

### 1.5.1 Writing documentation

This quick tutorial will guide you through the creation/modification of documentation for Natron and the plugins.

#### Natron Manual

#### Writing contributions

Contributing to the Natron documentation is rather easy. The source for the documentation is located in the *Documentation/source* folder.

The documentation is generated using Sphinx, and the source files are in reStructuredText format.

Most likely you will want to contribute to the *User Guide*. The source files for the guide are located in the directory named `Documentation/source/guide`. If you want to contribute to an already existing document just open the file in your favorite (plain) text-editor and do your modifications.

---

**Note:** The following files are generated automatically and can thus not be edited:

- The *_group.rst* file, and any file with a name starting with *_group*.
- The *_prefs.rst*.
- The documentation for each individual plugin, which can be found in the *Documentation/source/plugins* directory (see *Plugins Manual*).

---

If you prefer editing with LibreOffice (or even MSWord), just keep the document simple (use styles for section headers, don't try to format too much, etc.), and use pandoc to get a first working version in reStructuredText format: `pandoc your_document.docx -t rst -o output_doc.rst`

This reStructuredText file will probably require a few touch-ups afterwards, but it is usually a good starting point.

### Submitting contributions

To send your contributions, the best way is to follow the procedure below. However, if you wrote a nice piece of documentation, in any standard format, and have difficulties following that procedure, do not hesitate to ask for assistance on the Natron forum, or to file a GitHub issue, with your document attached to your message.

The standard procedure is the following:

- Fork https://github.com/NatronGitHub/Natron using your github account.
- On your fork, create a branch from the RB-2.4 branch (do not use the master branch), and give it a name like "documentation-keying" if you are going to write the keying doc (which we really need).
- To add your doc, you can either:
  - Clone the repository to your computer, edit and add files, commit your changes locally (the github desktop application is easy to use), and then push your changes,
  - Or edit the files directly on github. See tutorials-hsvtool.rst for en example (you will probably need to fork the repository first, see below, and browse to that file on your fork). Click on the pencil icon on the top right. You get an editable the text view and can get a preview by clicking on the preview tab on top.
- Then, submit a pull request to the RB-2.4 branch on the main repository from your branch (there is a button to submit a pull request when you view your fork on github). Give an accurate description of the pull request, and remember to follow the Contributor Covenant Code of Conduct, as with all contributions to Natron or the plugins. The Natron maintainers can either accept it as it is, or ask for a few modifications.

You can view the formatted documentation on your github repository, as explained above, but you can also preview your modifications by using pandoc to convert it to another format, or install Sphinx and recompile the whole documentation. On Linux and Mac you can install Sphinx through your package manager (using MacPorts type `sudo port install py27-sphinx py27-sphinx_rtd_theme`, on HomeBrew type `brew install sphinx-doc; /usr/local/opt/sphinx-doc/libexec/bin/pip3 install sphinx_rtd_theme`, on Linux type `pip install sphinx sphinx_rtd_theme`), on Windows refer to the Sphinx documentation.

When you have Sphinx installed go to the Documentation folder and launch the following command:

```
sphinx-build -b html source html
```

The Natron documentation has now been generated in the *Documentation/html* folder. Open *Documentation/html/index.html* in your web browser to review your changes.

When your are satisfied with your modifications do a pull request against the master repository on GitHub.

---

**Note:** If you want to preview your files interactively you can use dedicated file editors. RstPad for example is available on Mac and Windows

---

### Plugins Manual

The documentation for each plugin contains two parts:

- The main documentation, including the short description, and the documentation for individual parameters. This part of the documentation is available in the C++ source file of each plugin.
- An extra documentation, in the form of a Markdown file in the plugin bundle, named `Contents/Resources/pluginId.md` (in the same directory as the plugin icon files), where *pluginId* is the full plugin identifier (e.g. `net.sf.openfx.MergePlugin`). The extra documentation is inserted after the *Description* section and before the *Inputs* section of the generated documentation.

#### Main Plugin Documentation

Editing or adding the main documentation for the Natron plugins requires you to edit the C++ source file for each plugin. Usually the plugin(s) has a **kPluginDescription** define where you can edit the description found when hovering or clicking the **?** button of the plugin properties panel in Natron.

Let us say you want to edit the description in the Checkerboard plugin.

1. Fork the https://github.com/NatronGitHub/openfx-misc repository on GitHub.
2. Open the file *Checkerboard/Checkerboard.cpp* in your favorite (plain) text-editor

Navigate to the line **#define kPluginDescription**, where you can edit the description. Line breaks are added with *\n*.

You will also notice that each parameter has a hint define, for example the Checkerboard has **#define kParamBoxSizeHint**, **#define kParamColor0Hint** etc. These describe each parameter in the plugin and shows up when you hover the parameter in Natron, or access the HTML documentation online or through Natron.

To test your modifications, you must build the plugin(s) and load them in Natron, refer to each plugin bundle on GitHub on how to build the plugin(s). Click the **?** button of the plugin properties panel in Natron to check your modifications.

#### Markdown

The plugin description and parameters optionally supports Markdown format. This enables you to have more control over how the information is displayed.

Enabling Markdown on a plugin requires some modifications, as the plugin must tell the host (Natron) that it supports Markdown on the description and/or parameters. See the Shadertoy plugin for an example of how this works.

Basically you need to add **desc.setPluginDescription(kPluginDescriptionMarkdown, true);** in the **describe** function for each plugin. If you are not comfortable with this, contact the repository maintainer(s) and ask them to enable Markdown for you.

#### Submitting contributions

As with the *Natron Manual*, the standard way of submitting your contributions is by forking the relevant plugins repo on GitHub (openfx-misc, openfx-io, openfx-arena or openfx-gmic) and submitting a pull request to the *master* branch of that repo.

However, if you wrote a nice piece of documentation, in any standard format, and have difficulties following that procedure, do not hesitate to ask for assistance on the Natron forum, or to file a GitHub issue, with your document attached to your message.

### 1.5.2 How To Convert Videos To Image Sequences

Natron works best when using image sequences as input.

Video can be used (mp4, mov etc) as input but may face stability issues.

**Converting the video to a sequence of images is recommended.**

There are a number of solutions for converting the video to frames:

### FFmpeg

FFmpeg provides a convenient command-line solution for converting video to images.

1. Open a terminal and navigate to the folder containing the video.
2. Use this command to extract the video to a png image sequence:

```
ffmpeg -i input.mp4 -pix_fmt rgba output_%04d.png
```

Replace `input.mp4` with the name of your video and `output_` with the name your output image files.

`%04d` specifies the position of the characters representing a sequential number in each file name matched by the pattern. Using the above example the output files will be called `output_0001.png`, `output_0002.png`, `output_0002.png` and so on. For longer videos you will need to use a higher number (`%08d.png`).

Here are some more options:

PNG (with Alpha)

for 8 bit

```
ffmpeg -i input.mp4 -pix_fmt rgba output_%04d.png
```

for 16 bit

```
ffmpeg -i input.mp4 -pix_fmt rgba64be output_%04d.png
```

PNG (without Alpha)

for 8 bit

```
ffmpeg -i input.mp4 -pix_fmt rgb24 output_%04d.png
```

for 16 bit

```
ffmpeg -i input.mp4 -pix_fmt rgb48be output_%04d.png
```

To extract TIFF 16 bit image sequence:

TIFF (with Alpha)

for 8 bit

```
ffmpeg -i input.mp4 -compression_algo lzw -pix_fmt rgba output_%04d.tiff
```

for 16 bit

```
ffmpeg -i input.mp4 -compression_algo lzw -pix_fmt rgba64le output_%04d.tiff
```

TIFF (without Alpha)

for 8 bit

```
ffmpeg -i input.mp4 -compression_algo lzw -pix_fmt rgb24 output_%04d.tiff
```

for 16 bit

```
ffmpeg -i input.mp4 -compression_algo lzw -pix_fmt rgb48le output_%04d.tiff
```

---

**Note:** "-compression_algo packbits or raw or lzw or deflate" - is optional. Using it for 4k/+ is recommended. For 4k/+ deflate can be used. For HD lzw can be used to lower the file size.

---

---

**Note:** "-pix_fmt rgb24 or rgba" is a must to include convert the color space. YUV/YCRB is not ideal for many en/decoders for TIFF.

---

Although if YUV colorspace is necesary to intact it is possible to do the closest RGB conversion using `-sws_flags`. It will intact the chroma in full.

Example:

```
ffmpeg -i "input.MXF" -compression_level 10 -pred mixed -pix_fmt rgb24 -sws_flags
+accurate_rnd+full_chroma_int output_test%03d.png
```

```
ffmpeg -i "input.MXF" -compression_algo lzw -pix_fmt rgb24 -sws_flags
+accurate_rnd+full_chroma_int output_test%03d.tiff
```

For more information on support pix format and compression for TIFF in ffmpeg in the terminal type: `ffmpeg -v error -h encoder=tiff`

More information of FFmpeg's command line options https://ffmpeg.org/ffmpeg-formats.html

### Kdenlive/Shotcut

https://kdenlive.org/ https://shotcut.org/

With the video(s) on the timeline go to Project > Render. In the render settings choose Images sequence and select the desired image format.

The sequence will be output with the specified file name and format and using five digits for its numbered sequence (e.g. output_00001.png).

Full instructions on how to use Kdenlive can be found here https://userbase.kde.org/Kdenlive/Manual/Project_Menu/Render

### Blender

https://www.blender.org/

- Import the movie file in Blender Video Sequencer.
- Go to render properties.
- In Color management change view transform standard.
- Go to output properties.
- Select File format PNG/TIFF.
- Select RGB/RGBA, 8/16 Color depth, and preferred compression NONE/Any.

Full instructions on how to use the Blender VSE can be found here https://docs.blender.org/manual/en/latest/video_editing/index.html

### Adobe Media Encoder

- Open Media Encoder.
- Add source video to the queue.
- Set the output format to OpenEXR.
- Set compression to "Zip".
- If the source has an alpha channel be sure to scroll down to the bottom of the Video section of the Export Settings and check "Include Alpha Channel".
- Close the Export Settings by clicking Ok and press the Start Queue button.

#### DaVinci Resolve

- In Resolve, select your videoclip.
- Go to File => Media Management.
- Select Clips.
- Select Media Destination.
- Select Video format => TIFF or EXR.
- Click Start.

### 1.5.3 How To Convert Image Sequences To Video Files

#### FFmpeg

Converting your images to video follows a similar process to doing the reverse.

Open a terminal and navigate to the location containing the images. In the terminal type:

```
ffmpeg -i input_%05d.png output.mp4
```

Change `input_` to match the name of the files. The number of characters in the sequence (%05d) should match the amount in your input files. For example, if the files have four characters in their sequence (e.g. input_0001.png) then it should use %04d.

For this to work correctly all of the files need to be sequentially numbered and the sequence should start from either 0 or 1.

It is can also specify the framerate and the codec, here is an example for framerate 30fps:

```
ffmpeg -framerate 30 -i input%04d.png -c:v libx264 -r 30 -pix_fmt yuv420p out.mp4
```

### 1.5.4 Using NLE

#### Kdenlive, Shotcut, Da Vinci Resolve, Adobe Premiere

Import the image "as sequence" in the timeline (or drag'n'drop the folder) and render in your preferred video format.

### 1.5.5 Creating Digital Intermediate For Editing Servers

For Digital Intermediate, the *PRORES 4444* codec is a nice choice for MOV containers. It supports 12-bit with YUVA and retains alpha with 16-bit precision.

It can be done with ffmpeg or in kdenlive/Shotcut importing the TIFF/PNG as sequence.

#### FFmpeg

```
ffmpeg -framerate 30 -i input%03d.tiff -f mov -acodec pcm_s16le -vcodec prores_ks
-vprofile 4444 -vendor ap10 -pix_fmt yuva444p10le out.mov
```

### Shotcut/Kdenlive

- A render profile needs to be created first with below profile:
- `f=mov acodec=pcm_s16le vcodec=prores_ks vprofile=4444 vendor=ap10 pix_fmt=yuva444p10le qscale=%quality`
- Use TIFF/PNG image as sequence in the timeline.
- Then Render with this newly created prores 4444 profile.

A tutorial on PRORES in LINUX by CGVIRUS: https://youtu.be/oBiaBYthZSo

It can be done with Adobe Premiere/Avid/Fcpx/Resolve etc as well by importing TIFF/PNG as sequence and render as MOV prores 4444.

### DaVinci Resolve, Adobe Premiere etc

- Drag and drop the folder containing the image sequence to a timeline.
- Render the timeline in PRORES 4444.

### How to Render Image Sequences from Natron

The preferred file format to render out composited frames is TIFF.(image attached):

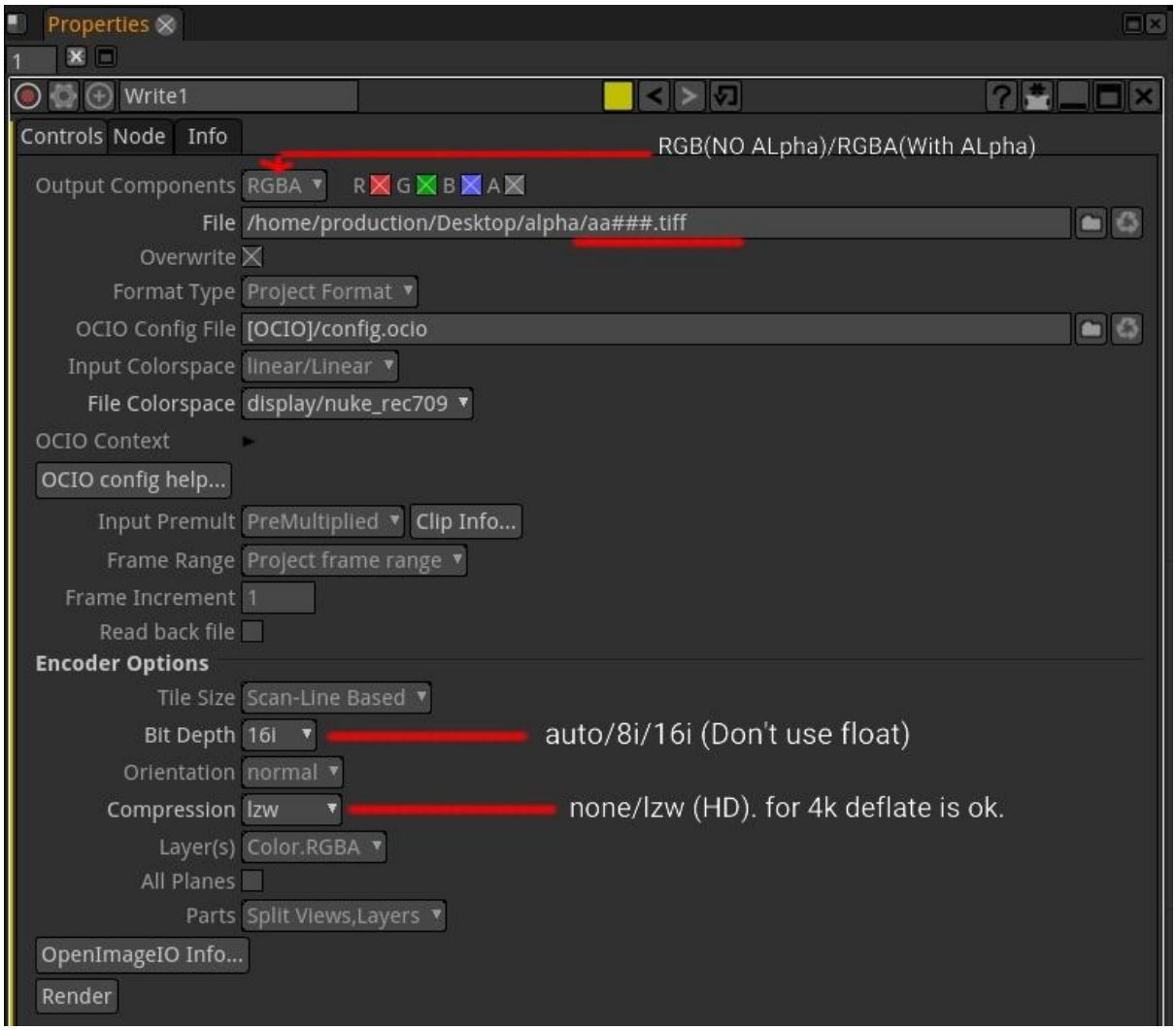
In the write node:

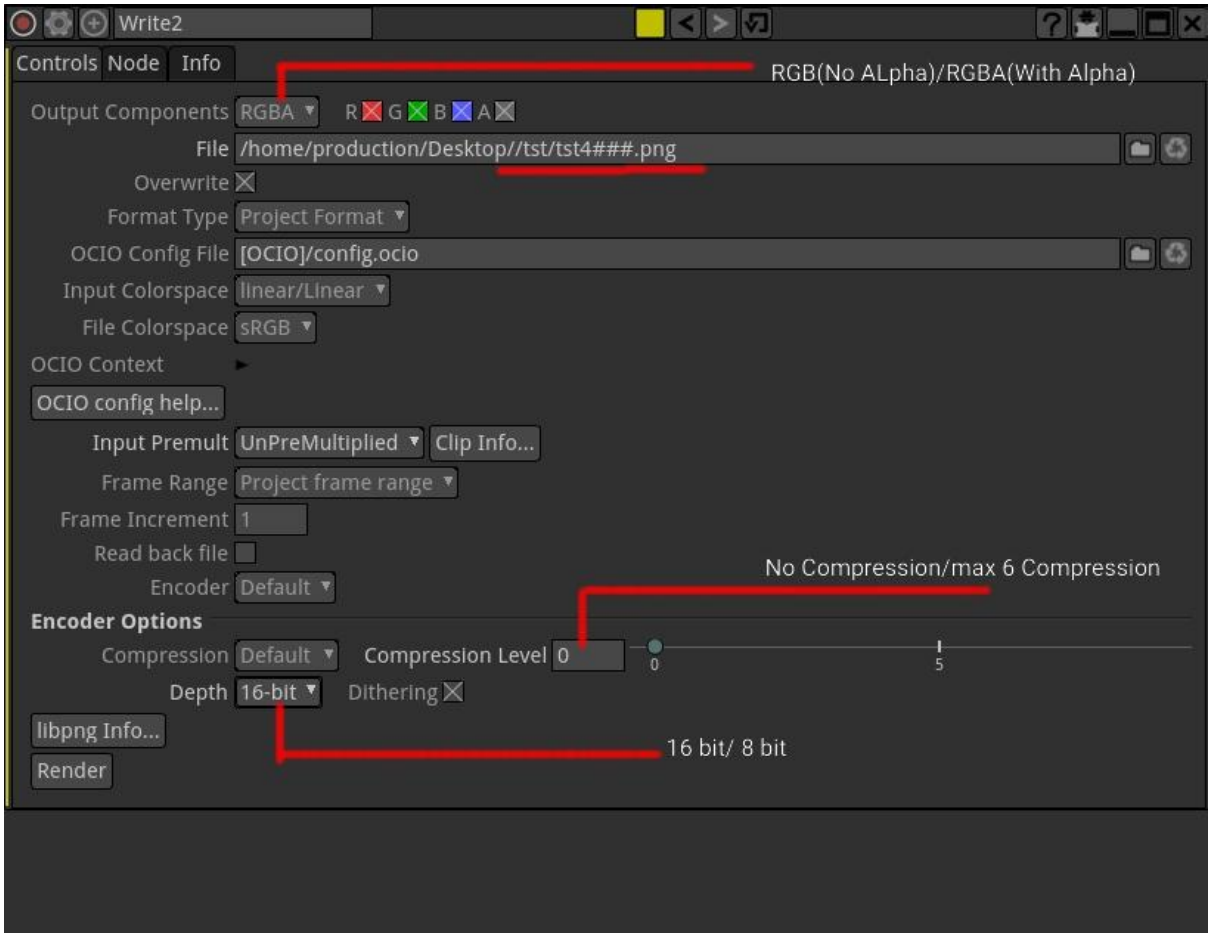
- output components can be RGB(no transparency) or RGBA(with transparency)
- Use filename_###.tiff (where # is the frame number and padding) ### will create yourfilename001.tiff and ## will create yourfilename01.tiff
- Bit depth can be auto/8i/16i (Don't use float)
- compression can be none/lzw (HD). for 4k deflate is ok.
- Use filename_###.tiff (where # is the frame number and padding)
- ### will create yourfilename001.tiff and ## will create yourfilename01.tiff
- Bit depth can be auto/8i/16i (Don't use float)
- compression can be none/lzw (HD). for 4k deflate is ok.

PNG is also a good format:

In the write node:

- output components can be RGB(no transparency) or RGBA(with transparency)
- Use filename###.png (where # is the frame number and padding)
- ### will create yourfilename001.png and ## will create yourfilename01.png
- Bit depth can be 8/16bit
- compression can be 0 for HD, 6 for 4k is fair enough.


Properties
Write1
Controls
Node
Info
RGB(NO ALpha)/RGBA(With ALpha)
Output Components
RGBA
R G B A
File
/home/production/Desktop/alpha/aa###.tiff
Overwrite
Format Type
Project Format
OCIO Config File
[OCIO]/config.ocio
Input Colorspace
linear/Linear
File Colorspace
display/nuke_rec709
OCIO Context
OCIO config help...
Input Premult
PreMultiplied
Clip Info...
Frame Range
Project frame range
Frame Increment
1
Read back file
Encoder Options
Tile Size
Scan-Line Based
Bit Depth
16i
auto/8i/16i (Don't use float)
Orientation
normal
Compression
lzw
none/lzw (HD). for 4k deflate is ok.
Layer(s)
Color.RGBA
All Planes
Parts
Split Views,Layers
OpenImageIO Info...
Render




### Open Questions for this document:

What format should I use for frames? (esp if the video is 10bit or 12bit) ?

Suggestion: For muxing audio. But it is usually pointless as it goes to NLE at the end.

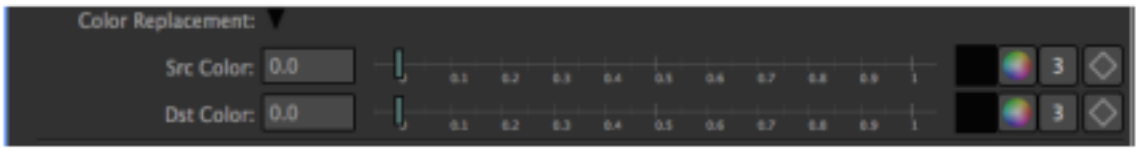
## 1.5.6 HSVTool

The *HSVTool* node converts the input color space to a HSV color space and converts the adjusted values back to the image input color space for further processing for the output. The *HSVTool* node is used to adjust the HSV channel components of an image the the Read node stream. It's basic operation are to adjust the Hue: which is the color of the input image, Saturation: which is the color range of the input image, and Brightness: which is the color value level and the grayscale of the input image.

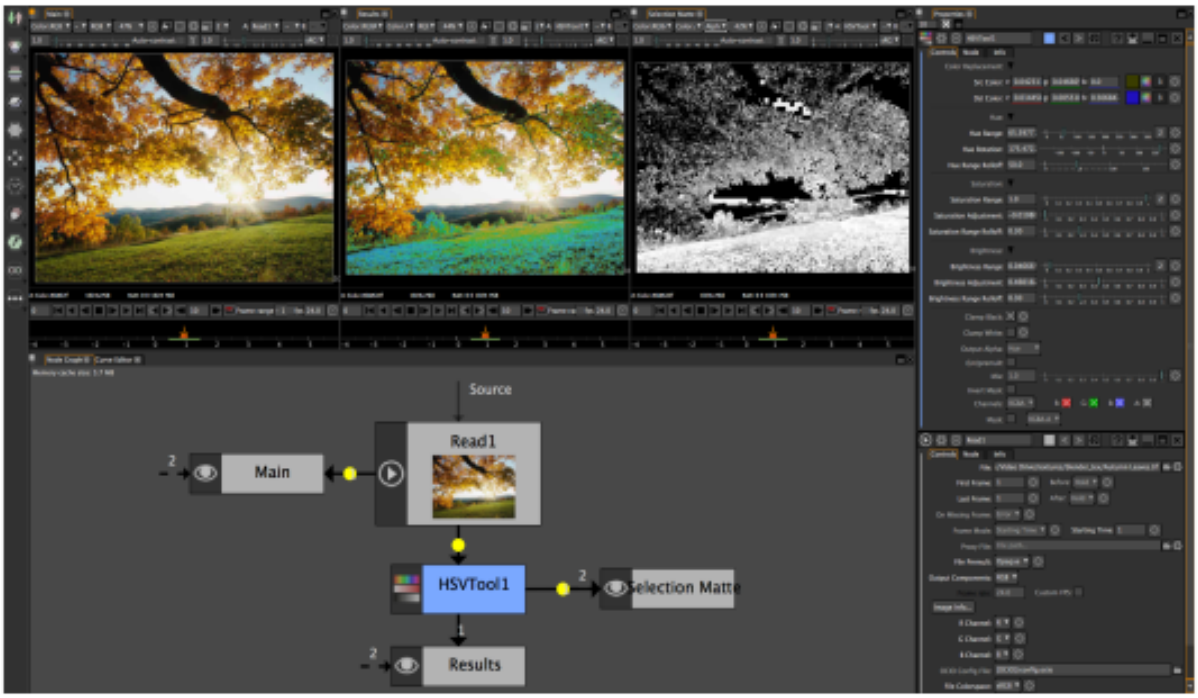
Each section has a rang controls that can be adjusted to limit the effects of a node by narrowing the input color ranges.

What are some standard work-flow using *HSVTool*?

1. You can do secondary color corrections or color replacements with the source/destination eyedropper tool.
2. You can use the *HSVTool* for linear/color keying.
3. You can do an overall color shift by using the rotation range adjuster in the Hue parameters etc.



The following screen captures are based on a single pixel selection without manual component modifications. You will see different alpha mattes display based on the alpha output components.




The image above is the result of a single color pixel selection using the blue destination replacement color.

### Brightness adjustment ranges

This is when you make adjustments to Hue, Saturation, and Brightness to limit the input color ranges for the desired effect. You can look at the third viewer on the right that has matte/alpha generated by the color selection key using the source color eyedropper. This is the alpha interpretation of the alpha output component which is the to Hue.

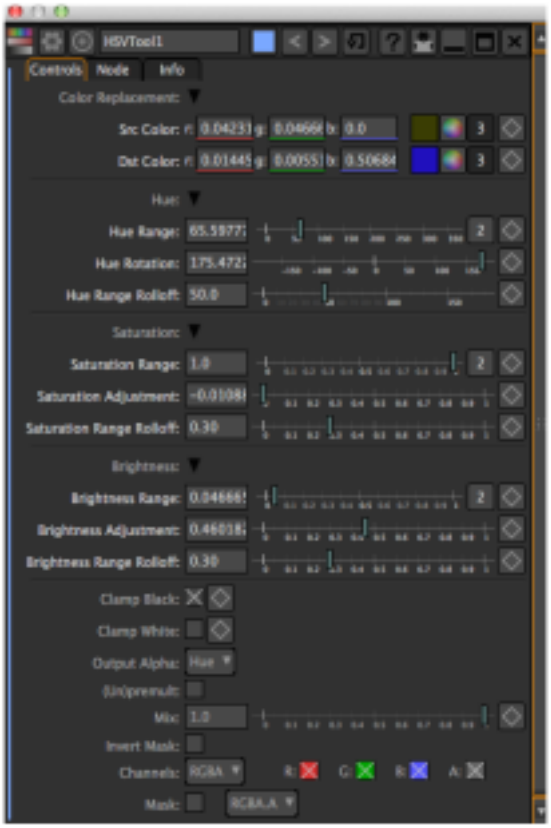
There are several alpha output component that the *HSVTool* uses to limit effects. The next images are the results of the output alpha mode from the *HSVTool*.

---

**Note:** Each of the matte generated displays are based from the colors that are spread across the image on a single pixel selection and it HSV values.

---

By using a low resolution and/or compressed image you will see the artifacts in the alpha channel. This makes it harder to do a replacement or secondary color correction. Is is evident that the blue channel has the most artifacts/noise, you can use the *CImgDenoise* or *CImgBlur* node and blur one or two pixels in the blue channel to soften the pixel edges. This technique will not always work, remember to apply dynamic range applications when using the *HSVTool*. You can only push the Saturation and Brightness so far. Also remember that *HSVTool* need color input in order to apply any color filtering even though it can output greyscale and matte data.


HSVTool1
Controls
Node
Info
Color Replacement:
Src Color:
Dst Color:
Hue:
Hue Range:
Hue Rotation:
Hue Range Rolloff:
Saturation:
Saturation Range:
Saturation Adjustment:
Saturation Range Rolloff:
Brightness:
Brightness Range:
Brightness Adjustment:
Brightness Range Rolloff:
Clamp Black:
Clamp White:
Output Alpha:
(Un)premult:
Mix:
Invert Mask:
Channels:
Mask:

Clamp Black:
Clamp White:
Output Alpha:
Hue
(Un)premult:
Mix:
Invert Mask:
Channels:
Mask:
Source
Hue
Saturation
Brightness
min(Hue,Saturation)
min(Hue,Brightness)
min(Saturation)
min(all)
B:
A:

Selection Matte
Auto-contrast:
fps 24.0

Selection Matte
Auto-contrast:
fps 24.0

min(Hue, Saturation)

min(Saturation)

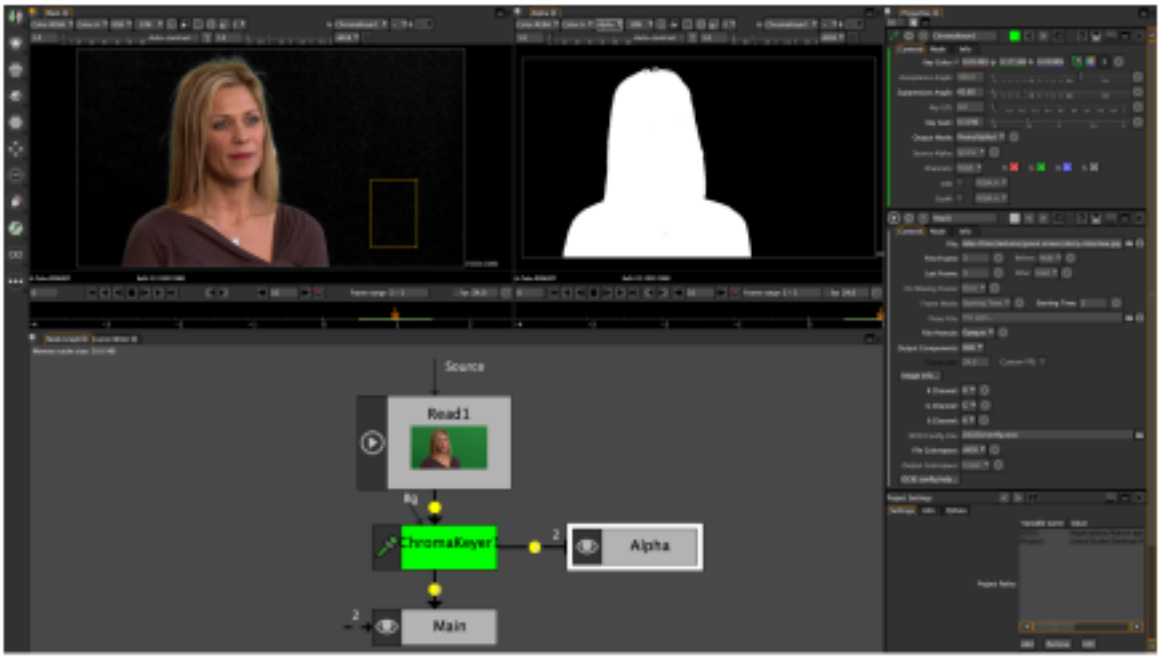
min(Hue, Brightness)

min(All)

### HSVTool Keyer

The *HSVTool* can be used as a color keyer. It uses the same principles as the *ChromaKeyer* and the *Keyer* nodes. What separates the *HSVTool* as a keyer is that the matte is inverted with it's selection.

When you need to pull a key with the *ChromaKeyer* the key color is outputted as black or represents a transparency. See node grap below for an example.




The image below is the *ChromaKeyer* parameters panel. You can see that the eyedropper has a chroma green selection from the input image. You may also notice the acceptance angle is very high, this is because the source material is compressed.

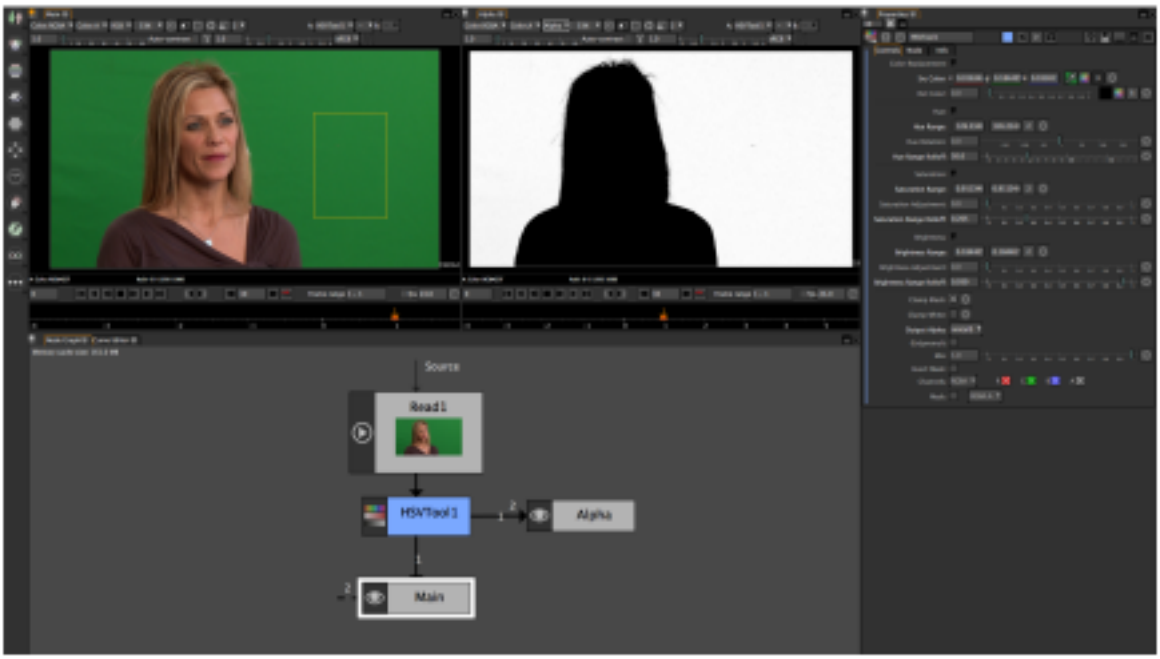
As you can see from the panel the chromakey subtracted the chroma green, replacing it with black/transparent. The "Key Lift" and "Key Gain" clamps the black/white to make a clean matte from the keyed selection.

Even if the chromakey generates transparency from the node, it still outputs a black and white matte that can be

used as an inverted mask or holdout matte to apply needed filter effects.

**Note:** A holdout matte is a section of your image that tells the keyer not to key the selected area. A holdout matte is commonly used to define a area within your image that might have similar colors to the color being keyed.

The node graph below is using the same green screen image when pulling a key with the *HSVTool*. The alpha output shows up as the white color. This *HSVTool* does not subtract the color to generate a matte, as oppose to the *ChromaKeyer* and *Keyer* nodes that subtracts the color to generate a matte. If you are concerned about color spaces, *ChromaKeyer* and *Keyer* process data in RGB color space and the *HSVTool* process in HSV color space.



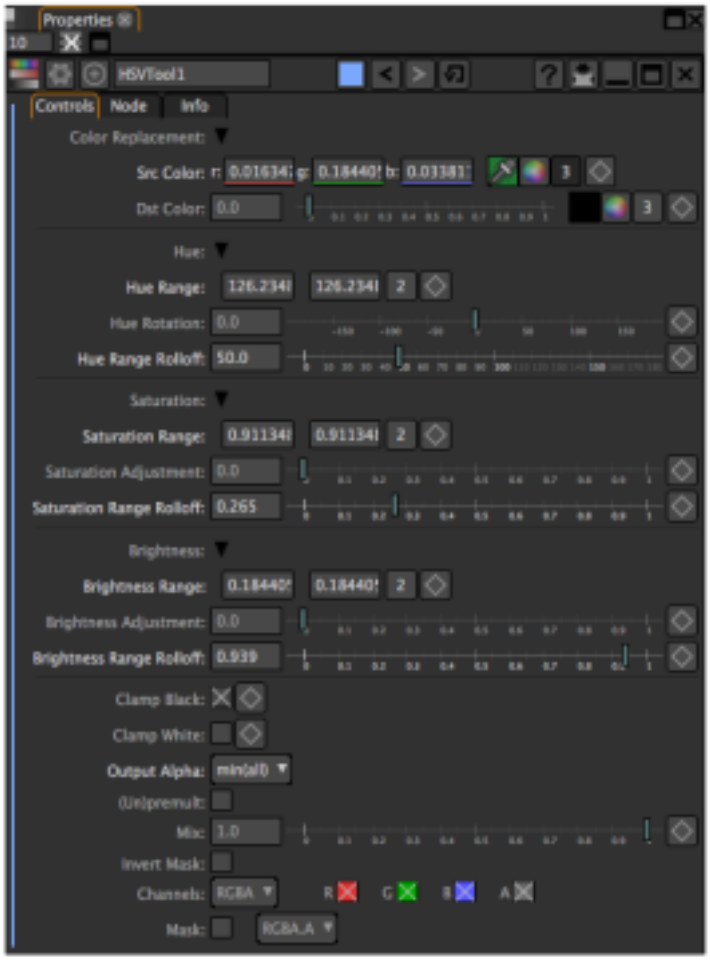

The image below is the *HSVTool* parameters panel. You can see that the source color eyedropper operator has a chroma green selected. As you look further down the panel you will notice the Hue, Saturation, and Brightness parameters which has all the values the make up the chroma green selection.

The important part to remember is that Hue, Saturation, and Brightness are used to generate and adjust the matte(s) based on the output alpha mode. The image output alpha is set to min(All), when selected, Hue, Saturation, and Brightness can be used to adjust the matte/mask output.

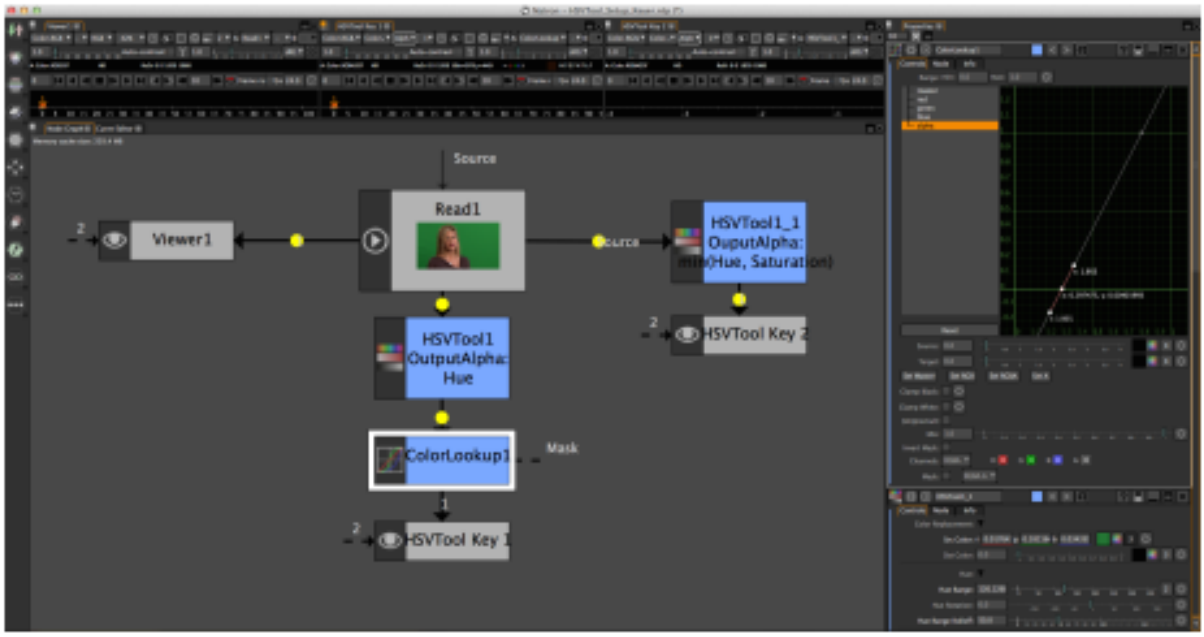
There are eight output alpha modes. The only mode that can't generate a matte is the "Source" mode. Even if there's no matte generated you can still do color replacements and color corrections.

The image above displays two *HSVTool* nodes that is keying the same input, but generating two different mattes based on the output alpha. The middle viewer is the Hue mode output. The viewer on the right is the min(Hue, Saturation) mode output. When you are working with compressed source images the output alpha modes will yield different results.

**Note:** If you need more control on the alpha/matte output, the *ColorLookup* node can help adjusting edges.


Properties
HSVTool1
Controls
Node
Info
Color Replacement:
Src Color:
Dst Color:
Hue:
Hue Range:
Hue Rotation:
Hue Range Rolloff:
Saturation:
Saturation Range:
Saturation Adjustment:
Saturation Range Rolloff:
Brightness:
Brightness Range:
Brightness Adjustment:
Brightness Range Rolloff:
Clamp Black:
Clamp White:
Output Alpha:
(Un)premult:
Mix:
Invert Mask:
Channels:
Mask:

Source
Read1
Viewer1
Source
HSVTool1_1
OuputAlpha:
HSVTool Key 2
HSVTool1
OutputAlpha:
Hue
HSVTool Key 1




### 1.5.7 FFmpeg

FFmpeg is a complete, cross-platform solution to record, convert and stream audio and video.

Get all information about it FFmpeg here: https://ffmpeg.org/ There you find also an indepth documentation.

#### Producing digital intermediates (empty)

#### Muxing Audio

Muxing audio is a process to add audio to a video without re-rendering the whole video again.

Muxing is less time consuming and keeps the video/audio quality of the original files.

#### Merging video and audio, with audio re-encoding

```
ffmpeg -i video.mp4 -i audio.wav -c:v copy -c:a aac output.mp4
```

We assume that the video file does not contain any audio stream yet and that the output format stays the same as the input format.

The above command transcodes the audio, since MP4s cannot carry PCM audio streams. You can use any other desired audio codec if you want. See the FFmpeg Wiki: AAC Encoding Guide for more info.

If your audio or video stream is longer, you can add the `-shortest` option so that ffmpeg will stop encoding once one file ends.

#### Copying the audio without re-encoding

If your output container can handle any codec (e.g. .mkv) then you can simply copy both audio and video streams:

```
ffmpeg -i video.mp4 -i audio.wav -c copy output.mkv
```

#### Replacing audio stream

If your input video already contains an audio stream and you want to replace it, you need to tell ffmpeg which audio stream to take:

```
ffmpeg -i video.mp4 -i audio.wav -c:v copy -c:a aac -map 0:v:0 -map 1:a:0 output.mp4
```

The -map option makes ffmpeg only use the first video stream from the first input and the first audio stream from the second input for the output file.

#### Combine 6 mono inputs into one 5.1 (6 channel) audio output

```
ffmpeg -i front_left.wav -i front_right.wav -i front_center.wav
-i lfe.wav -i back_left.wav -i back_right.wav \ -filter_complex
"[0:a][1:a][2:a][3:a][4:a][5:a]join=inputs=6:channel_layout=5.1[a]" -map "[a]" output.
wav
```

The join audio filter also allows you to manually choose the layout:

```
ffmpeg -i front_left.wav -i front_right.wav -i front_center.wav
-i lfe.wav -i back_left.wav -i back_right.wav \ -filter_complex
"[0:a][1:a][2:a][3:a][4:a][5:a]join=inputs=6:channel_layout=5.1:map=0.0-FL|1.0-FR|2.
0-FC|3.0-LFE|4.0-BL|5.0-BR[a]" -map "[a]" output.wav
```

#### Encoding HEVC (empty)

### 1.5.8 Using PanoTools projects within Natron

Those are preliminary notes on using PanoTools or Hugin projects from within Natron.

#### Creating a PanoTools (pto) project

#### Using the Hugin GUI

- download Hugin - on macOS this can be done using homebrew, by typing the command `brew cask install hugin` in a terminal.
- read the Hugin documentation or start with a Hugin tutorial
- make your panorama

### Using command-line tools

Full details on using command-line tools are given in the Panorama scripting in a nutshell documentation.

On macOS, if Hugin was installed using homebrew, the tools are available in various directories, and they can be added to the PATH using:

```
PATH="$PATH:/Applications/Hugin/tools_mac:/Applications/Hugin/Hugin.app/Contents/
↪MacOS:/Applications/Hugin/HuginStitchProject.app/Contents/MacOS"
```

Here is an example of running the panorama tools from a set of JPEG images (with suffix `.jpg`) placed in the current directory to generate e perspective panorama (other options are described in the documentation):

```
pto_gen -o project.pto *.JPG
cpfind --multirow -o project.pto project.pto

celeste_standalone -i project.pto -o project.pto
cpclean -v --output project.pto project.pto

autooptimiser -a -l -s -m -o project.pto project.pto

nona -m TIFF_m -o project project.pto

enblend --save-masks -o panorama.tif project*.tif
```

The result is:

- A `project.pto` file, which is the Hugin project itself
- The `project*.tif` images, which are images warped to the reference projection.
- The `mask-*.tif` images, which are masks generated by `enblend`.
- The `panorama.tif` image, which is the final panorama.

### Using Hugin/PanoTools parameters in Natron

The `pto` file syntax is described is the PTOptimizer and PTStitcher docs.

This file can be viewed and edited in any text editor.

### Project size

The project size, or format, should be set to the panorama size, which is given in pixels on the `p` line (at the start of the file).

### Distortion correction

The distortion correction parameters for the input images are given in the `i` lines (one for each image).

The values for the `a`, `b`, `c`, `d`, `e`, `g`, `t` parameters should be entered in a **LensDistortion** node, with *Model*/`model`=PanoTools and *Direction*/`direction`=Undistort, placed after the **Read** node for each input image or video. The script name for these values are `pt_a`, `pt_b`, `pt_c`, `pt_d`, `pt_e`, `pt_g`, `pt_t`.

Note that if all images share the same distortion parameters (this is written as `a=0 b=0 c=0 d=0 e=0 g=0 t=0` on the `i` line), the **LensDistortion** node can be cloned in Natron (right-click on node, *Edit*, *Clone Nodes*).

### Projection

The projection (which can be performed by the Nona tool) can be done using **Card3D** nodes placed after each **LensDistortion** node.

Each **Card3D** node must have its *Transform Order*/`cardXFormOrder` set to STR, and the *Rotation Order*/`cardRotOrder` should be left to the default value (ZXY). Be careful, these are neither the Axis nor the Cam Transform Order, which are in the two first groups of the **Card3D**node.

Set the *Output Format* to Project.

The `r` `p` and `y` values from the `i` line are roll, yaw, pitch angles. Their values should be put in the *Rotate* parameter of the **Card3D** (script name is `cardRotate`), using the following convention: `cardRotate.x = p`, `cardRotate.y = -y`, `cardRotate.z = -r`.

The `v` value from the `i` line corresponds to the horizontal field of view, and has to be converted to an aperture value. The **Lens-In H.Aperture**/`lensInHAperture` param should be set to `2*tan(v*pi/360)`. This expression can be directly typed in the value field, with `v` replaced by the actual value from the corresponding `i` line of the `pto` file.

Setup all the Card3D nodes for each input image that way.

### Camera

In Natron 2, the camera used by the **Card3D** node is set in the *Cam* group at the top of the parameters list.

In the **Card3D** node for the first image, unfold this group, and unfold the *Cam Projection* group.

The `v` value on the `p` line (usually at the top of the `pto` file) gives the horizontal field of view of the output panorama.

Set the *Focal Length*/`camfocal` to 1., and set the *Horiz. Aperture*/`camhaperture` to `2*tan(v*pi/360)`, replacing `v` with its actual value.

You can then copy these two parameters to all the **Card3D** nodes, or - even better - link these parameters, so that the output camera for the panorama can then be modified: Right-click on the parameter from the first **Card3D**, Copy Link, then right-click on the same parameter of every other **Card3D** node, Paste Link.

If you intend to modify the camera orientation later, you can also link the same way the *Rotate*/`camRotate` parameter (those for the camera, not the card).

Note that when the Natron **Card3D** node is used in Nuke (where it appears as **Card3DOFX**), the node has an external Cam input, to which a Camera node may be connected. There may be a similar concept in future versions of Natron.

### Building the panorama in Natron

### First sketch: overlap the images

Make sure that the *Output Components* parameter in all readers is set to RGBA, so that images have a transparent value outside of their domain.

Now, connect the outpput of the first *Card3D* to the B input of a **Merge** node, connect the secont to the A input, the third to the A2 input, etc…

The output of the **Merge** node should show a first panorama, obtained by overlapping all images.

### Drawing the masks

Add a **Roto** node after each **LensDistortion**, before each **Card3D**.

Only leave connected the A and B inputs to the **Merge** node to the two first **Card3D** nodes.

Check *Premultiply* in each Roto node, check that only the A channel is affected by **Roto** in its parameters, and start editing the roto mask on the second image, for which the **LensDistortion** output is connected to the A input of the **Merge**, while viewing the output of the **Merge**.

Set the compositing operator of each roto shape to "min" instead of "over", so that the original image alpha gets masked by the roto shape.

Do not forget to add feather, especially in the overlap area.

Then, reconnect the A2 input to the third **Card3D**, and start editing its roto mask, always in "min" compositing mode.

Do the same with A3, A4, etc… and you should end up with a full panorama.

### Future work

### Camera response

See Camera response curve and Vig_optimize.

The values `Ra` `Rb` `Rc` `Rd` `Re` on the `i` line encode a color response curve (EMoR). See `EMoRParams`in the hugin source code.

### Exposure and color

See Vignetting and Vig_optimize.

`Eev` encodes the exposure, see `ExposureValue` in the hugin source code.

`Er` and `Eb` encode the red and blue multipliers, see `WhiteBalanceRed` and `WhiteBalanceBlue` in the hugin source code.

### Vignetting

See Vignetting and Vig_optimize.

`Va` is always 1, see `VigCorrMode` in the hugin source code.

`Vb` `Vc` `Vd` encode the degree 2, 4 and 6 coefficients for vignette correction, see `RadialVigCorrCoeff` in the hugin source code.

`Vx` and `Vy` encode the vignetting center shift, see `RadialVigCorrCenterShift` in the hugin source code.

### Blending

- importing enblend masks, using them as roto masks
- executing enblend externally (using RunScript maybe?)

### 1.5.9 Vector graphics workflow

Software development is constantly growing. The film and multimedia industry are coming together as partners to provide a one stop shop by allowing applications to communicate via different file formats. One of the formats that have proven to be useful in both industries is the SVG (Scalable Vector Graphics) format. Its architecture algorithm is based on mathematical expressions. In simpler terms, in doesn't suffer image noise & artifacts like bitmap formats such as PNG, TIFF, JPG and etc.

Inkscape's SVG format uses multiple layers and paths, but most graphics applications can only parse this as a flat bitmap. There will come times when an artist may want to animate and/or modify those layers in a compositing program but can't due to limitation in the SVG importer. Natron however supports all layers and paths in the SVG file, this enables enhanced control over the vector graphics.

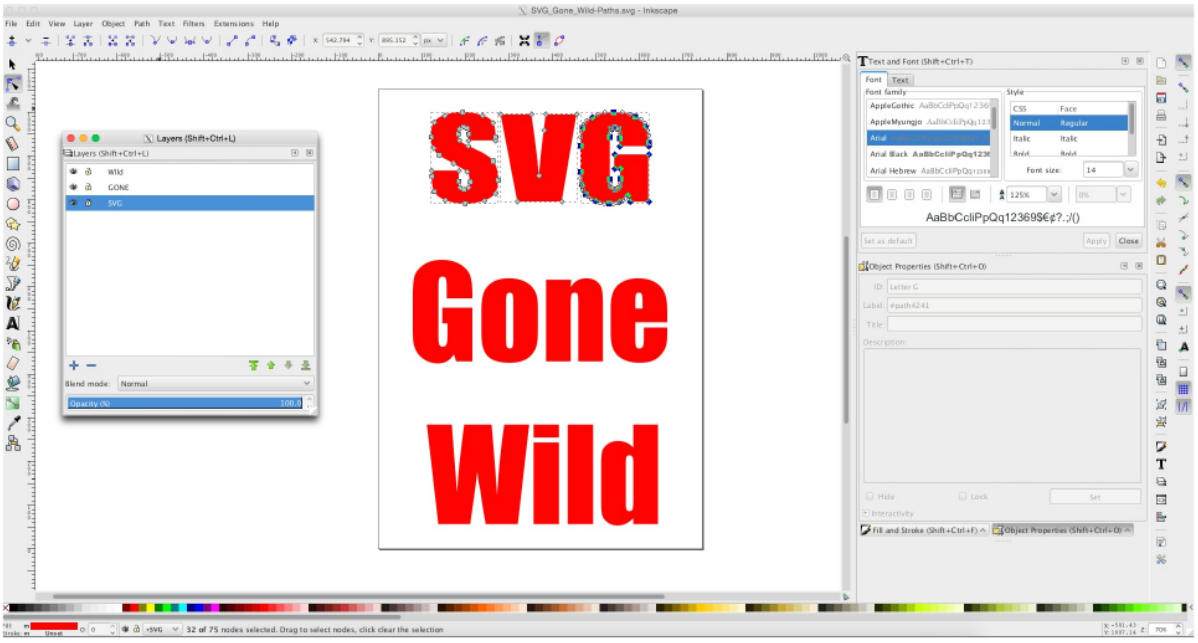
This tutorial will show you how to use vector graphics from Inkscape in Natron.

#### Inkscape

Inkscape has multiple ways to create vector graphics to be saved and imported into Natron. The default is to first create your document layout. This entails formatting the resolution for the project upon which your vector graphics will be displayed. Inkscape starts with one layer and you can draw and type your graphics on that layer or additional layers. You can then save the project to SVG file.

This image is SVG letters being converted to a group and layers for each word so that they may have their own layer/alpha channel in Natron.

The image below is the same vector letters being converted to paths and eventually ungrouping each of the vector letters so that they may have their own layer and alpha channel in Natron.




**Note:** Remember to make sure that you convert your objects to paths, it is highly advisable to name each path with its separate id name. It will make it much easier to find Color.RGB and alpha channel names in Natron after loading the SVG file in the node graph.

It is also possible and good practice to select objects/paths and create groups of them. This will allow easy animation work-flows without having to duplicate animated key-frames if needed. Those groups will also show up as Color.RGB and Alpha channels in Natron.

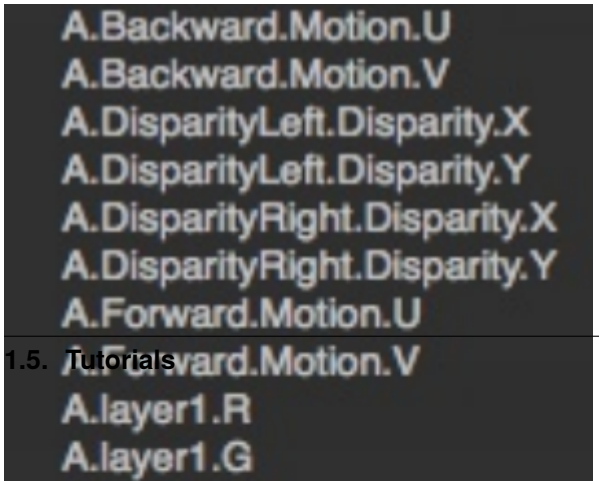
### Natron

The image below is Natron with the SVG file loaded. We have two viewers displaying the Color.RGB and alpha channels generated from the SVG file.

After you have loaded the file, you can check the Color.RGB/Alpha Channels headers to see how the layers, paths and groups are read. The ReadSVG node is multi-plane aware. The next few images are Natron screen captures of the headers, merge and shuffle nodes.

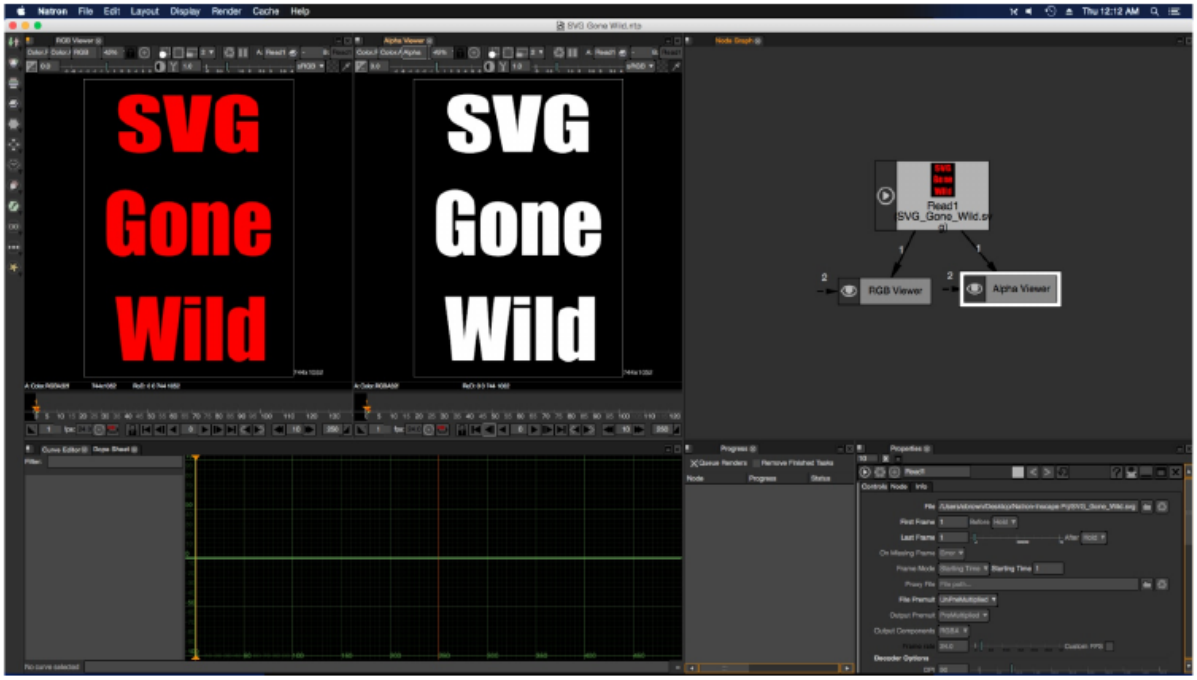
**Note:** To clarify the Merge: Paths Channels image. In the SVG image, I broke apart the vector characters and converted them to paths. Then each letter of the SVG was giving the name assigned to that letter. That information got saved as individual Color.RGB/Alpha channels.

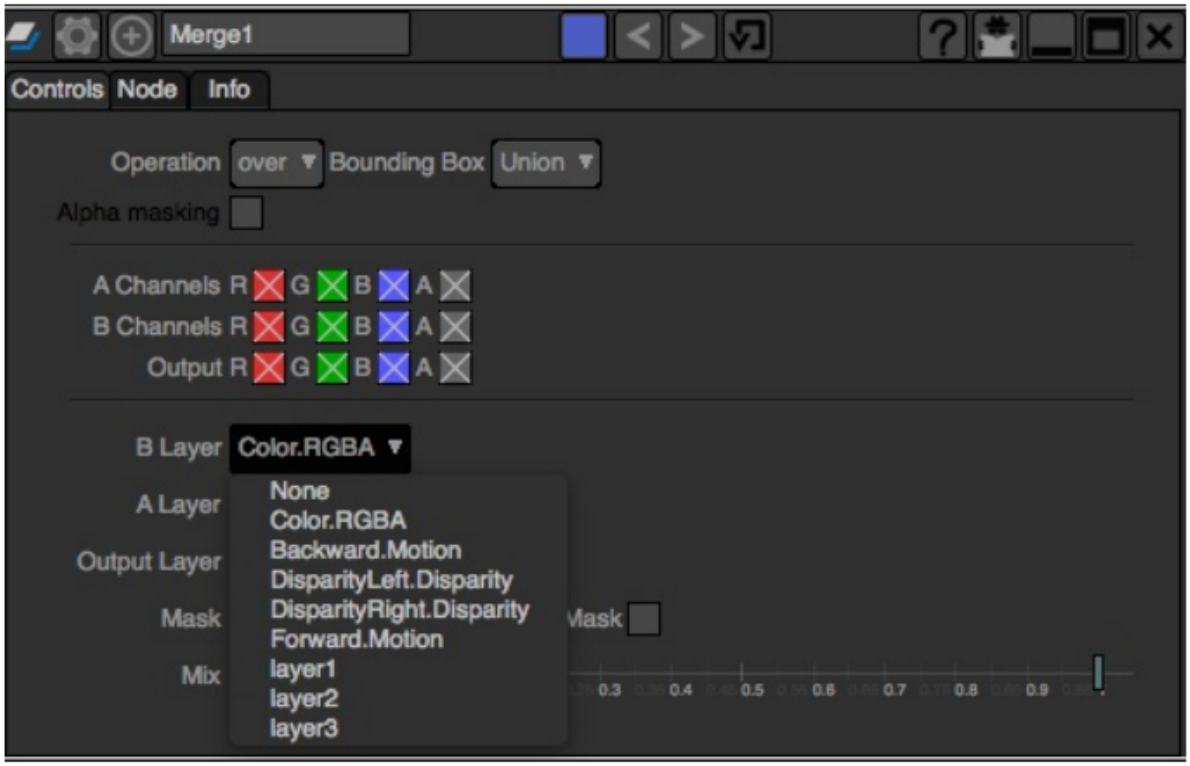
Be sure to look carefully at the Color.RGB and alpha headers in the images below. When your finished designing your vector document with layers/paths/groups, this is where the channels are displayed.

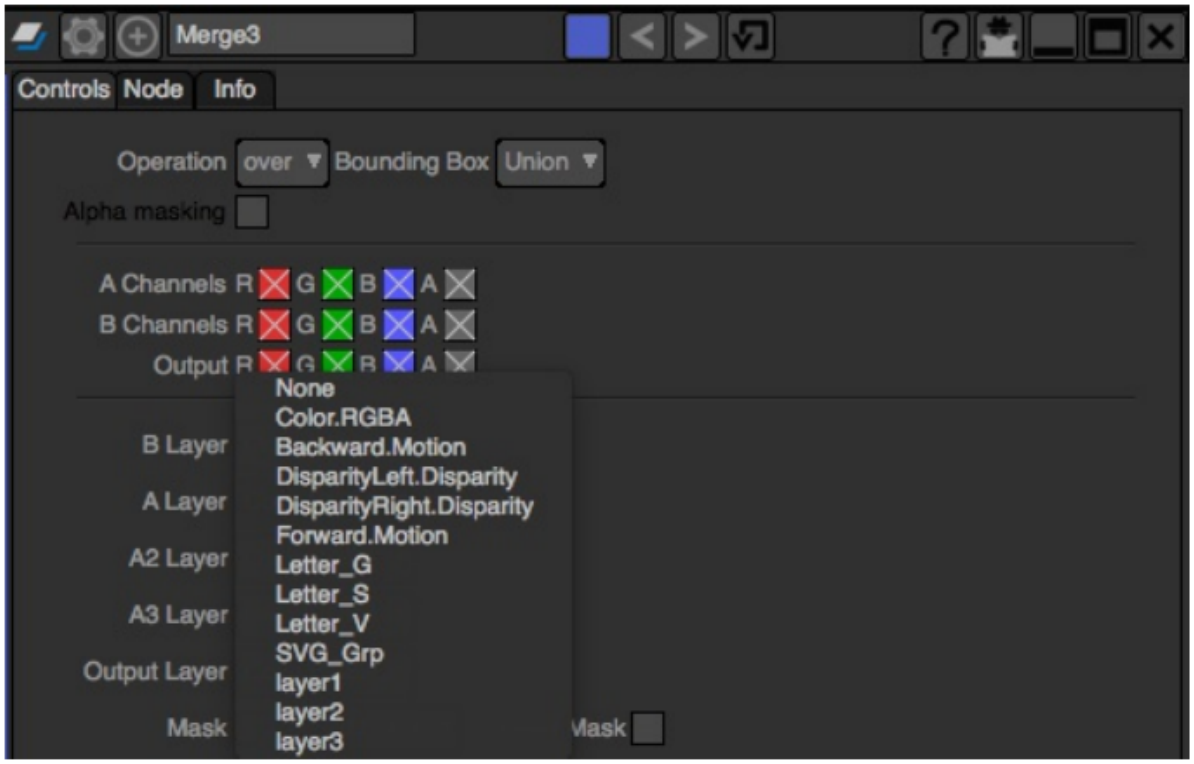



The Shuffle and Merge nodes are used to access multi-plane layers. Though they both can process the different SVG files objects, paths, layers, they work differently. As you can see in the image on the left the shuffle node display every channel(s) from a file and also copy channels from other files into the “A” input from the “B” input.

The merge node only perform mathematical blending operations on the inputs “B” and “A:A1000”. In order


SVG
Gone
Wild
SVG
Gone
Wild
Read1
RGB Viewer
Alpha Viewer


Merge1
Controls
Node
Info
Operation
over
Bounding Box
Union
Alpha masking
A Channels R G B A
B Channels R G B A
Output R G B A
B Layer
Color.RGBA
A Layer
Output Layer
Mask
Mix
None
Color.RGBA
Backward.Motion
DisparityLeft.Disparity
DisparityRight.Disparity
Forward.Motion
layer1
layer2
layer3
Mask
0.3
0.4
0.5
0.6
0.7
0.8
0.9


Merge3
Controls
Node
Info
Operation
over
Bounding Box
Union
Alpha masking
A Channels R G B A
B Channels R G B A
Output R G B A
None
Color.RGBA
Backward.Motion
DisparityLeft.Disparity
DisparityRight.Disparity
Forward.Motion
Letter_G
Letter_S
Letter_V
SVG_Grp
layer1
layer2
layer3
B Layer
A Layer
A2 Layer
A3 Layer
Output Layer
Mask
Mask

RGB Viewer
Alpha Viewer
SVG
Gone
Wild
744x1052

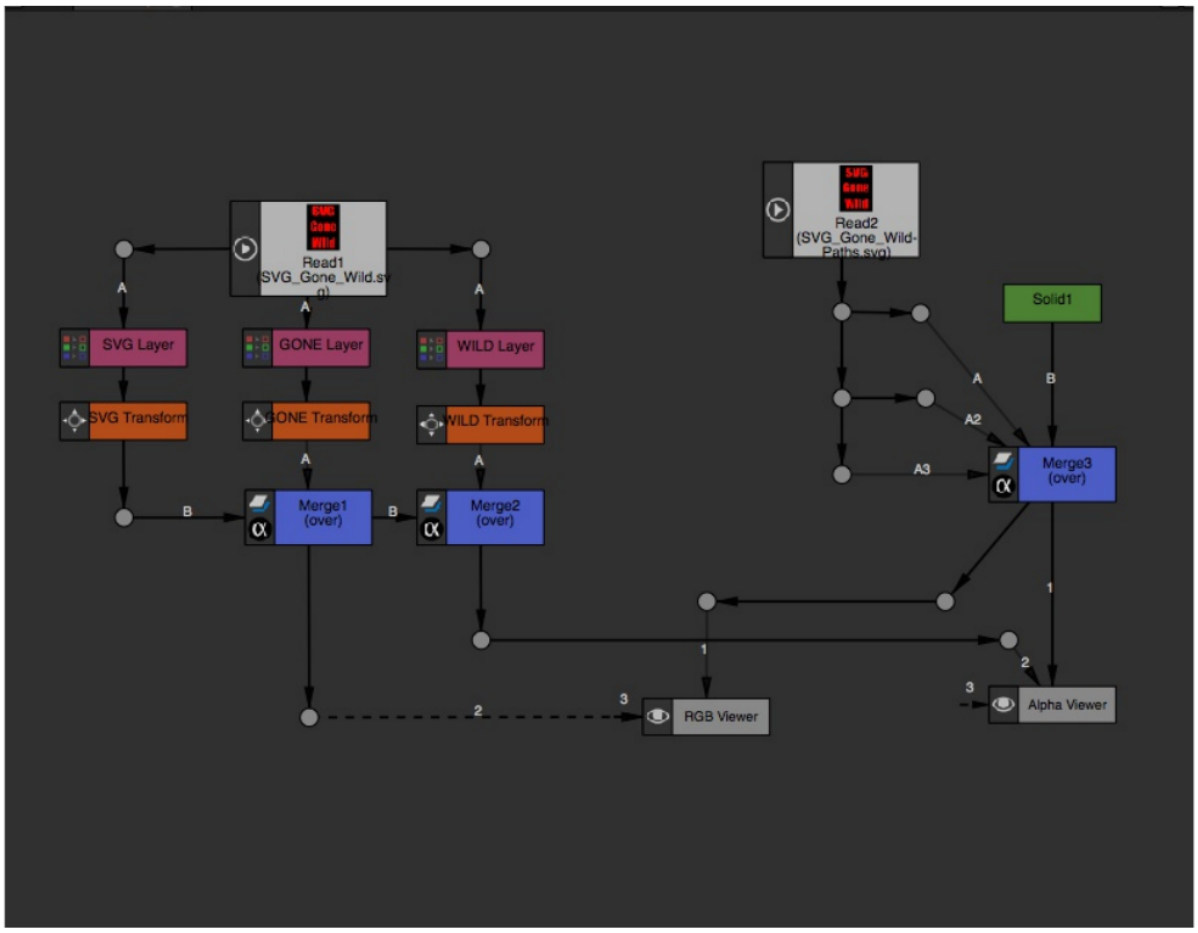
to access the alpha channels from the SVG file you must use the maskChannel mask inputs.

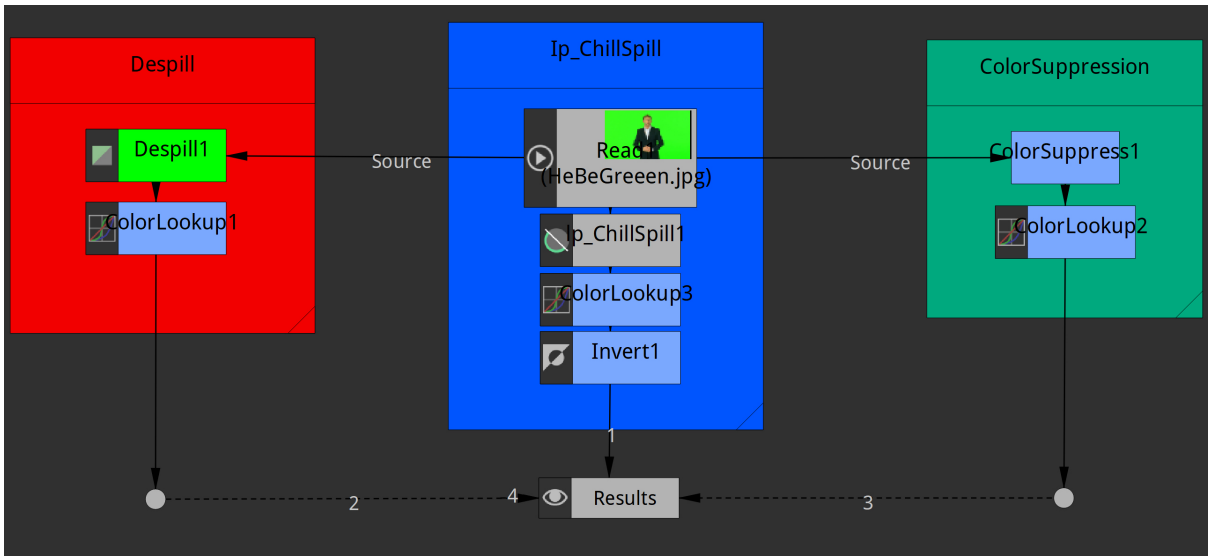
So plan your work before you start a project. Organization is key. Make sure that Layer(s), Object(s), Path(s) and Group(s) have logical naming conventions.

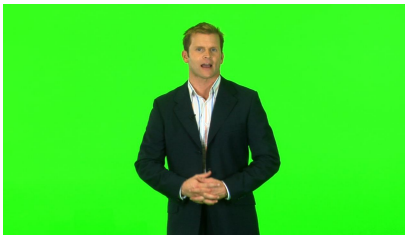
The node graph below shows how to extract individual layers using the shuffle node and the merge node. Both can extract the RGB layers and individual paths from an SVG file, but the Shuffle node allow you to pipe any of the layers or single channels to another node mask input.

### 1.5.10 Alternative Matte Extraction Tutorial

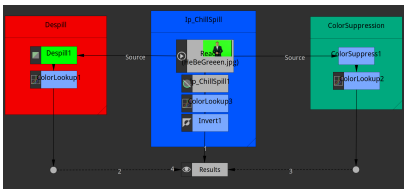
In the world of vfx in current films these days, it is hard to even phathom that **pulling keys (aka chromakeying)** or generally just creating mattes from images is not common place. Today I want to share some features in a few nodes that are in **Natron VFX Digital Compositor**. The nodes that I want to discuss are **Despill**, **Ip_ChillSpill** and **ColorSuppression**. You can guess by the name the functions that they perform. Basically, they **subtract any blue or green screen spillage that happens to contaminate your foreground objects during the production process**. These types of functions are common place in every post-production facilities in the industry. It doesn't matter if you are a beginner wanting to produce your own short films or a professional working on block buster films. The needs are the same. The attached image is a greenscreen image that I pulled off google to demonstrate what the Natron developers had implemented to take these despillers to another level or just added functionality.


Read1
(SVG_Gone_Wild.sv
g)
Read2
(SVG_Gone_Wild-
Paths.svg)
Solid1
SVG Layer
GONE Layer
WILD Layer
SVG Transform
GONE Transform
WILD Transform
Merge1
(over)
Merge2
(over)
Merge3
(over)
RGB Viewer
Alpha Viewer

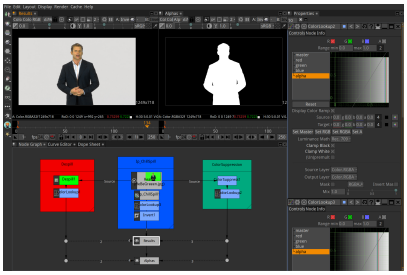

Despill
Despill1
ColorLookup1
Ip_ChillSpill
Read
(HeBeGreeen.jpg)
Ip_ChillSpill1
ColorLookup3
Invert1
ColorSuppression
ColorSuppress1
ColorLookup2
Source
Source
Results



The added functionality is having the ability to use the suppressed or despill color information and convert it to a matte or alpha. I am unaware if any other compositing applications has these abilities. Natron is my main compositing app and from time to time I use these **despilling node algorithms** to help generate masks, general mattes and scaled alphas. This is Natron's node graph pipeline for each node that I will be discussing. The pipeline for each node is really simple. You just connect the green/blue screen footage to the input of the nodes, adjust whatever you have to adjust, click on the very simple knob that says "Spillmap to Alpha" if you are using the Despill node, "Shuffle Spillmatte to Alpha" if you are using the community openfx plugin called **Ip_ChillSpill Node**, and **"Output: Image, Alpha & Image and Alpha"** if you are using the ColorSuppression node.



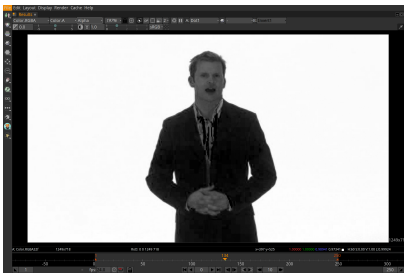

The first screenshot demonstration if for the node **Ip_ChillSpill**. This despilling node has the most of features and functions that I can tell that exist amongst all the despilling nodes. in the image below you will see the spill suppression on the left and the alpha channel from selecting **"Shuffle Spillmatte to Alpha"** on the right.

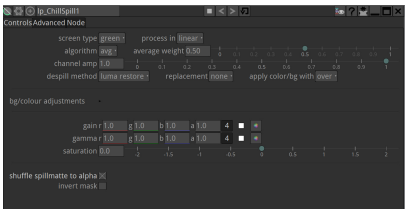


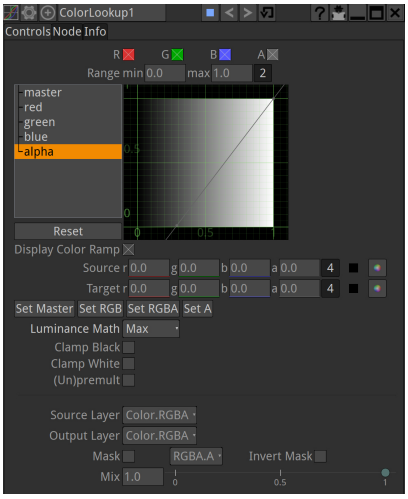
Now just selecting the **Shuffle Spillmatte to Alpha** feature is not some magic trick and you get a perfect matte, not by a long shot. For a matter a fact its not for any of them. Attached are example of the nodes in their default state before the scaling process begins. The first image is the **Ip_ChillSpill** default matte output and the second in the ColorSuppression default matte output. It looks like if I was trying to use the **HSVTool Node** to pull a **Saturation or Brightness Key**. You can read more about that in my HSVTool node tutorial. I used a very underated and under used node amongst beginners called the **ColorLookup Node**. You can be very familiar with the node if you have used Photoshop or Gimp's curve tool.

Here are the nodes and their settings to show what I had to do to get it to scale my suppression mattes. The key tool is to use the **ColorLookup Node** connected after the despilling nodes. The **ColorLookup Node** four color channels and the channel that you use the scale your mattes is the **"alpha curve channel"**. The bottom left of the **alpha curve is used the to crush your blacks/shadows** and the top right is used to **extend your white/highlights**. In the **ColorLookup Node** you will also see a feature called "Luminance Math". This feature will yield its full benefits based off the resolution and color spaces of your footage. The ColorLookup node is very powerful in a sense because the channel curves can have multiple points to limit its effects.

As you can see these nodes all perform the same functions but some has different parameters to accomplishes the same thing and well as providing other color processing effects. Here are some screen captures of the effects using the **ColorLookup Node**.

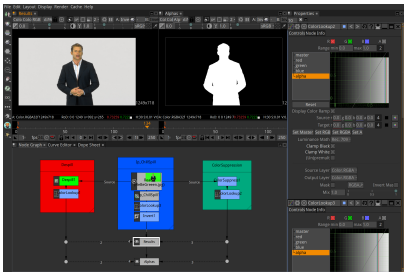


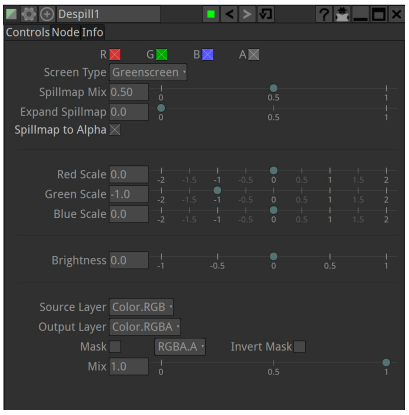

Ip_ChillSpill1
Controls Advanced Node
screen type green
process in linear
algorithm avg
average weight 0.50
channel amp 1.0
despill method luma restore
replacement none
apply color/bg with over
bg/colour adjustments
gain r 1.0 g 1.0 b 1.0 a 1.0 4
gamma r 1.0 g 1.0 b 1.0 a 1.0 4
saturation 0.0
shuffle spillmatte to alpha
invert mask

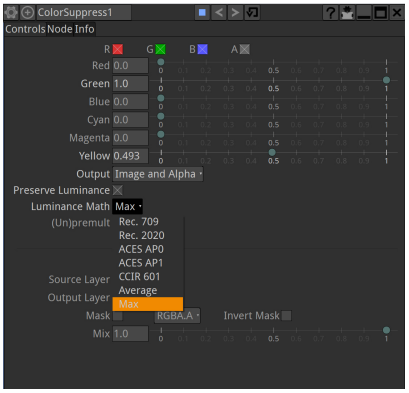

ColorLookup1
Controls Node Info
R G B A
Range min 0.0 max 1.0 2
master
red
green
blue
alpha
Reset
Display Color Ramp
Source r 0.0 g 0.0 b 0.0 a 0.0 4
Target r 0.0 g 0.0 b 0.0 a 0.0 4
Set Master Set RGB Set RGBA Set A
Luminance Math Max
Clamp Black
Clamp White
(Un)premult
Source Layer Color.RGBA
Output Layer Color.RGBA
Mask RGBA.A Invert Mask
Mix 1.0

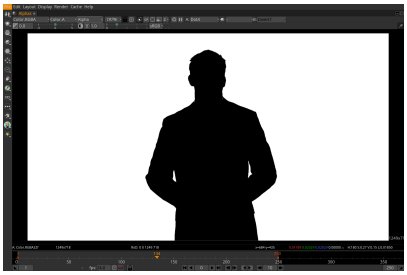
**Now this by node means a primary replacement for powerful keying node in Natron. The extended functionality should only be considered as compliment to Chromakeyer, PIK/PIK Color and Keyer nodes**. Just remember that the Here are some screen captures of the effects using the **ColorLookup node is needed to scaled that matte**. Also this process doesn't treat your edges with a choking or eroding effect. You would have to experiment with some of the filters to process them. Now you can try and cheat by using the **Shuffle Node** to convert to this matte output to an real alpha channel and maybe you can process your edges directly as if you were coming out of a keyer. You will need to do some serious testing. After you have done that, please feel free to talk about it and join NatronNation and read my blog.

### Despill and Color Suppression Pipeline







### 1.5.11 Evaluating Script Structure

Natron is a very 'adult' application that lets you handle your material in any way that you wish. It will not give you a warning beep or forbid you from doing anything. For this reason it is very easy to accidentally do things in the 'wrong' way. This is a short (non comprehensive) list of common 'bad practice' items. Of course, sometimes these 'rules' may be broken, but only as an exception.

#### File Do's and Dont's

Folders and files should be well managed: consistently and rationally named.

**Always set the format and FPS in settings before you start**

The format once set (see *Project setup*) , will determine all default formats after that. This is very important as a wrongly set format can cause the format of all default nodes to be set to something other than the format that you are working in. This can be infuriating and make script maintains very difficult.

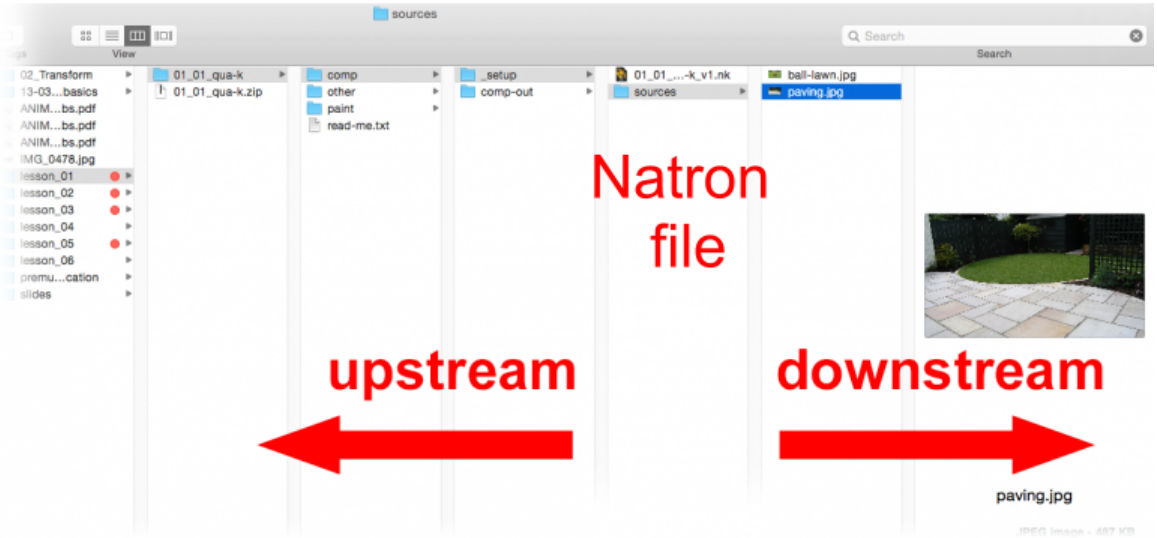
#### Manage folders and files

**Dont use absolute file paths**

An absolute path is one that specifies the location of the file with respect to the computer e.g. `My_Computer/school/lesson_one/asset.jpg`. A relative path is one that defines the location relative to a file or a folder.

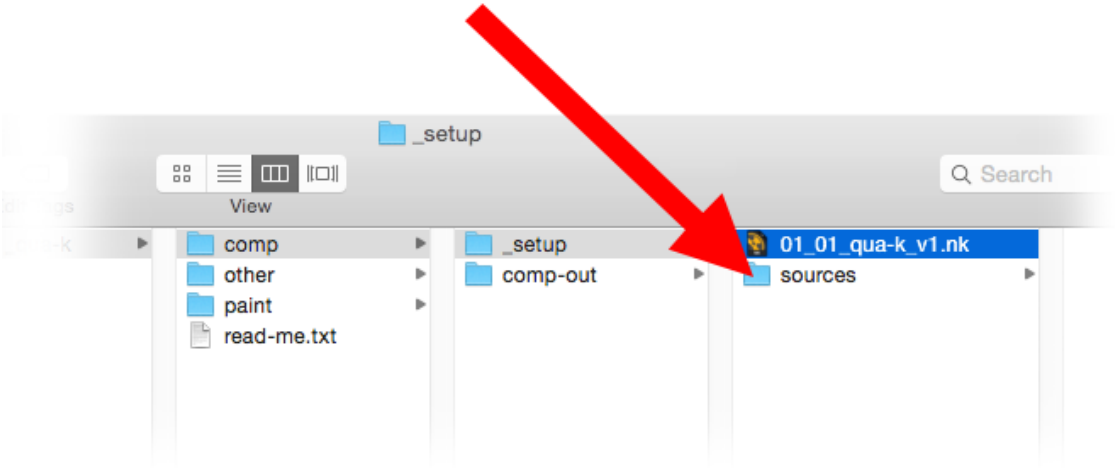
An absolute path 'breaks' when the project folder is moved to a new computer, and each filepath will then have to be manually repaired. A relative path, on the other hand, is far more durable.

There are two flavours of relative paths: those that look 'downstream' (i.e. into the same folder in which the Natron file is located, or other folders within it) or 'upstream' (i.e. in the parent folders of the folders in which the Natron file is located).



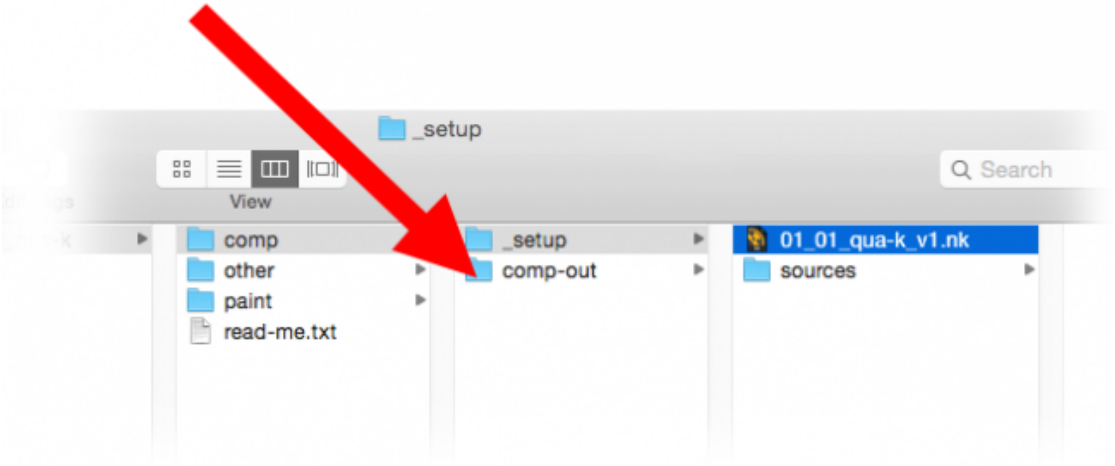
For downstream, the following relative filepath is recommend. This writes or reads into a folder called 'sources', which is located in the same folder as the Natron file. The image below illustrates this relationship:

```
[file dirname [value root.name]]/sources/Asset_Name.jpg
```




For upstream, the following relative filepath is recommend. This writes or reads into a folder called 'comp-out', which is located 'upstream' to the Natron file. The image below illustrates this relationship. To go further upstream, the value end-n needs to be increased.

```
[join [lrange [split [file dirname [knob root.name]] "/"] 0 end-1] "/"]/comp-out/
01_01_qua_v1.jpg
```



#### Read node movies should be formatted as image sequences

Movies rendered as QuickTime files can sometimes be difficult to perform time edits upon. It is highly recommended that movies read into Natron should be rendered first as image sequences (see *How To Convert Videos To Image Sequences*).

#### Script Housekeeping Do's and Dont's

Comb your hair and clean your shoes.

**Consider masking stills in Gimp or Krita.**

A Natron roto is not always a good way to mask a still image. Consider masking in Gimp/Krita instead: for complex shapes they are quicker to make and better. Save the result as tiff or png.

**Avoid side masking a merge node**

Side masks are for things like color corrections, filters etc. They are not to be used to determine transparency in a Merge node. If the same shape that you were recklessly going to use as a layer mask can be added to the Merge feeds as a Matte value.

**Observe the primacy of the B feed**

A script can be bothersome to manage if B feed primacy is not observed.

**Avoid feeding more than two inputs into a merge node**

Though the Merge node will accept many inputs, it does not do so in a way that is consistent and predictable. Consider instead stacking a whole bunch of merge nodes on top of each other.

**Avoid using too many points when you roto**

Too many points in a roto can be difficult to edit and hell to animate. Use as few as you can.

**Avoid recycling masks**

Two or more sequential nodes masked by the same channel can sometimes cause problems. Better instead to use a KeyMix.

### 1.5.12 Color Grading Do's and Dont's

Some general rules to follow in color grading:

**Use HSL 'color thinking' space**

Color is a volume, with a single color value being a point in that volume. Describing a point within a volume requires at least three coordinates (e.g. x, y and z). Such a three point system is referred to as a color space. In digital imaging the color space most commonly used is red, green and blue (RGB). This may be referred to as our 'working' space. However, when artists are thinking about color they traditionally refer to hue, saturation and lightness (HSL) color space. This is more perceptually agreeable that RGB… artists find it far easier to make aesthetic judgments in this space.

| | |
|---|---|
| HUE | This can be understood as the 'name space' of the color (i.e. whether it is a blue, green, pink etc). |
| Saturation | This refers to the intensity (or purity) of the color. Hence black, white and grey all have zero saturation value. Hue and saturation together make up the chroma component of the color. |
| Lightness | The lightness values of an image is what we are left looking at if we pull the saturation of an image down to zero. To see the lightness values of an image, hover the cursor over the viewer and press the 'Y' key. |

Both lightness and saturation are expressed in terms of intensity. They are bound by terminal extremes (maximum and minimum). They are also related: zero or maximum lightness (i.e. Black and white) both result in zero saturation. Hue is traditionally expressed as values arranged around a wheel (i.e. A color wheel).

When color grading, it is usual to first address lightness, followed by hue, then saturation. Sometimes an adjustment to one will result in a slight perpetual change to another.

**Respect the difference between R, G and B**

As already stated, the working space of digital color grading is RGB. These channel are not identical in what they express:

| | |
|---|---|
| Red | This is where details live. Look at the red channel, and see how even-form it is and how well it contains all the fine features of the image. |
| Green | Green is where the lightness values of the image live. Look at the green channel and see how closely it matches the lightness values of the image. When making a hue adjustment, it is customary to leave the green channel alone, as any adjustment to it could effect the lightness of the image. |
| Blue | Blue is where the large masses of the image lives. It also has the reputation of being the naughty channel, being much inclined to noisiness. |

**Color grade in order**

Color grading may be divided into three stages, delivered in the following order:

1. Color correction
2. Color matching
3. Color stylization

**Splitting up compound color edits**

Complex color edits are best split up into small components. For example, don't try to adjust the lightness and the hue in one operation. Splitting up such compound adjustments into smaller chunks makes them easier to edit and troubleshoot.

**Consider using simple color tools before using complex ones**

Fancy nodes with lots of sliders might look fun to play with but are they necessary? You will find that for a lot of color correction work simple nodes like Multiply or Saturation is enough. These require less processing, but also make the script easier to read.

**Dont leave 'fiddle' values in the parameters**

When reading someone else's script, it can be very annoying to open something like a ColorCorrect to discover that a multiply has been set to .0003 (or some other random, completely ineffectual value). If you intend to change a value then do so. If not, then leave it at its default value.

### Merging and Premultiplication Do's and Dont's

The following rules apply to any merging operation:

**Don't color correct premultiplied images**

Color correction should not be done on images that are premultiplied. To un-premultiply you may use an Unpremult node, or use the (un)premult option within the node.

**Don't composite pre-multiplied images**

Don't composite a FG that is not pre-multiplied

**Don't Double pre-multiplication**

Do not apply premultiplication twice in a row to the same image. It can damage the edges of the alpha.

**Dont use the composite image that comes out of a keyer**

Most high end keyers output a composite image (the foreground over the background). generally, this should not be used, as no color corrections can be done to the foreground. Better instead to use the keyer's alpha channel ina merging operation further down the node tree.

CHAPTER

TWO

# REFERENCE GUIDE

The first section in this manual describes the various options available from the Natron preference settings. The next section gives the documentation for the various environment variables that may be used to control Natron's behavior. It is followed by one section for each node group in Natron. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

## 2.1 Preferences

### 2.1.1 General

**Always check for updates on start-up**

When checked, Natron will check for new updates on start-up of the application.

**Auto-save trigger delay**

The number of seconds after an event that Natron should wait before auto-saving. Note that if a render is in progress, Natron will wait until it is done to actually auto-save.

**Enable Auto-save for unsaved projects**

When activated Natron will auto-save projects that have never been saved and will prompt you on startup if an auto-save of that unsaved project was found. Disabling this will no longer save un-saved project.

**Save versions**

Number of versions created (for backup) when saving newer versions of a file.

This option keeps saved versions of your file in the same directory, adding $.1$, $.2$, etc., with the number increasing to the number of versions you specify.

Older files will be named with a higher number. E.g. with the default setting of 2, you will have three versions of your file: *.ntp (last saved), *.ntp.$_1$ (second last saved), *.$_2$ (third last saved).

**Appear to plug-ins as**

Natron will appear with the name of the selected application to the OpenFX plug-ins. Changing it to the name of another application can help loading plugins which restrict their usage to specific OpenFX host(s). If a Host is not listed here, use the "Custom" entry to enter a custom host name. Changing this requires a restart of the application and requires clearing the OpenFX plugins cache from the Cache menu.

### 2.1.2 Threading

**Number of render threads (0="guess")**

Controls how many threads Natron should use to render.

-1: Disable multithreading totally (useful for debugging)

0: Guess the thread count from the number of cores and the available memory (min(num_cores,memory/3.5Gb)).

**Number of parallel renders (0="guess")**

Controls the number of parallel frame that will be rendered at the same time by the renderer. A value of 0 indicate that Natron should automatically determine the best number of parallel renders to launch given your CPU activity. Setting a value different than 0 should be done only if you know what you're doing and can lead in some situations to worse performances. Overall to get the best performances you should have your CPU at 100% activity without idle times.

**Effects use the thread-pool**

When checked, all effects will use a global thread-pool to do their processing instead of launching their own threads. This suppresses the overhead created by the operating system creating new threads on demand for each rendering of a special effect. As a result of this, the rendering might be faster on systems with a lot of cores (>= 8).

WARNING: This is known not to work when using The Foundry's Furnace plug-ins (and potentially some other plug-ins that the dev team hasn't not tested against it). When using these plug-ins, make sure to uncheck this option first otherwise it will crash Natron.

**Max threads usable per effect (0="guess")**

Controls how many threads a specific effect can use at most to do its processing. A high value will allow 1 effect to spawn lots of thread and might not be efficient because the time spent to launch all the threads might exceed the time spent actually processing. By default (0) the renderer applies an heuristic to determine what's the best number of threads for an effect.

**Render in a separate process**

If true, Natron will render frames to disk in a separate process so that if the main application crashes, the render goes on.

**Append new renders to queue**

When checked, renders will be queued in the Progress Panel and will start only when all other prior tasks are done.

### 2.1.3 Rendering

**Convert NaN values**

When activated, any pixel that is a Not-a-Number will be converted to 1 to avoid potential crashes from downstream nodes. These values can be produced by faulty plug-ins when they use wrong arithmetic such as division by zero. Disabling this option will keep the NaN(s) in the buffers: this may lead to an undefined behavior.

**Copy input image before rendering any plug-in**

If checked, when before rendering any node, Natron will copy the input image to a local temporary image. This is to work-around some plug-ins that write to the source image, thus modifying the output of the node upstream in the cache. This is a known bug of an old version of RevisionFX REMap for instance. By default, this parameter should be leaved unchecked, as this will require an extra image allocation and copy before rendering any plug-in.

**RGB components support**

When checked Natron is able to process images with only RGB components (support for images with RGBA and Alpha components is always enabled). Un-checking this option may prevent plugins that do not well support RGB components from crashing Natron. Changing this option requires a restart of the application.

**Transforms concatenation support**

When checked Natron is able to concatenate transform effects when they are chained in the compositing tree. This yields better results and faster render times because the image is only filtered once instead of as many times as there are transformations.

### 2.1.4 GPU Rendering

**Active OpenGL renderer**

The currently active OpenGL renderer.

**OpenGL renderer**

The renderer used to perform OpenGL rendering. Changing the OpenGL renderer requires a restart of the application.

**No. of OpenGL Contexts**

The number of OpenGL contexts created to perform OpenGL rendering. Each OpenGL context can be attached to a CPU thread, allowing for more frames to be rendered simultaneously. Increasing this value may increase performances for graphs with mixed CPU/GPU nodes but can drastically reduce performances if too many OpenGL contexts are active at once.

**OpenGL Rendering**

Select whether to activate OpenGL rendering or not. If disabled, even though a Project enable GPU rendering, it will not be activated.

### 2.1.5 Project Setup

**First image read set project format**

If checked, the project size is set to this of the first image or video read within the project.

**Auto-preview enabled by default for new projects**

If checked, then when creating a new project, the Auto-preview option is enabled.

**Auto fix relative file-paths**

If checked, when a project-path changes (either the name or the value pointed to), Natron checks all file-path parameters in the project and tries to fix them.

**Use drive letters instead of server names (Windows only)**

This is only relevant for Windows: If checked, Natron will not convert a path starting with a drive letter from the file dialog to a network share name. You may use this if for example you want to share a same project with several users across facilities with different servers but where users have all the same drive attached to a server.

### 2.1.6 Documentation

**Documentation Source**

Documentation source.

**Documentation local port (0=auto)**

The port onto which the documentation server will listen to. A value of 0 indicate that the documentation should automatically find a port by itself.

### 2.1.7 User Interface

**Warn when a file changes externally**

When checked, if a file read from a file parameter changes externally, a warning will be displayed on the viewer. Turning this off will suspend the notification system.

**Prompt with file dialog when creating Write node**

When checked, opens-up a file dialog when creating a Write node

**Refresh viewer only when editing is finished**

When checked, the viewer triggers a new render only when mouse is released when editing parameters, curves or the timeline. This setting doesn't apply to roto splines editing.

**Linear color pickers**

When activated, all colors picked from the color parameters are linearized before being fetched. Otherwise they are in the same colorspace as the viewer they were picked from.

**Maximum number of open settings panels (0="unlimited")**

This property holds the maximum number of settings panels that can be held by the properties dock at the same time. The special value of 0 indicates there can be an unlimited number of panels opened.

**Value increments based on cursor position**

When enabled, incrementing the value fields of parameters with the mouse wheel or with arrow keys will increment the digits on the right of the cursor.

When disabled, the value fields are incremented given what the plug-in decided it should be. You can alter this increment by holding Shift (x10) or Control (/10) while incrementing.

**Default layout file**

When set, Natron uses the given layout file as default layout for new projects. You can export/import a layout to/from a file from the Layout menu. If empty, the default application layout is used.

**Load workspace embedded within projects**

When checked, when loading a project, the workspace (windows layout) will also be loaded, otherwise it will use your current layout.

### 2.1.8 Color Management

**OpenColorIO configuration**

Select the OpenColorIO configuration you would like to use globally for all operators and plugins that use OpenColorIO, by setting the "OCIO" environment variable. Only nodes created after changing this parameter will take it into account, and it is better to restart the application after changing it. When "Custom config" is selected, the "Custom OpenColorIO config file" parameter is used.

**Custom OpenColorIO configuration file**

OpenColorIO configuration file (config.ocio) to use when "Custom config" is selected as the OpenColorIO config.

**Warn on OpenColorIO config change**

Show a warning dialog when changing the OpenColorIO config to remember that a restart is required.

### 2.1.9 Caching

**Aggressive caching**

When checked, Natron will cache the output of all images rendered by all nodes, regardless of their "Force caching" parameter. When enabling this option you need to have at least 8GiB of RAM, and 16GiB is recommended.

If not checked, Natron will only cache the nodes which have multiple outputs, or their parameter "Force caching" checked or if one of its output has its settings panel opened.

**Maximum amount of RAM memory used for caching (% of total RAM)**

This setting indicates the percentage of the total RAM which can be used by the memory caches.

**System RAM to keep free (% of total RAM)**

This determines how much RAM should be kept free for other applications running on the same system. When this limit is reached, the caches start recycling memory instead of growing. This value should reflect the amount of memory you want to keep available on your computer for other usage. A low value may result in a massive slowdown and high disk usage.

**Maximum playback disk cache size (GiB)**

The maximum size that may be used by the playback cache on disk (in GiB)

**Maximum DiskCache node disk usage (GiB)**

The maximum size that may be used by the DiskCache node on disk (in GiB)

**Disk cache path**

WARNING: Changing this parameter requires a restart of the application.

This points to the location where Natron on-disk caches will be. This variable should point to your fastest disk. This parameter can be overridden by the value of the environment variable NATRON_DISK_CACHE_PATH.

If the parameter is left empty or the location set is invalid, the default location will be used.

**Wipe Disk Cache**

Cleans-up all caches, deleting all folders that may contain cached data. This is provided in case Natron lost track of cached images for some reason.

### 2.1.10 Viewer

**Viewer textures bit depth**

Bit depth of the viewer textures used for rendering. Hover each option with the mouse for a detailed description.

**Viewer tile size is 2 to the power of…**

The dimension of the viewer tiles is 2^n by 2^n (i.e. 256 by 256 pixels for n=8). A high value means that the viewer renders large tiles, so that rendering is done less often, but on larger areas.

**Checkerboard tile size (pixels)**

The size (in screen pixels) of one tile of the checkerboard.

**Checkerboard color 1**

The first color used by the checkerboard.

**Checkerboard color 2**

The second color used by the checkerboard.

**Automatically enable wipe**

When checked, the wipe tool of the viewer will be automatically enabled when the mouse is hovering the viewer and changing an input of a viewer.

**Automatically enable proxy when scrubbing the timeline**

When checked, the proxy mode will be at least at the level indicated by the auto-proxy parameter.

**Max. opened node viewer interface**

Controls the maximum amount of nodes that can have their interface showing up at the same time in the viewer

**Use number keys for the viewer**

When enabled, the row of number keys on the keyboard is used for switching input (<key> connects input to A side, <shift-key> connects input to B side), even if the corresponding character in the current keyboard layout is not a number.

This may have to be disabled when using a remote display connection to Linux from a different OS.

**Only display overlays for the viewer render path**

When disabled, overlays for all the non-minimized open properties panels are displayed. When enabled, overlays are displayed only for the render path for the current viewer inputs.

### 2.1.11 Nodegraph

**Auto Scroll**

When checked the node graph will auto scroll if you move a node outside the current graph view.

**Auto-turbo**

When checked the Turbo-mode will be enabled automatically when playback is started and disabled when finished.

**Snap to node**

When moving nodes on the node graph, snap to positions where they are lined up with the inputs and output nodes.

**Maximum undo/redo for the node graph**

Set the maximum of events related to the node graph Natron remembers. Past this limit, older events will be deleted forever, allowing to re-use the RAM for other purposes.

Changing this value will clear the undo/redo stack.

**Disconnected arrow length**

The size of a disconnected node input arrow in pixels.

**Auto hide masks inputs**

When checked, any diconnected mask input of a node in the nodegraph will be visible only when the mouse is hovering the node or when it is selected.

**Merge node connect to A input**

If checked, upon creation of a new Merge node, or any other node with inputs named A and B, input A is be preferred for auto-connection. When the node is disabled, B is always output, whether this is checked or not.

### 2.1.12 Plug-ins

**Use bundled plug-ins**

When checked, Natron also uses the plug-ins bundled with the binary distribution.

When unchecked, only system-wide plug-ins found in are loaded (more information can be found in the help for the “Extra plug-ins search paths” setting).

**Prefer bundled plug-ins over system-wide plug-ins**

When checked, and if “Use bundled plug-ins” is also checked, plug-ins bundled with the Natron binary distribution will take precedence over system-wide plug-ins if they have the same internal ID.

**Enable default OpenFX plugins location**

When checked, Natron also uses the OpenFX plug-ins found in the default location (/Library/OFX/Plugins).

**OpenFX plug-ins search path**

Extra search paths where Natron should scan for OpenFX plug-ins. Extra plug-ins search paths can also be specified using the OFX_PLUGIN_PATH environment variable.

The priority order for system-wide plug-ins, from high to low, is:

- plugins bundled with the binary distribution of Natron (if "Prefer bundled plug-ins over system-wide plug-ins" is checked)
- plug-ins found in OFX_PLUGIN_PATH
- plug-ins found in /Library/OFX/Plugins (if "Enable default OpenFX plug-ins location" is checked)
- plugins bundled with the binary distribution of Natron (if "Prefer bundled plug-ins over system-wide plug-ins" is not checked)

Any change will take effect on the next launch of Natron.

**PyPlugs search path**

Search path where Natron should scan for Python group scripts (PyPlugs). The search paths for groups can also be specified using the NATRON_PLUGIN_PATH environment variable.

### 2.1.13 Python

**After project created**

Callback called once a new project is created (this is never called when "After project loaded" is called.)

The signature of the callback is: callback(app) where:

- app: points to the current application instance

**Default after project loaded**

The default afterProjectLoad callback that will be set for new projects.

**Default before project save**

The default beforeProjectSave callback that will be set for new projects.

**Default before project close**

The default beforeProjectClose callback that will be set for new projects.

**Default after node created**

The default afterNodeCreated callback that will be set for new projects.

**Default before node removal**

The default beforeNodeRemoval callback that will be set for new projects.

**Load PyPlugs in projects from .py if possible**

When checked, if a project contains a PyPlug, it will try to first load the PyPlug from the .py file. If the version of the PyPlug has changed Natron will ask you whether you want to upgrade to the new version of the PyPlug in your project. If the .py file is not found, it will fallback to the same behavior as when this option is unchecked. When unchecked the PyPlug will load as a regular group with the information embedded in the project file.

**Print auto-declared variables in the Script Editor**

When checked, Natron will print in the Script Editor all variables that are automatically declared, such as the app variable or node attributes.

### 2.1.14 Appearance

**Font**

List of all fonts available on your system

**Stylesheet file (.qss)**

When pointing to a valid .qss file, the stylesheet of the application will be set according to this file instead of the default stylesheet. You can adapt the default stylesheet that can be found in your distribution of Natron.

#### Main Window

**Use black & white toolbutton icons**

When checked, the tools icons in the left toolbar are greyscale. Changing this takes effect upon the next launch of the application.

#### Curve Editor

#### Dope Sheet

#### Node Graph

**Display plug-in icon on node-graph**

When checked, each node that has a plug-in icon will display it in the node-graph. Changing this option will not affect already existing nodes, unless a restart of Natron is made.

**Anti-Aliasing**

When checked, the node graph will be painted using anti-aliasing. Unchecking it may increase performance. Changing this requires a restart of Natron

**Default node color**

The default color used for newly created nodes.

**Default backdrop color**

The default color used for newly created backdrop nodes.

**Readers**

The color used for newly created Reader nodes.

**Writers**

The color used for newly created Writer nodes.

**Generators**

The color used for newly created Generator nodes.

**Color group**

The color used for newly created Color nodes.

**Filter group**

The color used for newly created Filter nodes.

**Transform group**

The color used for newly created Transform nodes.

**Time group**

The color used for newly created Time nodes.

**Draw group**

The color used for newly created Draw nodes.

**Keyer group**

The color used for newly created Keyer nodes.

**Channel group**

The color used for newly created Channel nodes.

**Merge group**

The color used for newly created Merge nodes.

**Views group**

The color used for newly created Views nodes.

**Deep group**

The color used for newly created Deep nodes.

#### Script Editor

**Font**

List of all fonts available on your system

**Font Size**

The font size

## 2.2 Environment Variables

### 2.2.1 What are Environment Variables?

Environment variables are global system variables accessible by all the processes running under the Operating System (OS). Environment variables are useful to store system-wide values such as the directories to search for the executable programs (`PATH`) and the OS version.

### 2.2.2 How do I set an environment variable?

#### Linux

To set an environment variable on Linux, enter the following command at a shell prompt, according to which shell you are using:

- bash/ksh/zsh: `export variable=value`
- csh/tcsh: `setenv variable value`

where variable is the name of the environment variable (such as `OFX_PLUGIN_PATH`) and value is the value you want to assign to the variable, (such as `/opt/OFX/Plugins`). To find out what environment variables are set, use the `env` command. To remove a variable from the environment, use the following commands:

- bash/ksh/zsh: `export -n variable`
- csh/tcsh: `unsetenv variable`

To set permanently an environment variable, add the command to your shell's startup script in your home directory. For Bash, this is usually `~/.bashrc`. Changes in these startup scripts don't affect shell instances already started; try opening a new terminal window to get the new settings, or refresh the curent settings using `source ~/.bashrc`.

### Windows

You can create or change environment variables in the Environment Variables dialog box. If you are adding to the `PATH` environment variable or any environment variable that takes multiple values, you should separate each value with a semicolon (;).

### Windows 8 and Windows 10

To open the Environment Variables dialog box:

1. In Search, search for and then select: Edit environment variables for your account

To create a new environment variable:

1. In the User variables section, click New to open the New User Variable dialog box.
2. Enter the name of the variable and its value, and click OK. The variable is added to the User variables section of the Environment Variables dialog box.
3. Click OK in the Environment Variables dialog box.

To modify an existing environment variable:

1. In the User variables section, select the environment variable you want to modify.
2. Click Edit to open the Edit User Variable dialog box.
3. Change the value of the variable and click OK. The variable is updated in the User variables section of the Environment Variables dialog box.

When you have finished creating or editing environment variables, click OK in the Environment Variables dialog box to save the values.

### Windows 7

To open the Environment Variables dialog box:

1. Click Start, then click Control Panel
2. Click User Accounts.
3. Click User Accounts again.
4. In the Task side pane on the left, click Change my environment variables to open the Environment Variables dialog box opens.

To create a new environment variable:

1. In the User variables section, click New to open the New User Variable dialog box.
2. Enter the name of the variable and its value, and click OK. The variable is added to the User variables section of the Environment Variables dialog box.
3. Click OK in the Environment Variables dialog box.

To modify an existing environment variable:

1. In the User variables section, select the environment variable you want to modify.
2. Click Edit to open the Edit User Variable dialog box opens.
3. Change the value of the variable and click OK. The variable is updated in the User variables section of the Environment Variables dialog box.

When you have finished creating or editing environment variables, click OK in the Environment Variables dialog box to save the values. You can then close the Control Panel.

#### macOS

To set an environment variable on macOS, open a terminal window. If you are setting the environment variable to run jobs from the command line, use the following command:

```
export variable=value
```

where variable is the name of the environment variable (such as `OFX_PLUGIN_PATH`) and value is the value you want to assign to the variable, (such as `/opt/OFX/Plugins`). You can find out which environment variables have been set with the `env` command.

If you are setting the environment variable globally to use with applications, use the commands given below. The environment variables set by these commands are inherited by any shell or application.

#### macOS newer than 10.10

See this article for instructions on how to create a "plist" file to store system-wide environment variables in newer versions of macOS.

#### MacOS X 10.10

To set an environment variable, enter the following command:

```
launchctl setenv variable "value"
```

To find out if an environment variable is set, use the following command:

```
launchctl getenv variable
```

To clear an environment variable, use the following command:

```
launchctl unsetenv variable
```

### 2.2.3 Natron Environment Variables

`NATRON_PLUGIN_PATH`: A semicolon-separated list of directories where to look for PyPlugs and Toolsets. Subdirectories are also searched, and symbolic links are followed.

`OFX_PLUGIN_PATH`: A semicolon-separated list of directories where to look for OpenFX plugin bundles. Subdirectories are also searched, and symbolic links are followed.

`PYTHONPATH`: semicolon-separated list of directories where to look for extra python modules. The Python modules should be compatible with Natron's embedded Python, and can be tested using the Python executable `natron-python`, which is installed next to the Natron binary. Python modules can also be installed with pip. For example, `natron-python -m pip install numpy` would install numpy for Natron.

`OCIO`: This variable can be used to point to the global OpenColorIO config file, e.g `config.ocio`, and it supersedes the OpenColorIO setting in Natron's preferences.

`FONTCONFIG_PATH`: This variable may be used to override the default fontconfig configuration directory, which configures fonts used by *Text* plug-ins.

`NATRON_DISK_CACHE_PATH`: The location where the Natron tile/image cache is stored. This overrides the "Disk cache path" preference. On Linux, the default location is `$XDG_CACHE_HOME/INRIA/Natron` if the environment variable `XDG_CACHE_HOME` is set, else `$HOME/.cache/INRIA/Natron`. On macOS, the default location is `$HOME/Library/Caches/INRIA/Natron`. On Windows, the default location is `C:\Documents and Settings\%USERNAME%\Local Settings\Application Data\cache\INRIA\Natron`.

## 2.3 Image nodes

The following sections contain documentation about every node in the Image group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.3.1 CheckerBoard node

*This documentation is for version 1.0 of CheckerBoard (net.sf.openfx.CheckerBoardPlugin).*

#### Description

Generate an image with a checkerboard.

A frame range may be specified for operators that need it.

See also: https://web.archive.org/web/20220807183203/http://www.opticalenquiry.com/nuke/index.php?title=Constant,_CheckerBoard,_ColorBars,_ColorWheel

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Default | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |
| Reformat / `reformat` | Boolean | Off | Set the output format to the given extent, except if the Bottom Left or Size parameters is animated. |

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Table 1 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / `frameRange` | Integer | min: 1 max: 1 | Time domain. |
| Output Components / `outputComponents` | Choice | RGBA | Components in the output<br>**RGBA**<br>**RGB**<br>**Alpha** |
| Box Size / `boxSize` | Double | x: 64 y: 64 | Size of the checkerboard boxes in pixels. |
| Color 0 / `color0` | Color | r: 0.1 g: 0.1 b: 0.1 a: 1 | Color to fill the box on top-left of image center and every other row and column. |
| Color 1 / `color1` | Color | r: 0.5 g: 0.5 b: 0.5 a: 1 | Color to fill the box on top-right of image center and every other row and column. |

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Table 1 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color 2 / `color2` | Color | r: 0.1 g: 0.1 b: 0.1 a: 1 | Color to fill the box on bottom-right of image center and every other row and column. |
| Color 3 / `color3` | Color | r: 0.5 g: 0.5 b: 0.5 a: 1 | Color to fill the box on bottom-left of image center and every other row and column. |
| Line Color / `lineColor` | Color | r: 1 g: 1 b: 1 a: 1 | Color of the line drawn between boxes. |
| Line Width / `lineWidth` | Double | 0 | Width, in pixels, of the lines drawn between boxes. |
| Centerline Color / `centerlineColor` | Color | r: 1 g: 1 b: 0 a: 1 | Color of the center lines. |
| Centerline Width / `centerlineWidth` | Double | 1 | Width, in pixels, of the center lines. |

### 2.3.2 ColorBars node

*This documentation is for version 1.0 of ColorBars (net.sf.openfx.ColorBars).*

#### Description

Generate an image with SMPTE RP 219:2002 color bars.

The output of this plugin is broadcast-safe of "Output IRE" is unchecked. Be careful that colorbars are defined in a nonlinear colorspace. In order to get linear RGB, this plug-in should be combined with a transformation from the video space to linear.

See also: https://web.archive.org/web/20220807183203/http://www.opticalenquiry.com/nuke/index.php?title=Constant,_CheckerBoard,_ColorBars,_ColorWheel

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Default | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |
| Reformat / `reformat` | Boolean | Off | Set the output format to the given extent, except if the Bottom Left or Size parameters is animated. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / `frameRange` | Integer | min: 1 max: 1 | Time domain. |

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Table 2 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Components / `outputComponents` | Choice | RGBA | Components in the output<br>**RGBA**<br>**RGB** |
| Bar Intensity / `barIntensity` | Double | 75 | Bar Intensity, in IRE unit. |
| Output IRE / `outputIRE` | Boolean | Off | When checked, the output is scaled so that 0 is black, the max value is white, and the superblack (under the middle of the magenta bar) has a negative value. |

### 2.3.3 ColorWheel node

*This documentation is for version 1.0 of ColorWheel (net.sf.openfx.ColorWheel).*

#### Description

Generate an image with a color wheel.

The color wheel occupies the full area, minus a one-pixel black and transparent border

See also: https://web.archive.org/web/20220807183203/http://www.opticalenquiry.com/nuke/index.php?title=Constant,_CheckerBoard,_ColorBars,_ColorWheel

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Default | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |

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Table 3 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Reformat / `reformat` | Boolean | Off | Set the output format to the given extent, except if the Bottom Left or Size parameters is animated. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / `frameRange` | Integer | min: 1 max: 1 | Time domain. |
| Output Components / `outputComponents` | Choice | RGBA | Components in the output<br>**RGBA**<br>**RGB**<br>**XY**<br>**Alpha** |
| Center Saturation / `centerSaturation` | Double | 0 | Sets the HSV saturation level in the center of the color wheel. |
| Edge Saturation / `edgeSaturation` | Double | 1 | Sets the HSV saturation level at the edges of the color wheel. |
| Center Value / `centerValue` | Double | 1 | Sets the HSV value level in the center of the color wheel. |
| Edge Value / `edgeValue` | Double | 1 | Sets the HSV value level at the edges of the color wheel. |

continues on next page

Table 3 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Gamma / `gamma` | Double | 0.45 | Sets the overall gamma level of the color wheel. |
| Rotate / `rotate` | Double | 0 | Sets the amount of rotation to apply to color position in the color wheel. Negative values produce clockwise rotation and vice-versa. |

### 2.3.4 Constant node

*This documentation is for version 1.0 of Constant (net.sf.openfx.ConstantPlugin).*

#### Description

Generate an image with a constant color.

See also: https://web.archive.org/web/20220807183203/http://www.opticalenquiry.com/nuke/index.php?title=Constant,_CheckerBoard,_ColorBars,_ColorWheel

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Default | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |
| Reformat / `reformat` | Boolean | Off | Set the output format to the given extent, except if the Bottom Left or Size parameters is animated. |

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Table 4 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / `frameRange` | Integer | min: 1 max: 1 | Time domain. |
| Output Components / `outputComponents` | Choice | RGBA | Components in the output<br>**RGBA**<br>**RGB**<br>**XY**<br>**Alpha** |
| Color / `color` | Color | r: 0 g: 0 b: 0 a: 0 | Color to fill the image with. |

### 2.3.5 OpenRaster node



*This documentation is for version 2.1 of OpenRaster (fr.inria.openfx.OpenRaster).*

#### Description

Read OpenRaster image format.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |

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Table 5 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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Table 5 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multiplied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multiplied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA** |
| Frame rate / `frameRate` | Double | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |

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Table 5 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 5 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.6 Read node

*This documentation is for version 1.0 of Read (fr.inria.built-in.Read).*

#### Description

Node used to read images or videos from disk. The image/video is identified by its filename and its extension. Given the extension, the Reader selected from the Preferences to decode that specific format will be used.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Info... / `fileInfo` | Button | | Press to display information about the file |
| Decoder / `decodingPluginChoice` | Choice | Default | Select the internal decoder plug-in used for this file format. By default this uses the plug-in selected for this file extension in the Preferences of Natron<br>**Default**: Use the default plug-in chosen from the Preferences to read this file format |
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |

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Table 6 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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Table 6 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multi-plied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multi-plied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA**<br>**RGB**<br>**RG**<br>**Alpha** |
| Frame rate / `frameRate` | Dou-ble | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |

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Table 6 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.7 ReadCDR node



*This documentation is for version 1.0 of ReadCDR (fr.inria.openfx.ReadCDR).*

#### Description

Read CorelDRAW(R) document format.

This plugin is not manufactured, approved, or supported by Corel Corporation or Corel Corporation Limited.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |

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Table 7 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |

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Table 7 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |
| File Premult / `filePremult` | Choice | Pre-Multiplied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multiplied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |

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Table 7 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA** |
| Frame rate / `frameRate` | Double | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |
| DPI / `dpi` | Integer | 90 | Dots-per-inch (90 is default) |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 7 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.8 ReadFFmpeg node



*This documentation is for version 1.1 of ReadFFmpeg (fr.inria.openfx.ReadFFmpeg).*

#### Description

Read video using FFmpeg.

All formats supported by FFmpeg should be supported, but there may be issues with some non-conform files. In this case, it is recommended to transcode the video to a digital intermediate format, which is more suitable for grading, compositing and video editing.

This can be done using the ffmpeg command-line tool, by following the instructions at (https://trac.ffmpeg.org/wiki/Encode/VFX).

Note that some format/codec combinations (eg AVI containing H264, MPEG-1 Video or MPEG-2 Video) do not support timestamps and must be moved to another container (e.g., MOV).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multi-plied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multi-plied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA**<br>**RGB** |
| Frame rate / `frameRate` | Dou-ble | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| First Track Only / `firstTrackOnly` | Boolean | Off | Causes the reader to ignore all but the first video track it finds in the file. This should be selected in a multiview project if the file happens to contain multiple video tracks that don't correspond to different views. |
| FFmpeg Info... / `libraryInfo` | Button | | Display information about the underlying library. |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.9 ReadKrita node



*This documentation is for version 2.0 of ReadKrita (fr.inria.openfx.ReadKrita).*

### Description

Read Krita image format.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multiplied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multiplied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA** |
| Frame rate / `frameRate` | Double | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 9 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.10 ReadMisc node



*This documentation is for version 1.2 of ReadMisc (fr.inria.openfx.ReadMisc).*

### Description

Read various image formats supported by ImageMagick.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |

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Table 10 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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Table 10 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multiplied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multiplied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA** |
| Frame rate / `frameRate` | Double | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |

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Table 10 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 10 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.11 ReadOIIO node



*This documentation is for version 2.0 of ReadOIIO (fr.inria.openfx.ReadOIIO).*

#### Description

Read images using OpenImageIO.

Output is always Premultiplied (alpha is associated).

The “Image Premult” parameter controls the file premultiplication state, and can be used to fix wrong file metadata (see the help for that parameter).

OpenImageIO supports reading/writing the following file formats:

BMP (*.bmp)

Cineon (*.cin)

Direct Draw Surface (*.dds)

DPX (*.dpx)

Field3D (*.f3d)

FITS (*.fits)

GIF (*.gif)

HDR/RGBE (*.hdr)

HEIC/HEIF (*.heic *.heif)

ICO (*.ico)

IFF (*.iff)

JPEG (*.jpg *.jpe *.jpeg *.jif *.jfif *.jfi)

JPEG-2000 (*.jp2 *.j2k)

OpenEXR (*.exr)

PNG / Portable Network Graphics (*.png)

PNM / Netpbm (*.pbm *.pgm *.ppm *.pfm)

PSD (*.psd *.pdd *.psb)

Ptex (*.ptex)

RAW digital camera files (*.crw *.cr2 *.nef *.raf *.dng and others)

RLA (*.rla)

SGI (*.sgi *.rgb *.rgba *.bw *.int *.inta)

Softimage PIC (*.pic)

Targa (*.tga *.tpic)

TIFF (*.tif *.tiff *.tx *.env *.sm *.vsm)

Webp (*.webp)

Zfile (*.zfile)

### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |

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Table 11 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |

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Table 11 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |
| File Premult / `filePremult` | Choice | Premultiplied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Premultiplied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA**<br>**RGB**<br>**RG**<br>**Alpha** |
| Frame rate / `frameRate` | Double | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |
| Image Info… / `showMetadata` | Button | | Shows information and metadata from the image at current time. |
| Auto Bright / `rawAutoBright` | Boolean | Off | If checked, use libraw's automatic increase of brightness by histogram (exposure correction). |
| Use Camera WB / `rawUseCameraWB` | Boolean | On | If checked, and if possible, use the white balance from the camera. |
| Adjust Maximum Thr. / `rawAdjustMaximumThr` | Double | 0 | This parameters controls auto-adjusting of maximum value based on channel_maximum[] data, calculated from real frame data. If calculated maximum is greater than adjust_maximum_thr*maximum, than maximum is set to calculated_maximum.<br>Default: 0. If you set this value above 0.99999, then default value will be used. If you set this value below 0.00001, then no maximum adjustment will be performed. A value of 0.75 is reasonable for still shots, but sequences should always use 0.<br>Adjusting maximum should not damage any picture (esp. if you use default value) and is very useful for correcting channel overflow problems (magenta clouds on landscape shots, green-blue highlights for indoor shots). |
| Max. value / `rawUserSat` | Integer | 0 | The camera sensor saturation (maximum) value. Raw values greater or equal to this are considered saturated and are processed using the algorithm specified by the rawHighlightMode parameter. 0 means to use the default value. |
| Output Colorspace / `rawOutputColor` | Choice | sRGB | Output colorspace.<br>**Raw (raw)**: Raw data<br>**sRGB (srgb)**: sRGB<br>**Adobe (adobergb)**: Adobe RGB (1998)<br>**Wide (wide)**: Wide-gamut RGB color space (or Adobe Wide Gamut RGB)<br>**ProPhoto (prophoto)**: Kodak ProPhoto RGB (or ROMM RGB)<br>**XYZ (xyz)**: CIE XYZ<br>**ACES (aces)**: AMPAS ACES |

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Table 11 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Camera Matrix / `rawUseCameraMatrix` | Choice | Default | Use/don't use an embedded color matrix.<br>**None (none)**: Do not use the embedded color matrix.<br>**Default (default)**: Use embedded color profile (if present) for DNG files (always); for other files only if rawUseCameraWb is set.<br>**Force (force)**: Use embedded color data (if present) regardless of white balance setting. |
| Highlight Mode / `rawHighlightMode` | Choice | Clip | Algorithm for restoring highlight clippings. Highlights are part of your images that are burned due to the inability of your camera to capture the highlights. Highlight recovery is applied after white balance and demosaic.<br>**Clip (clip)**: Clip all highlights to white.<br>**Unclip (unclip)**: Leave highlights unclipped in various shades of pink.<br>**Blend (blend)**: Blend clipped and unclipped values for a gradual fade to white.<br>**Rebuild (rebuild)**: Reconstruct highlights with various levels of aggressiveness. |
| Rebuild Level / `rawHighlightRebuildLevel` | Integer | 2 | Level of aggressiveness used to rebuild highlights. rawHighlightRebuildLevel=2 (which corresponds to -H 5 in LibRaw/dcraw) is a good compromise. If that's not good enough, use rawHighlightRebuildLevel=6, cut out the non-white highlights, and paste them into an image generated with rawHighlightRebuildLevel=0. |
| Exposure / `rawExposure` | Double | 1 | Amount of exposure correction before de-mosaicing, from 0.25 (2-stop darken) to 8 (3-stop brighten). (Default: 1., meaning no correction.) |
| Demosaic / `rawDemosaic` | Choice | AHD | Force a demosaicing algorithm. Will fall back on AHD if the demosaicing algorithm is not available due to licence restrictions (AHD-Mod, AFD, VCD, Mixed, LMMSE are GPL2, AMaZE is GPL3).<br>**None (none)**: No demosaicing.<br>**Linear (linear)**: Linear interpolation.<br>**VNG (vng)**: VNG interpolation.<br>**PPG (ppg)**: PPG interpolation.<br>**AHD (ahd)**: AHD interpolation.<br>**DCB (dcb)**: DCB interpolation.<br>**AHD-Mod (ahdmod)**: Modified AHD interpolation by Paul Lee.<br>**AFD (afd)**: AFD interpolation (5-pass).<br>**VCD (vcd)**: VCD interpolation.<br>**Mixed (mixed)**: Mixed VCD/Modified AHD interpolation.<br>**LMMSE (lmmse)**: LMMSE interpolation.<br>**DHT (dht)**: DHT interpolation.<br>**AAHD (aahd)**: Modified AHD interpolation by Anton Petrusevich. |
| Aber. / `rawAber` | Double | x: 1 y: 1 | Correction of chromatic aberrations, given as a red multiplier and a blue multiplier. The default values of (1.,1.) correspond to no correction. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `outputLayer` | Choice | | This is the layer that will be set to the the color plane. This is relevant only for image formats that can have multiple layers: exr, tiff, psd, etc… Note that in Natron you can access other layers with a Shuffle node downstream of this node. |
| Edge Pixels / `edgePixels` | Choice | Auto | Specifies how pixels in the border of the region of definition are handled<br>**Auto (auto)**: If the region of definition and format match exactly then repeat the border pixel otherwise use black<br>**Edge Detect (edge)**: For each edge, if the region of definition and format match exactly then repeat border pixel, otherwise use black<br>**Repeat (repeat)**: Repeat pixels outside the region of definition<br>**Black (black)**: Add black pixels outside the region of definition |
| Offset Negative Display Window / `offsetNegativeDispWindow` | Boolean | On | The EXR file format can have its "display window" origin at another location than (0,0). However in OpenFX, formats should have their origin at (0,0). If the left edge of the display window is not 0, either you can offset the display window so it goes to 0, or you can treat the negative portion as overscan and resize the format. |
| OpenImageIO Info… / `libraryInfo` | Button | | Display information about the underlying library. |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 11 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.12 ReadPDF node



*This documentation is for version 1.4 of ReadPDF (fr.inria.openfx.ReadPDF).*

#### Description

Read PDF documents using poppler.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |

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Table 12 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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Table 12 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multi-plied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multi-plied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA** |
| Frame rate / `frameRate` | Dou-ble | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |
| DPI / `dpi` | Dou-ble | 150 | Dots-per-inch (150 is default) |

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Table 12 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 12 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.13 ReadPFM node



*This documentation is for version 1.0 of ReadPFM (fr.inria.openfx.ReadPFM).*

### Description

Read PFM (Portable Float Map) files.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |

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Table 13 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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Table 13 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multiplied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multiplied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA**<br>**RGB**<br>**Alpha** |
| Frame rate / `frameRate` | Double | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |

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Table 13 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OCIO Config File / ocioConfigFile | N/A | | OpenColorIO configuration file |
| File Colorspace / ocioInputSpaceIndex | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / ocioOutputSpaceIndex | Choice | | Output data is taken to be in this colorspace. |
| key1 / key1 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / value1 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / key2 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / value2 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / key3 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.14 ReadPNG node



*This documentation is for version 1.0 of ReadPNG (fr.inria.openfx.ReadPNG).*

### Description

Read PNG files.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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Table 14 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multi-plied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multi-plied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA**<br>**RGB** |
| Frame rate / `frameRate` | Dou-ble | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |

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Table 14 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Image Info… / `showMetadata` | Button | | Shows information and metadata from the image at current time. |
| libpng Info… / `libraryInfo` | Button | | Display information about the underlying library. |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 14 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.15 ReadPSD node



*This documentation is for version 2.7 of ReadPSD (net.fxarena.openfx.ReadPSD).*

### Description

Read Photoshop/GIMP/Cinepaint (RGB/CMYK/GRAY) image formats with ICC color management.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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Table 15 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multiplied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multiplied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA** |
| Frame rate / `frameRate` | Double | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |

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Table 15 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Image layer / `layer` | Choice | Default | Select image layer<br><br>The recommended way to access layers is through a merge/shuffle node (multi-plane).<br>**Default**<br>**Layer 1**<br>**Layer 2**<br>**Layer 3**<br>**Layer 4**<br>**Layer 5**<br>**Layer 6**<br>**Layer 7**<br>**Layer 8**<br>**Layer 9** |
| Offset layers / `offset` | Boolean | On | Enable/Disable layer offset |
| Color management / `icc` | Boolean | Off | Enable/Disable ICC color management<br><br>Requires installed ICC v2/v4 color profiles. |

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Table 15 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Default RGB profile / `iccRGB` | Choice | None | Default RGB profile<br><br>Used when a RGB image is missing an embedded color profile.<br>**None**<br>**W/Web Safe Colors**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**N/Nebula Prizm**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**V/VX2453 Series**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**N/Nebula Prizm**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**V/VA26LHDTV10T**<br>**D/Display**<br>**L/LCD TV**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**D/Display**<br>**L/LG TV**<br>**D/Display**<br>**D/Display**<br>**V/VX2453 Series**<br>**L/LG TV** |

Table 15 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Default CMYK profile / `iccCMYK` | Choice | None | Default CMYK profile<br><br>Used when a CMYK image is missing an embedded color profile.<br>**None** |
| Default GRAY profile / `iccGRAY` | Choice | None | Default GRAY profile<br><br>Used when a GRAY image is missing an embedded color profile.<br>**None** |
| Rendering intent / `renderingIntent` | Choice | Perceptual | Rendering intent specifies the style of reproduction to be used.<br>**Undefined**<br>**Saturation**<br>**Perceptual**<br>**Absolute**<br>**Relative** |
| Black point / `blackPoint` | Boolean | Off | Enable/Disable black point compensation |

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Table 15 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Input color profile / `iccIn` | Choice | None | ICC input profile<br><br>If profile colorspace differs from image colorspace then a colorspace convert will happen.<br>**None**<br>**L/Lightness Increase**<br>**L/Lightness Decrease**<br>**S/Sepia**<br>**W/Web Safe Colors**<br>**B/Black & White**<br>**B/Blue Tone**<br>**G/Gray Tone**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**N/Nebula Prizm**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**V/VX2453 Series**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**N/Nebula Prizm**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**V/VA26LHDTV10T**<br>**D/Display**<br>**L/LCD TV**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display** |



| | | | |
|---|---|---|---|
| | | | **D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV** |

Table 15 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output color profile / `icc0ut` | Choice | None | ICC RGB output profile<br><br>If image is CMYK/GRAY a colorspace convert will happen.<br>**None**<br>**W/Web Safe Colors**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**N/Nebula Prizm**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SAMSUNG**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**V/VX2453 Series**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**N/Nebula Prizm**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**V/VA26LHDTV10T**<br>**D/Display**<br>**L/LCD TV**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**D/Display**<br>**S/SONY TV**<br>**D/Display**<br>**D/Display**<br>**L/LG TV**<br>**D/Display**<br>**D/Display**<br>**V/VX2453 Series**<br>**L/LG TV** |

Table 15 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| File Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 15 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.16 ReadSVG node



*This documentation is for version 3.3 of ReadSVG (net.fxarena.openfx.ReadSVG).*

### Description

Fast SVG (Scalable Vector Graphics) reader using librsvg and Cairo.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Sync | Sync | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The input image sequence/video stream file(s). |
| First Frame / `firstFrame` | Integer | 0 | The first frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the first output frame. |
| Before / `before` | Choice | Hold | What to do before the first frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| Last Frame / `lastFrame` | Integer | 0 | The last frame number to read from this image sequence or video file. This cannot be less than the first frame of the image sequence or video file, and cannot be greater than the last frame of the image sequence or video file. The first frame of a video file is numbered 1. If startingTime is 1 or timeOffset is 0, this is also the last output frame. |
| After / `after` | Choice | Hold | What to do after the last frame of the sequence.<br>**Hold (hold)**: While before the sequence, load the first frame.<br>**Loop (loop)**: Repeat the sequence before the first frame<br>**Bounce (bounce)**: Repeat the sequence in reverse before the first frame<br>**Black (black)**: Render a black image<br>**Error (error)**: Report an error |
| On Missing Frame / `onMissingFrame` | Choice | Error | What to do when a frame is missing from the sequence/stream.<br>**Hold previous (previous)**: Try to load the previous frame in the sequence/stream, if any.<br>**Load next (next)**: Try to load the next frame in the sequence/stream, if any.<br>**Load nearest (nearest)**: Try to load the nearest frame in the sequence/stream, if any.<br>**Error (error)**: Report an error<br>**Black (black)**: Render a black image |

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Table 16 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Mode / `frameMode` | Choice | Starting Time | **Starting Time (startingTime)**: Set at what output frame the first sequence frame is output. The sequence frame designated by the firstFrame parameter is output at frame timeOffset.<br>**Time Offset (timeOffset)**: Set an offset to be applied as a number of frames. The sequence frame designated by the firstFrame parameter is output at frame firstFrame+timeOffset. |
| Starting Time / `startingTime` | Integer | 0 | At what time (on the timeline) should this sequence/video start. |
| Time Offset / `timeOffset` | Integer | 0 | Offset applied to the sequence in time units (i.e. frames). |
| Proxy File / `proxy` | N/A | | Filename of the proxy images. They will be used instead of the images read from the File parameter when the proxy mode (downscaling of the images) is activated. |
| Proxy threshold / `proxyThreshold` | Double | x: 1 y: 1 | The scale of the proxy images. By default it will be automatically computed out of the images headers when you set the proxy file(s) path. When the render scale (proxy) is set to a scale lower or equal to this value then the proxy image files will be used instead of the original images. You can change this parameter by checking the "Custom scale" checkbox so that you can change the scale at which the proxy images should be used instead of the original images. |
| Custom Proxy Scale / `customProxyScale` | Boolean | Off | Check to enable the Proxy scale edition. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Premult / `filePremult` | Choice | Pre-Multiplied | The image file being read is considered to have this premultiplication state.<br>To get UnPremultiplied (or "unassociated alpha") images, set the "Output Premult" parameter to Unpremultiplied.<br>By default the value should be correctly be guessed by the image file, but this parameter can be edited if the metadatas inside the file are wrong.<br>- Opaque means that the alpha channel is considered to be 1 (one), and it is not taken into account in colorspace conversion.<br>- Premultiplied, red, green and blue channels are divided by the alpha channel before applying the colorspace conversion, and re-multiplied by alpha after colorspace conversion.<br>- UnPremultiplied, means that red, green and blue channels are not modified before applying the colorspace conversion, and are multiplied by alpha after colorspace conversion.<br>This is set automatically from the image file and the plugin, but can be adjusted if this information is wrong in the file metadata.<br>RGB images can only be Opaque, and Alpha images can only be Premultiplied (the value of this parameter doesn't matter).<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Premult / `outputPremult` | Choice | Pre-Multiplied | The alpha premultiplication in output of this node will have this state.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Output Components / `outputComponents` | Choice | RGBA | What type of components this effect should output when the main color plane is requested. For the Read node it will map (in number of components) the Output Layer choice to these.<br>**RGBA** |
| Frame rate / `frameRate` | Double | 24 | By default this value is guessed from the file. You can override it by checking the Custom fps parameter. The value of this parameter is what will be visible by the effects down-stream. |
| Custom FPS / `customFps` | Boolean | Off | If checked, you can freely force the value of the frame rate parameter. The frame-rate is just the meta-data that will be passed downstream to the graph, no retime will actually take place. |
| DPI / `dpi` | Integer | 90 | Dots-per-inch (90 is default) |

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Table 16 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OCIO Config File / ocioConfigFile | N/A | | OpenColorIO configuration file |
| File Colorspace / ocioInputSpaceIndex | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / ocioOutputSpaceIndex | Choice | | Output data is taken to be in this colorspace. |
| key1 / key1 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / value1 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / key2 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / value2 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / key3 | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 16 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

### 2.3.17 RunScript node

*This documentation is for version 1.0 of RunScript (fr.inria.openfx.RunScript).*

#### Description

Run a script with the given arguments. This is mostly useful to execute an external program on a set of input images files, which outputs image files. Writers should be connected to each input, so that the image files are written before running the script, and the output of this node should be fed into one or more Readers, which read the images written by the script.

Sample section of a node graph which uses RunScript:

```
                ...
                 ^
                 |
Write([Project]/scriptinput#####.png)
```

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```
                ^
                |
RunScript1(processes [Project]/scriptinput#####.png, output is [Project]/scriptoutput#
↪####.png)
                ^
                |
Read([Project]/scriptoutput#####.png, set the frame range manually)
                ^
                |
RunScript2(deletes temporary files [Project]/scriptinput#####.png and [Project]/
↪scriptoutput#####.png, optional)
                ^
                |
               ...
```

Keep in mind that the input and output files are never removed in the above graph. The output of RunScript is a copy of its first input.

Each argument may be:

- A filename (RunScript1 and RunScript2 in the example above should have `[Project]/scriptinput#####.png` and `[Project]/scriptoutput#####.png` as filename parameters 1 and 2)
- A floating-point value (which can be linked to any plugin)
- An integer
- A string

Under Unix, the script should begin with a traditional shebang line, e.g. '#!/bin/sh' or '#!/usr/bin/env python' The arguments can be accessed as usual from the script (in a Unix shell-script, argument 1 would be accessed as "$1" - use double quotes to avoid problems with spaces). For example, the script in RunScript2 in the above example would be:

```
#!/bin/sh
rm "$1" "$2"
```

This plugin uses pstream (http://pstreams.sourceforge.net), which is distributed under the Boost Software License, Version 1.0.

### Inputs

| Input | Description | Optional |
|---|---|---|
| 1 | | Yes |
| 2 | | Yes |
| 3 | | Yes |
| 4 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Parameters / `paramCount` | Integer | 0 | |
| Type of Parameter 1 / `type1` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |
| File Name1 / `filename1` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String1 / `string1` | String | | A string (or sequence of characters). |
| Floating Point1 / `double1` | Double | 0 | A floating point numerical value. |
| Integer1 / `integer1` | Integer | 0 | An integer numerical value. |

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Table 17 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type of Parameter 2 / `type2` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |
| File Name2 / `filename2` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String2 / `string2` | String | | A string (or sequence of characters). |
| Floating Point2 / `double2` | Double | 0 | A floating point numerical value. |
| Integer2 / `integer2` | Integer | 0 | An integer numerical value. |
| Type of Parameter 3 / `type3` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |
| File Name3 / `filename3` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String3 / `string3` | String | | A string (or sequence of characters). |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Floating Point3 / `double3` | Double | 0 | A floating point numerical value. |
| Integer3 / `integer3` | Integer | 0 | An integer numerical value. |
| Type of Parameter 4 / `type4` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |
| File Name4 / `filename4` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String4 / `string4` | String | | A string (or sequence of characters). |
| Floating Point4 / `double4` | Double | 0 | A floating point numerical value. |
| Integer4 / `integer4` | Integer | 0 | An integer numerical value. |
| Type of Parameter 5 / `type5` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Name5 / `filename5` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String5 / `string5` | String | | A string (or sequence of characters). |
| Floating Point5 / `double5` | Double | 0 | A floating point numerical value. |
| Integer5 / `integer5` | Integer | 0 | An integer numerical value. |
| Type of Parameter 6 / `type6` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |
| File Name6 / `filename6` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String6 / `string6` | String | | A string (or sequence of characters). |
| Floating Point6 / `double6` | Double | 0 | A floating point numerical value. |
| Integer6 / `integer6` | Integer | 0 | An integer numerical value. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type of Parameter 7 / `type7` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |
| File Name7 / `filename7` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String7 / `string7` | String | | A string (or sequence of characters). |
| Floating Point7 / `double7` | Double | 0 | A floating point numerical value. |
| Integer7 / `integer7` | Integer | 0 | An integer numerical value. |
| Type of Parameter 8 / `type8` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |
| File Name8 / `filename8` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String8 / `string8` | String | | A string (or sequence of characters). |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Floating Point8 / `double8` | Double | 0 | A floating point numerical value. |
| Integer8 / `integer8` | Integer | 0 | An integer numerical value. |
| Type of Parameter 9 / `type9` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |
| File Name9 / `filename9` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String9 / `string9` | String | | A string (or sequence of characters). |
| Floating Point9 / `double9` | Double | 0 | A floating point numerical value. |
| Integer9 / `integer9` | Integer | 0 | An integer numerical value. |
| Type of Parameter 10 / `type10` | Choice | File Name | **File Name**: . A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node.<br>**String**: A string (or sequence of characters).<br>**Floating Point**: A floating point numerical value.<br>**Integer**: An integer numerical value. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File Name10 / `filename10` | N/A | | A constant or animated string containing a filename.<br>If the string contains hashes (like ####) or a printf token (like %04d), they will be replaced by the frame number, and if it contains %v or %V, it will be replaced by the view ID ("l" or "r" for %v, "left" or "right" for %V).<br>This is usually linked to the output filename of an upstream Writer node, or to the input filename of a downstream Reader node. |
| String10 / `string10` | String | | A string (or sequence of characters). |
| Floating Point10 / `double10` | Double | 0 | A floating point numerical value. |
| Integer10 / `integer10` | Integer | 0 | An integer numerical value. |
| Script / `script` | String | #!/bin/sh | Contents of the script. Under Unix, the script should begin with a traditional shebang line, e.g. '#!/bin/sh' or '#!/usr/bin/env python'<br>The arguments can be accessed as usual from the script (in a Unix shell-script, argument 1 would be accessed as "$1" - use double quotes to avoid problems with spaces). |
| Validate / `validate` | Boolean | Off | Validate the script contents and execute it on next render. This locks the script and all its parameters. |

### 2.3.18 Solid node

*This documentation is for version 1.0 of Solid (net.sf.openfx.Solid).*

#### Description

Generate an image with a constant opaque color.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Default | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |
| Reformat / `reformat` | Boolean | Off | Set the output format to the given extent, except if the Bottom Left or Size parameters is animated. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / `frameRange` | Integer | min: 1 max: 1 | Time domain. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Components / `outputComponents` | Choice | RGB | Components in the output<br>**RGBA**<br>**RGB**<br>**XY**<br>**Alpha** |
| Color / `color` | Color | r: 0 g: 0 b: 0 | Color to fill the image with. |

### 2.3.19 Write node

*This documentation is for version 1.0 of Write (fr.inria.built-in.Write).*

#### Description

Node used to write images or videos on disk. The image/video is identified by its filename and its extension. Given the extension, the Writer selected from the Preferences to encode that specific format will be used.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Increment / `frameIncr` | Integer | 1 | The number of frames the timeline should step before rendering the new frame. If 1, all frames will be rendered, if 2 only 1 frame out of 2, etc. This number cannot be less than 1. |
| Read back file / `readBack` | Boolean | Off | When checked, the output of this node comes from reading the written file instead of the input node |
| Encoder / `encodingPluginChoice` | Choice | Default | Select the internal encoder plug-in used for this file format. By default this uses the plug-in selected for this file extension in the Preferences.<br>**Default**: Use the default plug-in chosen from the Preferences to write this file format |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `filename` | N/A | | The output image sequence/video stream file(s). The string must match the following format: path/sequenceName###.ext where the number of # (hashes) will define the number of digits to append to each file. For example path/mySequence###.jpg will be translated to path/mySequence000.jpg, path/mySequence001.jpg, etc. %d printf-like notation can also be used instead of the hashes, for example path/sequenceName%03d.ext will achieve the same than the example aforementioned. there will be at least 2 digits). The file name may not contain any # (hash) in which case it will be overridden everytimes. Views can be specified using the "long" view notation %V or the "short" notation using %v. |
| Format Type / `formatType` | Choice | Project Format | Determines which rectangle of pixels will be written in output.<br>**Input Format (input)**: Renders the pixels included in the input format<br>**Project Format (project)**: Renders the pixels included in the project format<br>**Fixed Format (fixed)**: Renders the pixels included in the format indicated by the Format parameter. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format to render<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| Input Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| File Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Input Premult / `inputPremult` | Choice | Pre-Multi-plied | Input is considered to have this premultiplication state.<br>Colorspace conversion is done on the input RGB data, even if it is premultiplied, and may thus give a wrong result if the input is premultiplied and the target colorspace is nonlinear.<br>This is set automatically from the input stream information, but can be adjusted if this information is wrong.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Clip Info… / `clipInfo` | But-ton | | Display information about the inputs |
| Frame Range / `frameRange` | Choice | Project frame range | What frame range should be rendered.<br>**Union of input ranges (union)**: The union of all inputs frame ranges will be rendered.<br>**Project frame range (project)**: The frame range delimited by the frame range of the project will be rendered.<br>**Manual (manual)**: The frame range will be the one defined by the first frame and last frame parameters. |
| First Frame / `firstFrame` | Inte-ger | 0 | |
| Last Frame / `lastFrame` | Inte-ger | 0 | |

### 2.3.20 WriteFFmpeg node

*This documentation is for version 1.1 of WriteFFmpeg (fr.inria.openfx.WriteFFmpeg).*

#### Description

Write a video sequence using FFmpeg.

This plugin can be used to produce entheir digital intermediates, i.e. videos with very high resolution and quality which can be read frame by frame for further processing, or highly compressed videos to distribute on the web. Note that this plug-in does not support audio, but audi can easily be added to the video using the ffmpeg command-line tool (see note below). In a VFX context, it is often preferable to save processed images as a sequence of individual frames (using WriteOIIO), if disk space and real-time playing are not an issue.

The preferred pixel coding (Pref. Pixel Coding) and bit depth (Pref. Bit Depth) can be selected. This is especially useful for codecs that propose multiple pixel formats (e.g. ffv1, ffvhuff, huffyuv, jpeg2000, mjpeg, mpeg2video, vc2, libopenjpeg, png, qtrle, targa, tiff, libschroedinger, libtheora, libvpx, libvpx-vp9, libx264, libx265).

The pixel format is selected from the available choices for the chosen codec using the following rules:

- First, try to find the format with the smallest BPP (bits per pixel) that fits into the preferences.
- Second, If no format fits, get the format that has a BPP equal or a bit higher that the one computed from the preferences.
- Last, if no such format is found, get the format that has the highest BPP.

The selected pixel coding, bit depth, and BPP are displayed in the Selected Pixel Coding, Bit Depth, and BPP parameters.

The recommended Codec/Container configurations for encoding digital intermediates are (see also https://trac.ffmpeg.org/wiki/Encode/VFX):

- ProRes inside QuickTime: all ProRes profiles are 10-bit and are intra-frame (each frame is encoded separately). Prores 4444 can also encode the alpha channel.
- Avid DNxHR inside QuickTime: the codec is intra-frame. DNxHR profiles are resolution-independent and are available with 8-bit or 10-bit depth. The alpha channel cannot be encoded.
- HEVC (hev1/libx265) inside Matroska, MP4, QuickTime or MPEG-TS and Output Quality set to Lossless or Perceptually Lossless. libx265 supports 8-bit, 10-bit and 12-bit depth (if libx265 was compiled with high bit depth support). Lossless may not be playable in real-time for high resolutions. Set the Encoding Speed to Ultra Fast for faster encoding but worse compression, or Very Slow for best compression.

To write videos intended for distribution (as media files or for streaming), the most popular codecs are mp4v (mpeg4 or libxvid), avc1 (libx264), H264 (libopenh264), hev1 (libx265), VP80 (libvpx) and VP90 (libvpx-vp9). The quality of mp4v may be set using the Global Quality parameter (between 1 and 31, 1 being the highest quality), and the quality of avc1, hev1, VP80 and VP90 may be set using the Output Quality parameter. More information can be found at https://trac.ffmpeg.org/wiki#Encoding

If the output video should be encoded with specific FFmpeg options, such as a given pixel format or encoding option, it is better to write the output as individual frames in an image format that has a sufficient bit depth, and to encode the set of individual frames to a video using the command-line ffmpeg tool.

The settings for the “Global Quality” and “Quality” parameters may have different meanings for different codecs. See http://slhck.info/video/2017/02/24/vbr-settings.html for a summary of recommended values. Using these settings should be preferred over constant bitrate-based encoding, as it usually gives a much better result.

Adding audio

If synchronized audio is available as a separate file, encoded with the right codec, it can be easily added to the video using a command like: ffmpeg -i input.mp4 -i input.mp3 -c copy -map 0:0 -map 1:0 output.mp4 (in this example, input.mp4 contains the video, input.mp3 contains the audio, and output.mp4 co,ntains both tracks).

This command does not re-encode the video or audio, but simply copies the data from each source file and places it in separate streams in the output.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Components / `outputComponents` | Choice | RGBA | Map the input layer to this type of components before writing it to the output file.<br>**RGB**<br>**RGBA** |
| File / `filename` | N/A | | The output image sequence/video stream file(s). The string must match the following format: path/sequenceName###.ext where the number of # (hashes) will define the number of digits to append to each file. For example path/mySequence###.jpg will be translated to path/mySequence000.jpg, path/mySequence001.jpg, etc. %d printf-like notation can also be used instead of the hashes, for example path/sequenceName%03d.ext will achieve the same than the example aforementioned. there will be at least 2 digits). The file name may not contain any # (hash) in which case it will be overridden everytimes. Views can be specified using the "long" view notation %V or the "short" notation using %v. |
| Overwrite / `overwrite` | Boolean | On | Overwrite existing files when rendering. |
| Format Type / `formatType` | Choice | Project Format | Determines which rectangle of pixels will be written in output.<br>**Input Format (input)**: Renders the pixels included in the input format<br>**Project Format (project)**: Renders the pixels included in the project format<br>**Fixed Format (fixed)**: Renders the pixels included in the format indicated by the Format parameter. |

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Table 20 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format to render<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| Input Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| File Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |
| Input Premult / `inputPremult` | Choice | Pre-Multiplied | Input is considered to have this premultiplication state.<br>Colorspace conversion is done on the input RGB data, even if it is premultiplied, and may thus give a wrong result if the input is premultiplied and the target colorspace is nonlinear.<br>This is set automatically from the input stream information, but can be adjusted if this information is wrong.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Clip Info… / `clipInfo` | Button | | Display information about the inputs |
| Frame Range / `frameRange` | Choice | Project frame range | What frame range should be rendered.<br>**Union of input ranges (union)**: The union of all inputs frame ranges will be rendered.<br>**Project frame range (project)**: The frame range delimited by the frame range of the project will be rendered.<br>**Manual (manual)**: The frame range will be the one defined by the first frame and last frame parameters. |
| First Frame / `firstFrame` | Integer | 0 | |
| Last Frame / `lastFrame` | Integer | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Container / `format` | Choice | guess from file-name | Output format/container.<br>**guess from filename (default)**<br>**AVI (Audio Video Interleaved) [avi] (avi)**: Compatible with ayuv, cfhd, cinepak, dpx, ffv1, ffvhuff, flv, h263p, huffyuv, jpeg2000, jpegls, ljpeg, mjpeg, mpeg4, msmpeg4v2, msmpeg4, png, svq1, targa, v308, v408, v410, vc2, libaom-av1, libopenjpeg, librav1e, libtheora, libvpx, libvpx-vp9, libxvid.<br>**FLV (Flash Video) [flv] (flv)**: Compatible with flv, mpeg4, libx264, libx264rgb, libxvid, libopenh264.<br>**Matroska [matroska] (matroska)**: Compatible with prores_ksap4h, prores_ksapch, prores_ksapcn, prores_ksapcs, prores_ksapco, ffv1, mjpeg, mpeg2video, mpeg4, msmpeg4, vc2, libaom-av1, librav1e, libtheora, libvpx, libvpx-vp9, libx264, libx264rgb, libx265, libxvid, libopenh264.<br>**QuickTime / MOV [mov] (mov)**: Compatible with prores_ksap4h, prores_ksapch, prores_ksapcn, prores_ksapcs, prores_ksapco, avrp, cinepak, dnxhd, dpx, exr, hap, jpeg2000, mjpeg, mpeg2video, mpeg4, msmpeg4, png, qtrle, svq1, targa, tiff, v308, v408, v410, vc2, libaom-av1, libopenjpeg, librav1e, libvpx, libvpx-vp9, libx264, libx264rgb, libx265, libxvid, libopenh264.<br>**MP4 (MPEG-4 Part 14) [mp4] (mp4)**: Compatible with jpeg2000, mjpeg, mpeg2video, mpeg4, png, vc2, libaom-av1, libopenjpeg, librav1e, libvpx-vp9, libx264, libx264rgb, libx265, libxvid, libopenh264.<br>**MPEG-1 Systems / MPEG program stream [mpeg] (mpeg)**: Compatible with libx264, libx264rgb, libopenh264.<br>**MPEG-TS (MPEG-2 Transport Stream) [mpegts] (mpegts)**: Compatible with mpeg2video, mpeg4, vc2, libx264, libx264rgb, libx265, libxvid, libopenh264.<br>**Ogg Video [ogv] (ogv)**: Compatible with libtheora.<br>**3GP2 (3GPP2 file format) [3g2] (3g2)**: Compatible with mpeg4, libx264, libx264rgb, libxvid, libopenh264.<br>**3GP (3GPP file format) [3gp] (3gp)**: Compatible with mpeg4, libx264, libx264rgb, libxvid, libopenh264. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Codec / codec | Choice | ap4h Apple ProRes 4444 | Output codec used for encoding. The general recommendation is to write either separate frames (using WriteOIIO), or an uncompressed video format, or a "digital intermediate" format (ProRes, DNxHD), and to transcode the output and mux with audio with a separate tool (such as the ffmpeg or mencoder command-line tools).<br>The FFmpeg encoder codec name is given between brackets at the end of each codec description.<br>Please refer to the FFmpeg documentation http://ffmpeg.org/ffmpeg-codecs.html for codec options.<br>**ap4h Apple ProRes 4444 (prores_ksap4h)**: Compatible with matroska, mov.<br>**apch Apple ProRes 422 HQ (prores_ksapch)**: Compatible with matroska, mov.<br>**apcn Apple ProRes 422 (prores_ksapcn)**: Compatible with matroska, mov.<br>**apcs Apple ProRes 422 LT (prores_ksapcs)**: Compatible with matroska, mov.<br>**apco Apple ProRes 422 Proxy (prores_ksapco)**: Compatible with matroska, mov.<br>**AVrp Avid 1:1 10-bit RGB Packer [avrp] (avrp)**: Compatible with mov.<br>**AYUV Uncompressed packed MS 4:4:4:4 [ayuv] (ayuv)**: Compatible with avi.<br>**CFHD GoPro Cineform HD [cfhd] (cfhd)**: Compatible with avi.<br>**cvid Cinepak [cinepak] (cinepak)**: Compatible with avi, mov.<br>**AVdn Avid DNxHD / DNxHR / SMPTE VC-3 [dnxhd] (dnxhd)**: Compatible with mov.<br>**dpx DPX (Digital Picture Exchange) image [dpx] (dpx)**: Compatible with avi, mov.<br>**exr EXR image [exr] (exr)**: Compatible with mov.<br>**FFV1 FFmpeg video codec #1 [ffv1] (ffv1)**: Compatible with avi, matroska.<br>**FFVH Huffyuv FFmpeg variant [ffvhuff] (ffvhuff)**: Compatible with avi.<br>**FLV1 FLV / Sorenson Spark / Sorenson H.263 (Flash Video) [flv] (flv)**: Compatible with avi, flv.<br>**H263 H.263+ / H.263-1998 / H.263 version 2 [h263p] (h263p)**: Compatible with avi.<br>**Hap1 Vidvox Hap [hap] (hap)**: Compatible with mov.<br>**HFYU HuffYUV [huffyuv] (huffyuv)**: Compatible with avi.<br>**mjp2 JPEG 2000 [jpeg2000] (jpeg2000)**: Compatible with avi, mov, mp4.<br>**MJLS JPEG-LS [jpegls] (jpegls)**: Compatible with avi.<br>**LJPG Lossless JPEG [ljpeg] (ljpeg)**: Compatible with avi.<br>**jpeg Photo JPEG [mjpeg] (mjpeg)**: Compatible with avi, matroska, mov, mp4.<br>**m2v1 MPEG-2 Video [mpeg2video] (mpeg2video)**: Compatible with matroska, mov, mp4, mpegts.<br>**mp4v MPEG-4 part 2 [mpeg4] (mpeg4)**: Compatible with avi, flv, matroska, mov, mp4, mpegts, 3g2, 3gp.<br>**MP42 MPEG-4 part 2 Microsoft variant version 2 [msmpeg4v2] (msmpeg4v2)**: Compatible with avi.<br>**3IVD MPEG-4 part 2 Microsoft variant version 3 [msmpeg4] (msmpeg4)**: Compatible with avi, matroska, mov.<br>**png PNG (Portable Network Graphics) image [png] (png)**: Compatible with avi, mov, mp4. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Codec Name / `codecShortName` | String | | The codec used when the writer was configured. If this parameter is visible, this means that this codec may not be supported by this version of the plugin. |
| FPS / `fps` | Double | 24 | File frame rate |
| Reset FPS / `resetFps` | Button | | Reset FPS from the input FPS. |
| Pref. Pixel Coding / `prefPixelCoding` | Choice | YUV422 | Preferred pixel coding.<br>**YUV420 (yuv420)**: 1 Cr & Cb sample per 2x2 Y samples.<br>**YUV422 (yuv422)**: 1 Cr & Cb sample per 2x1 Y samples.<br>**YUV444 (yuv444)**: 1 Cr & Cb sample per Y sample.<br>**RGB (rgb)**: Separate r, g, b.<br>**XYZ (xyz)**: CIE XYZ compressed with gamma=2.6, used for Digital Cinema. |
| Bit Depth / `prefBitDepth` | Choice | 8 | Preferred bit depth (number of bits per component).<br>**8**<br>**10**<br>**12**<br>**16** |
| Alpha / `enableAlpha` | Boolean | Off | If checked, and the input contains alpha, formats with an alpha channel are preferred. |
| Show Avail. / `prefShow` | Button | | Show available pixel codings for this codec. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| DNxHD Codec Profile / `DNxHDCodecProfile` | Choice | DNxHR 444 | Only for the Avid DNxHD codec, select the target bit rate for the encoded movie. The stream may be resized to 1920x1080 if resolution is not supported. Writing in thin-raster HDV format (1440x1080) is not supported by this plug-in, although FFmpeg supports it.<br>**DNxHR 444 (dnxhr444)**: DNxHR 4:4:4 (12 bit, RGB / 4:4:4, 4.5:1 compression)<br>**DNxHR HQX (dnxhrhqx)**: DNxHR High Quality (12 bit, 4:2:2 chroma sub-sampling, 5.5:1 compression)<br>**DNxHR HQ (dnxhrhq)**: DNxHR High Quality (8 bit, 4:2:2 chroma sub-sampling, 4.5:1 compression)<br>**DNxHR SQ (dnxhrsq)**: DNxHR Standard Quality (8 bit, 4:2:2 chroma sub-sampling, 7:1 compression)<br>**DNxHR LB (dnxhrlb)**: DNxHR Low Bandwidth (8 bit, 4:2:2 chroma sub-sampling, 22:1 compression)<br>**DNxHD 422 10-bit 440Mbit (dnxhd422_440x)**: 880x in 1080p/60 or 1080p/59.94, 730x in 1080p/50, 440x in 1080p/30, 390x in 1080p/25, 350x in 1080p/24<br>**DNxHD 422 10-bit 220Mbit (dnxhd422_220x)**: 440x in 1080p/60 or 1080p/59.94, 365x in 1080p/50, 220x in 1080i/60 or 1080i/59.94, 185x in 1080i/50 or 1080p/25, 175x in 1080p/24 or 1080p/23.976, 220x in 1080p/29.97, 220x in 720p/59.94, 175x in 720p/50<br>**DNxHD 422 8-bit 220Mbit (dnxhd422_220)**: 440 in 1080p/60 or 1080p/59.94, 365 in 1080p/50, 220 in 1080i/60 or 1080i/59.94, 185 in 1080i/50 or 1080p/25, 175 in 1080p/24 or 1080p/23.976, 220 in 1080p/29.97, 220 in 720p/59.94, 175 in 720p/50<br>**DNxHD 422 8-bit 145Mbit (dnxhd422_145)**: 290 in 1080p/60 or 1080p/59.94, 240 in 1080p/50, 145 in 1080i/60 or 1080i/59.94, 120 in 1080i/50 or 1080p/25, 115 in 1080p/24 or 1080p/23.976, 145 in 1080p/29.97, 145 in 720p/59.94, 115 in 720p/50<br>**DNxHD 422 8-bit 36Mbit (dnxhd422_36)**: 90 in 1080p/60 or 1080p/59.94, 75 in 1080p/50, 45 in 1080i/60 or 1080i/59.94, 36 in 1080i/50 or 1080p/25, 36 in 1080p/24 or 1080p/23.976, 45 in 1080p/29.97, 100 in 720p/59.94, 85 in 720p/50 |
| Hap Format / `HapFormat` | Choice | Hap 1 | Only for the Hap codec, select the target format.<br>**Hap 1 (hap)**: DXT1 textures (FourCC Hap1)<br>**Hap Alpha (hap_alpha)**: DXT5 textures (FourCC Hap5)<br>**Hap Q (hap_q)**: DXT5-YCoCg textures (FourCC HapY) |
| Selected Pixel Coding / `infoPixelFormat` | String | | Pixel coding of images passed to the encoder. If several pixel codings are available, the coding which causes less data loss is selected. Other pixel formats may be available by transcoding with ffmpeg on the command-line, as can be seen by executing 'ffmpeg –help encoder=codec_name' on the command-line. |
| Bit Depth / `infoBitDepth` | Integer | 0 | Bit depth (number of bits per component) of the pixel format. |
| BPP / `infoBpp` | Integer | 0 | Bits per pixel of the pixel format. |
| Fast Start / `fastStart` | Boolean | Off | Write decoding critical metadata (moov atom) at beginning of the file to allow playback when streaming. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| DNxHD Output Range / `DNxHDEncodeVideoRange` | Choice | Video Range | When encoding using DNxHD this is used to select between full scale data range and 'video/legal' data range.<br>Full scale data range is 0-255 for 8-bit and 0-1023 for 10-bit. 'Video/legal' data range is a reduced range, 16-240 for 8-bit and 64-960 for 10-bit.<br>**Full Range (full)**<br>**Video Range (video)** |
| Output Quality / `crf` | Choice | Medium Quality | Constant Rate Factor (CRF); tradeoff between video quality and file size. Used by avc1, hev1, VP80, VP9, and CAVS codecs.<br>Option -crf in ffmpeg.<br>**None (none)**: Use constant bit-rate rather than constant output quality<br>**Lossless (crf0)**: Corresponds to CRF = 0.<br>**Perceptually Lossless (crf17)**: Corresponds to CRF = 17.<br>**High Quality (crf20)**: Corresponds to CRF = 20.<br>**Medium Quality (crf23)**: Corresponds to CRF = 23.<br>**Low Quality (crf26)**: Corresponds to CRF = 26.<br>**Very Low Quality (crf29)**: Corresponds to CRF = 29. |
| Encoding Speed / `x26xSpeed` | Choice | Medium | Trade off performance for compression efficiency. Available for avc1 and hev1.<br>Option -preset in ffmpeg.<br>**Ultra Fast (ultrafast)**: Fast encoding, but larger file size.<br>**Very Fast (veryfast)**<br>**Faster (faster)**<br>**Fast (fast)**<br>**Medium (medium)**<br>**Slow (slow)**<br>**Slower (slower)**<br>**Very Slow (veryslow)**: Slow encoding, but smaller file size. |
| Global Quality / `qscale` | Double | -1 | For lossy encoding, this controls image quality, from 0 to 100 (the lower, the better, 0 being near-lossless). For lossless encoding, this controls the effort and time spent at compressing more. -1 or negative value means to use the codec default or CBR (constant bit rate). Used for example by FLV1, mjp2, theo, jpeg, m2v1, mp4v MP42, 3IVD, codecs.<br>Option -qscale in ffmpeg. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Quality / `quality` | Integer | min: -1<br>max: -1 | The quality range the codec is allowed to vary the image data quantizer between to attempt to hit the desired bitrate. The lower, the better: higher values mean increased image degradation is possible, but with the upside of lower bit rates. Only supported by certain codecs (e.g. VP80, VP90, avc1, but not hev1 or mp4v).<br>-1 means to use the codec default.<br>Good values are 12-23 for the least quality, 6-15 for low quality, 3-7 for medium quality, 1-3 for high quality, and 1-1 for the best quality.<br>Options -qmin and -qmax in ffmpeg. |
| Bitrate / `bitrateMbps` | Double | 185 | The target bitrate the codec will attempt to reach (in Megabits/s), within the confines of the bitrate tolerance and quality min/max settings. Only supported by certain codecs (e.g. hev1, m2v1, MP42, 3IVD, but not mp4v, avc1 or H264).<br>Option -b in ffmpeg (multiplied by 1000000). |
| Bitrate Tolerance / `bitrateToleranceMbps` | Double | 0 | Set video bitrate tolerance (in Megabits/s). In 1-pass mode, bitrate tolerance specifies how far ratecontrol is willing to deviate from the target average bitrate value. This is not related to min/max bitrate. Lowering tolerance too much has an adverse effect on quality. As a guideline, the minimum slider range of target bitrate/target fps is the lowest advisable setting. Anything below this value may result in failed renders.<br>Only supported by certain codecs (e.g. MP42, 3IVD, but not avc1, hev1, m2v1, mp4v or H264).<br>A reasonable value is 5 * bitrateMbps / fps.<br>Option -bt in ffmpeg (multiplied by 1000000). |
| Keyframe Interval / `gopSize` | Integer | -1 | The keyframe intervale, also called GOP size, specifies how many frames may be grouped together by the codec to form a compression GOP. Exercise caution with this control as it may impact whether the resultant file can be opened in other packages. Only supported by certain codecs.<br>-1 means to use the codec default if bFrames is not 0, or 1 if bFrames is 0 to ensure only intra (I) frames are produced, producing a video which is easier to scrub frame-by-frame.<br>Option -g in ffmpeg. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Max B-Frames / `bFrames` | Integer | -1 | Set max number of B frames between non-B-frames. Must be an integer between -1 and 16. 0 means that B-frames are disabled. If a value of -1 is used, it will choose an automatic value depending on the encoder. Influences file size and seekability. Only supported by certain codecs.<br>-1 means to use the codec default if Keyframe Interval is not 1, or 0 if Keyframe Interval is 1 to ensure only intra (I) frames are produced, producing a video which is easier to scrub frame-by-frame.<br>Option -bf in ffmpeg. |
| Write NCLC / `writeNCLC` | Boolean | On | Write nclc data in the colr atom of the video header. QuickTime only. |
| FFmpeg Info… / `libraryInfo` | Button | | Display information about the underlying library. |

### 2.3.21 WriteOIIO node

*This documentation is for version 1.0 of WriteOIIO (fr.inria.openfx.WriteOIIO).*

#### Description

Write images using OpenImageIO.

OpenImageIO supports writing the following file formats:

BMP (*.bmp)

Cineon (*.cin)

DPX (*.dpx)

FITS (*.fits)

HDR/RGBE (*.hdr)

HEIC/HEIF (*.heic *.heif)

Icon (*.ico)

IFF (*.iff)

JPEG (*.jpg *.jpe *.jpeg *.jif *.jfif *.jfi)

JPEG-2000 (*.jp2 *.j2k)

OpenEXR (*.exr)

Portable Network Graphics (*.png)

PNM / Netpbm (*.pbm *.pgm *.ppm)

PSD (*.psd *.pdd *.psb)

RLA (*.rla)

SGI (*.sgi *.rgb *.rgba *.bw *.int *.inta)

Softimage PIC (*.pic)

Targa (*.tga *.tpic)

TIFF (*.tif *.tiff *.tx *.env *.sm *.vsm)

Zfile (*.zfile)

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Components / `outputComponents` | Choice | RGBA | Map the input layer to this type of components before writing it to the output file.<br>**Alpha**<br>**RGB**<br>**RGBA** |
| File / `filename` | N/A | | The output image sequence/video stream file(s). The string must match the following format: path/sequenceName###.ext where the number of # (hashes) will define the number of digits to append to each file. For example path/mySequence###.jpg will be translated to path/mySequence000.jpg, path/mySequence001.jpg, etc. %d printf-like notation can also be used instead of the hashes, for example path/sequenceName%03d.ext will achieve the same than the example aforementioned. there will be at least 2 digits). The file name may not contain any # (hash) in which case it will be overridden everytimes. Views can be specified using the "long" view notation %V or the "short" notation using %v. |
| Overwrite / `overwrite` | Boolean | On | Overwrite existing files when rendering. |
| Format Type / `formatType` | Choice | Project Format | Determines which rectangle of pixels will be written in output.<br>**Input Format (input)**: Renders the pixels included in the input format<br>**Project Format (project)**: Renders the pixels included in the project format<br>**Fixed Format (fixed)**: Renders the pixels included in the format indicated by the Format parameter. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format to render<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Clip To RoD / `clipToRoD` | Boolean | On | When checked, the portion of the image written will be the region of definition of the image in input and not the format selected by the Output Format parameter.<br>For the EXR file format, this will distinguish the data window (size of the image in input) from the display window (the format specified by Output Format). |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| Input Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| File Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 21 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |
| Input Premult / `inputPremult` | Choice | PreMultiplied | Input is considered to have this premultiplication state.<br>Colorspace conversion is done on the input RGB data, even if it is premultiplied, and may thus give a wrong result if the input is premultiplied and the target colorspace is nonlinear.<br>This is set automatically from the input stream information, but can be adjusted if this information is wrong.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Clip Info… / `clipInfo` | Button | | Display information about the inputs |
| Frame Range / `frameRange` | Choice | Project frame range | What frame range should be rendered.<br>**Union of input ranges (union)**: The union of all inputs frame ranges will be rendered.<br>**Project frame range (project)**: The frame range delimited by the frame range of the project will be rendered.<br>**Manual (manual)**: The frame range will be the one defined by the first frame and last frame parameters. |
| First Frame / `firstFrame` | Integer | 0 | |
| Last Frame / `lastFrame` | Integer | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Tile Size / `tileSize` | Choice | Scan-Line Based | Size of a tile in the output file for formats that support tiles. If scan-line based, the whole image will have a single tile.<br>**Scan-Line Based (0)**<br>**64**<br>**128**<br>**256**<br>**512** |
| Bit Depth / `bitDepth` | Choice | auto | Number of bits per sample in the file [TIFF,DPX,TGA,DDS,ICO,IFF,PNM,PIC].<br>**auto**: Guess from the output format<br>**8i**: 8 bits integer<br>**10i**: 10 bits integer<br>**12i**: 12 bits integer<br>**16i**: 16 bits integer<br>**16f**: 16 bits floating point<br>**32i**: 32 bits integer<br>**32f**: 32 bits floating point<br>**64i**: 64 bits integer<br>**64f**: 64 bits floating point |
| Quality / `quality` | Integer | 100 | Indicates the quality of compression to use (0-100), for those plugins and compression methods that allow a variable amount of compression, with higher numbers indicating higher image fidelity. [JPEG, TIFF w/ JPEG comp., WEBP] |
| DWA Compression Level / `dwaCompressionLevel` | Double | 45 | Amount of compression when using Dreamworks DWAA or DWAB compression options. These lossy formats are variable in quality and can minimize the compression artifacts. Higher values will result in greater compression and likewise smaller file size, but increases the chance for artifacts. Values from 45 to 150 are usually correct for production shots, whereas HDR vacation photos could use up to 500. Values below 45 should give no visible imprrovement on photographs. [EXR w/ DWAa or DWAb comp.] |

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Table 21 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Orientation / `orientation` | Choice | normal | The orientation of the image data [DPX,TIFF,JPEG,HDR,FITS].<br>By default, image pixels are ordered from the top of the display to the bottom, and within each scanline, from left to right (i.e., the same ordering as English text and scan progression on a CRT). But the "Orientation" parameter can suggest that it should be displayed with a different orientation, according to the TIFF/EXIF conventions.<br>**normal**: normal (top to bottom, left to right)<br>**flop**: flipped horizontally (top to bottom, right to left)<br>**180**: rotate 180deg (bottom to top, right to left)<br>**flip**: flipped vertically (bottom to top, left to right)<br>**transposed**: transposed (left to right, top to bottom)<br>**90clockwise**: rotated 90deg clockwise (right to left, top to bottom)<br>**transverse**: transverse (right to left, bottom to top)<br>**90counter-clockwise**: rotated 90deg counter-clockwise (left to right, bottom to top) |
| Compression / `compression` | Choice | default | Compression type [TIFF,EXR,DDS,IFF,SGI,TGA]<br>Indicates the type of compression the file uses. Supported compression modes will vary from format to format. As an example, the TIFF format supports "none", "lzw", "ccittrle", "zip" (the default), "jpeg", "packbits", and the EXR format supports "none", "rle", "zip" (the default), "piz", "pxr24", "b44", "b44a", "dwaa" or "dwab".<br>**default**: Guess from the output format<br>**none**: No compression [EXR, TIFF, IFF]<br>**zip**: Zlib/Deflate compression (lossless) [EXR, TIFF, Zfile]<br>**zips**: Zlib compression (lossless), one scan line at a time [EXR]<br>**rle**: Run Length Encoding (lossless) [DPX, IFF, EXR, TGA, RLA]<br>**piz**: Piz-based wavelet compression [EXR]<br>**pxr24**: Lossy 24bit float compression [EXR]<br>**b44**: Lossy 4-by-4 pixel block compression, fixed compression rate [EXR]<br>**b44a**: Lossy 4-by-4 pixel block compression, flat fields are compressed more [EXR]<br>**dwaa**: lossy DCT based compression, in blocks of 32 scanlines. More efficient for partial buffer access. [EXR]<br>**dwab**: lossy DCT based compression, in blocks of 256 scanlines. More efficient space wise and faster to decode full frames than DWAA. [EXR]<br>**lzw**: Lempel-Ziv Welsch compression (lossless) [TIFF]<br>**ccittrle**: CCITT modified Huffman RLE (lossless) [TIFF]<br>**jpeg**: JPEG [TIFF]<br>**packbits**: Macintosh RLE (lossless) [TIFF] |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Layer(s) / `outputChannels` | Choice | Color.RGBA | Select which layer to write to the file. This is either All or a single layer. This is not yet possible to append a layer to an existing file.<br>**Color.RGBA (uk.co.thefoundry.OfxImagePlaneColour)**<br>**DisparityLeft.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityLeft)**<br>**DisparityRight.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityRight)**<br>**Backward.Motion (uk.co.thefoundry.OfxImagePlaneBackMotionVector)**<br>**Forward.Motion (uk.co.thefoundry.OfxImagePlaneForwardMotionVector)** |
| All Planes / `processAllPlanes` | Boolean | Off | When checked all planes in input will be processed and output to the same plane as in input. It is useful for example to apply a Transform effect on all planes. |
| Parts / `partSplitting` | Choice | Split Views,Layers | Defines whether to separate views/layers in different EXR parts or not. Note that multi-part files are only supported by OpenEXR >= 2<br>**Single Part (single)**: All views and layers will be in the same part, ensuring compatibility with OpenEXR 1.x<br>**Split Views (views)**: All views will have its own part, and each part will contain all layers. This will produce an EXR optimized in size that can be opened only with applications supporting OpenEXR 2<br>**Split Views,Layers (views_layers)**: Each layer of each view will have its own part. This will produce an EXR optimized for decoding speed that can be opened only with applications supporting OpenEXR 2 |
| Views / `viewsSelector` | Choice | All | Select the views to render. When choosing All, make sure the output filename does not have a %v or %V view pattern in which case each view would be written to a separate file.<br>**All**<br>**Main** |
| OpenImageIO Info... / `libraryInfo` | Button | | Display information about the underlying library. |

### 2.3.22 WritePFM node

*This documentation is for version 1.0 of WritePFM (fr.inria.openfx.WritePFM).*

### Description

Write PFM (Portable Float Map) files.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Components / `outputComponents` | Choice | RGBA | Map the input layer to this type of components before writing it to the output file.<br>**Alpha**<br>**RGB**<br>**RGBA** |
| File / `filename` | N/A | | The output image sequence/video stream file(s). The string must match the following format: path/sequenceName###.ext where the number of # (hashes) will define the number of digits to append to each file. For example path/mySequence###.jpg will be translated to path/mySequence000.jpg, path/mySequence001.jpg, etc. %d printf-like notation can also be used instead of the hashes, for example path/sequenceName%03d.ext will achieve the same than the example aforementioned. there will be at least 2 digits). The file name may not contain any # (hash) in which case it will be overridden everytimes. Views can be specified using the "long" view notation %V or the "short" notation using %v. |
| Overwrite / `overwrite` | Boolean | On | Overwrite existing files when rendering. |
| Format Type / `formatType` | Choice | Project Format | Determines which rectangle of pixels will be written in output.<br>**Input Format (input)**: Renders the pixels included in the input format<br>**Project Format (project)**: Renders the pixels included in the project format<br>**Fixed Format (fixed)**: Renders the pixels included in the format indicated by the Format parameter. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format to render<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| Input Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| File Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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Table 22 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |
| Input Premult / `inputPremult` | Choice | Premultiplied | Input is considered to have this premultiplication state.<br>Colorspace conversion is done on the input RGB data, even if it is premultiplied, and may thus give a wrong result if the input is premultiplied and the target colorspace is nonlinear.<br>This is set automatically from the input stream information, but can be adjusted if this information is wrong.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Clip Info… / `clipInfo` | Button | | Display information about the inputs |
| Frame Range / `frameRange` | Choice | Project frame range | What frame range should be rendered.<br>**Union of input ranges (union)**: The union of all inputs frame ranges will be rendered.<br>**Project frame range (project)**: The frame range delimited by the frame range of the project will be rendered.<br>**Manual (manual)**: The frame range will be the one defined by the first frame and last frame parameters. |
| First Frame / `firstFrame` | Integer | 0 | |
| Last Frame / `lastFrame` | Integer | 0 | |

### 2.3.23 WritePNG node

*This documentation is for version 1.0 of WritePNG (fr.inria.openfx.WritePNG).*

#### Description

Write PNG files.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Components / `outputComponents` | Choice | RGBA | Map the input layer to this type of components before writing it to the output file.<br>**RGB**<br>**RGBA** |
| File / `filename` | N/A | | The output image sequence/video stream file(s). The string must match the following format: path/sequenceName###.ext where the number of # (hashes) will define the number of digits to append to each file. For example path/mySequence###.jpg will be translated to path/mySequence000.jpg, path/mySequence001.jpg, etc. %d printf-like notation can also be used instead of the hashes, for example path/sequenceName%03d.ext will achieve the same than the example aforementioned. there will be at least 2 digits). The file name may not contain any # (hash) in which case it will be overridden everytimes. Views can be specified using the "long" view notation %V or the "short" notation using %v. |
| Overwrite / `overwrite` | Boolean | On | Overwrite existing files when rendering. |
| Format Type / `formatType` | Choice | Project Format | Determines which rectangle of pixels will be written in output.<br>**Input Format (input)**: Renders the pixels included in the input format<br>**Project Format (project)**: Renders the pixels included in the project format<br>**Fixed Format (fixed)**: Renders the pixels included in the format indicated by the Format parameter. |

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Table 23 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format to render<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| Input Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| File Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |
| Input Premult / `inputPremult` | Choice | Premultiplied | Input is considered to have this premultiplication state.<br>Colorspace conversion is done on the input RGB data, even if it is premultiplied, and may thus give a wrong result if the input is premultiplied and the target colorspace is nonlinear.<br>This is set automatically from the input stream information, but can be adjusted if this information is wrong.<br>**Opaque (opaque)**: The image is opaque and so has no premultiplication state, as if the alpha component in all pixels were set to the white point.<br>**PreMultiplied (premult)**: The image is premultiplied by its alpha (also called "associated alpha").<br>**UnPreMultiplied (unpremult)**: The image is unpremultiplied (also called "unassociated alpha"). |
| Clip Info… / `clipInfo` | Button | | Display information about the inputs |
| Frame Range / `frameRange` | Choice | Project frame range | What frame range should be rendered.<br>**Union of input ranges (union)**: The union of all inputs frame ranges will be rendered.<br>**Project frame range (project)**: The frame range delimited by the frame range of the project will be rendered.<br>**Manual (manual)**: The frame range will be the one defined by the first frame and last frame parameters. |
| First Frame / `firstFrame` | Integer | 0 | |
| Last Frame / `lastFrame` | Integer | 0 | |

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Table 23 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Compression / `compression` | Choice | Default | Compression used by the internal zlib library when encoding the file. This parameter is used to tune the compression algorithm.<br>Filtered data consists mostly of small values with a somewhat random distribution. In this case, the compression algorithm is tuned to compress them better. The effect of Filtered is to force more Huffman coding and less string matching; it is somewhat intermediate between Default and Huffman Only. RLE is designed to be almost as fast as Huffman Only, but give better compression for PNG image data. The strategy parameter only affects the compression ratio but not the correctness of the compressed output even if it is not set appropriately. Fixed prevents the use of dynamic Huffman codes, allowing for a simpler decoder for special applications.<br>**Default (default)**: Use this for normal data<br>**Filtered (filtered)**: Use this for data produced by a filter (or predictor)<br>**Huffman Only (huffman)**: Forces Huffman encoding only (nostring match)<br>**RLE (rle)**: Limit match distances to one (run-length encoding)<br>**Fixed (fixed)**: Prevents the use of dynamic Huffman codes, allowing for a simpler decoder for special applications |
| Compression Level / `compressionLevel` | Integer | 6 | Between 0 and 9:<br>1 gives best speed, 9 gives best compression, 0 gives no compression at all (the input data is simply copied a block at a time). Default compromise between speed and compression is 6. |
| Depth / `bitDepth` | Choice | 8-bit | The depth of the internal PNG. Only 8bit and 16bit are supported by this writer<br>**8-bit (8u)**<br>**16-bit (16u)** |
| Dithering / `enableDithering` | Boolean | On | When checked, conversion from float input buffers to 8-bit PNG will use a dithering algorithm to reduce quantization artifacts. This has no effect when writing to 16bit PNG |
| libpng Info… / `libraryInfo` | Button | | Display information about the underlying library. |

## 2.4 Draw nodes

The following sections contain documentation about every node in the Draw group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.4.1 LightWrap node

*This documentation is for version 1.0 of LightWrap (fr.inria.LightWrap).*

#### Description

LightWrap helps composite objects onto a bright background by simulating reflections from the background light on the foreground, around its edges. Input A is the foreground image and its matte, and input B the the background to use for the wrapping effect.

The output of LightWrap should then be composited over the background to give the final composite.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| A | | No |
| B | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| Diffuse / `diffuse` | Double | x: 15 y: 15 | Size of the reflections from the background to the foreground element (Intensity controls their intensity). Start by setting Diffuse to zero and adjust intensity to see what colors from the background are being reflected. Then adjust Diffuse, come back to Intensity if necessary, and balance both parameters until the result is satisfactory. |
| Intensity / `intensity` | Double | 0 | Brightness of the reflections from the background to the foreground element (Diffuse controls their size). Start by setting Diffuse to zero and adjust intensity to see what colors from the background are being reflected. Then adjust Diffuse, come back to Intensity if necessary, and balance both parameters until the result is satisfactory. |
| Generate Wrap Only / `onlyWrap` | Boolean | Off | When checked, the LightWrap in generated but is not merged with the foreground object (disables the Highlight Merge). |
| Disable luminance-Based Wrap / `disableLuma` | Boolean | Off | When checked, the LightWrap effect is created uniformly around the edged, rather than being controled by the color of the background. |
| Enable Glow / `enableGlow` | Boolean | Off | When checked, the LightWrap is not masked by the foreground object, so that the objects seems to glow. |
| FGBlur / `fgblur` | Double | x: 1 y: 1 | Size of the blur applied to the alpha channel of the foreground (i.e. the foreground matte). More blur causes more background to be added to the foreground. |

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Table 24 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| FGBlur Border Conditions / `fgblurBoundary` | Choice | Black | Border conditions of the blur applied to the alpha channel of the foreground (i.e. the foreground matte). Use "Black" in most cases, and "Nearest" if the foreground matte should be extended beyond image borders when it touches them.<br>**Black (black)**: Dirichlet boundary condition: pixel values out of the image domain are zero.<br>**Nearest (nearest)**: Neumann boundary condition: pixel values out of the image domain are those of the closest pixel location in the image domain. |
| BGBlur / `bgblur` | Double | x: 0 y: 0 | Size of the blur applied to the background before merging it with the foreground element and applying the Diffuse blur. |
| Saturation / `saturation` | Double | 1 | Color saturation of the LightWrap effect. Advanced color correction parameters are available in the ColorCorrect tab. |
| Luma Tolerance / `lumaTolerance` | Double | 0 | Luminance threshold of the LightWrap effect. Luminance values below this do not generate a LightWrap. |

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Table 24 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Highlight Merge / `highlightmerge` | Choice | plus | Merge operation between the foreground object and the background. The default operation is "plus", which produces a glow effect.<br>**atop**: Ab + B(1 - a) (a.k.a. src-atop)<br>**average**: (A + B) / 2<br>**color**: SetLum(A, Lum(B))<br>**color-burn**: darken B towards A<br>**color-dodge**: brighten B towards A<br>**conjoint-over**: A + B(1-a)/b, A if a > b<br>**copy**: A (a.k.a. src)<br>**difference**: abs(A-B) (a.k.a. absminus)<br>**disjoint-over**: A+B(1-a)/b, A+B if a+b < 1<br>**divide**: A/B, 0 if A < 0 and B < 0<br>**exclusion**: A+B-2AB<br>**freeze**: 1-sqrt(1-A)/B<br>**from**: B-A (a.k.a. subtract)<br>**geometric**: 2AB/(A+B)<br>**grain-extract**: B - A + 0.5<br>**grain-merge**: B + A - 0.5<br>**hard-light**: multiply(2*A, B) if A < 0.5, screen(2*A - 1, B) if A > 0.5<br>**hue**: SetLum(SetSat(A, Sat(B)), Lum(B))<br>**hypot**: sqrt(A*A+B*B)<br>**in**: Ab (a.k.a. src-in)<br>**luminosity**: SetLum(B, Lum(A))<br>**mask**: Ba (a.k.a dst-in)<br>**matte**: Aa + B(1-a) (unpremultiplied over)<br>**max**: max(A, B) (a.k.a. lighten only)<br>**min**: min(A, B) (a.k.a. darken only)<br>**minus**: A-B<br>**multiply**: AB, A if A < 0 and B < 0<br>**out**: A(1-b) (a.k.a. src-out)<br>**over**: A+B(1-a) (a.k.a. src-over)<br>**overlay**: multiply(A, 2*B) if B < 0.5, screen(A, 2*B - 1) if B > 0.5<br>**pinlight**: if B >= 0.5 then max(A, 2*B - 1), min(A, B * 2) else<br>**plus**: A+B (a.k.a. add)<br>**reflect**: A*A / (1 - B)<br>**saturation**: SetLum(SetSat(B, Sat(A)), Lum(B))<br>**screen**: A+B-AB if A or B <= 1, otherwise max(A, B)<br>**soft-light**: burn-in if A < 0.5, lighten if A > 0.5<br>**stencil**: B(1-a) (a.k.a. dst-out)<br>**under**: A(1-b)+B (a.k.a. dst-over)<br>**xor**: A(1-b)+B(1-a) |
| Use Constant Highlight / `useConstant` | Boolean | Off | When checked, use a constant color (specified by the Constant parameter) instead of the background for the LightWrap effect. |

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Table 24 – continued from previous page

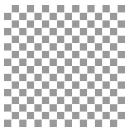
| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Constant / constantcolor | Color | r: 1 g: 1 b: 1 a: 1 | Color to use in the LightWrap effect when Use constant highlight is enabled. |
| Saturation / ColorCorrect1MasterSaturation | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / ColorCorrect1MasterContrast | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gamma / ColorCorrect1MasterGamma | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gain / ColorCorrect1MasterGain | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / ColorCorrect1MasterOffset | Color | r: 0 g: 0 b: 0 a: 0 | |
| Enable / ColorCorrect1ShadowsEnable | Boolean | On | |
| Saturation / ColorCorrect1ShadowsSaturation | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / ColorCorrect1ShadowsContrast | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gamma / ColorCorrect1ShadowsGamma | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gain / ColorCorrect1ShadowsGain | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / ColorCorrect1ShadowsOffset | Color | r: 0 g: 0 b: 0 a: 0 | |
| Enable / ColorCorrect1MidtonesEnable | Boolean | On | |
| Saturation / ColorCorrect1MidtonesSaturation | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / ColorCorrect1MidtonesContrast | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gamma / ColorCorrect1MidtonesGamma | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gain / ColorCorrect1MidtonesGain | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / ColorCorrect1MidtonesOffset | Color | r: 0 g: 0 b: 0 a: 0 | |

continues on next page

Table 24 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Enable / `ColorCorrect1HighlightsEnable` | Boolean | On | |
| Saturation / `ColorCorrect1HighlightsSaturation` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / `ColorCorrect1HighlightsContrast` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gamma / `ColorCorrect1HighlightsGamma` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gain / `ColorCorrect1HighlightsGain` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / `ColorCorrect1HighlightsOffset` | Color | r: 0 g: 0 b: 0 a: 0 | |

### 2.4.2 Noise node



*This documentation is for version 2.0 of Noise (net.sf.cimg.CImgNoise).*

#### Description

Add random noise to input stream.

Uses the 'noise' function from the CImg library, modified so that noise is reproductible at each render.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Sigma / `sigma` | Double | 0.01 | Amplitude of the random additive noise. |
| Type / `type` | Choice | Gaussian | Type of additive noise.<br>**Gaussian (gaussian)**: Gaussian noise.<br>**Uniform (uniform)**: Uniform noise.<br>**Salt & Pepper (saltnpepper)**: Salt & pepper noise.<br>**Poisson (poisson)**: Poisson noise. Image is divided by Sigma before computing noise, then remultiplied by Sigma.<br>**Rice (rice)**: Rician noise. |
| Seed / `seed` | Integer | 2000 | Random seed: change this if you want different instances to have different noise. |
| Static Seed / `staticSeed` | Boolean | Off | When enabled, the dither pattern remains the same for every frame producing a constant noise effect. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.4.3 Plasma node

*This documentation is for version 2.0 of Plasma (net.sf.cimg.CImgPlasma).*

### Description

Draw a random plasma texture (using the mid-point algorithm).

Uses the 'draw_plasma' function from the CImg library, modified so that noise is reproductible at each render..

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Alpha / `alpha` | Double | 0.002 | Alpha-parameter, in intensity units (>=0). |
| Beta / `beta` | Double | 0 | Beta-parameter, in intensity units (>=0). |
| Scale / `scale` | Integer | 8 | Noise scale, as a power of two (>=0). |
| Offset / `offset` | Double | 0 | Offset to add to the plasma noise. |
| Seed / `seed` | Integer | 2000 | Random seed: change this if you want different instances to have different noise. |
| Static Seed / `staticSeed` | Boolean | On | When enabled, the dither pattern remains the same for every frame producing a constant noise effect. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.4.4 Radial node

*This documentation is for version 2.1 of Radial (net.sf.openfx.Radial).*

### Description

Radial ramp.

The ramp is composited with the source image using the 'over' operator.

If no source is connected, this effect behaves like a generator. Its region of definition is:

- The selected format if the Extent parameter is a format.
- The project output format if Color0 is not black and transparent.
- The selected extent plus a one-pixel border if Color0 is black and transparent.

See also: https://web.archive.org/web/20220807182648/http://www.opticalenquiry.com/nuke/index.php?title=Radial

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Size | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |
| Reformat / `reformat` | Boolean | Off | Set the output format to the given extent, except if the Bottom Left or Size parameters is animated. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |

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Table 27 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / `frameRange` | Integer | min: 1 max: 1 | Time domain. |
| Softness / `softness` | Double | 1 | Softness of the radial ramp. Draws an anti-aliased disc or ellipse if zero. |
| Perceptually Linear / `plinear` | Boolean | Off | Make the radial ramp look more linear to the eye. |
| Color 0 / `color0` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Color 1 / `color1` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by the shape RoD (if Source is connected and color0=(0,0,0,0)). |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.4.5 Ramp node

*This documentation is for version 2.0 of Ramp (net.sf.openfx.Ramp).*

#### Description

Draw a ramp between 2 edges.

The ramp is composited with the source image using the 'over' operator.

See also: https://web.archive.org/web/20220807184828/http://www.opticalenquiry.com/nuke/index.php?title=Ramp

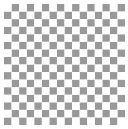
#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ramp Type / `type` | Choice | Linear | The type of interpolation used to generate the ramp<br>**Linear (linear)**: Linear ramp.<br>**PLinear (plinear)**: Perceptually linear ramp in Rec.709.<br>**Ease-in (easein)**: Catmull-Rom spline, smooth start, linear end (a.k.a. smooth0).<br>**Ease-out (easeout)**: Catmull-Rom spline, linear start, smooth end (a.k.a. smooth1).<br>**Smooth (smooth)**: Traditional smoothstep ramp.<br>**None (none)**: No color gradient. |
| Point 0 / `point0` | Double | x: 100 y: 100 | |
| Color 0 / `color0` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Point 1 / `point1` | Double | x: 100 y: 200 | |
| Color 1 / `color1` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.4.6 Rand node



*This documentation is for version 1.0 of Rand (net.sf.openfx.Noise).*

### Description

Generate a random field of noise. The field does not resample if you change the resolution or density (you can animate the density without pixels randomly changing).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Default | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |
| Reformat / `reformat` | Boolean | Off | Set the output format to the given extent, except if the Bottom Left or Size parameters is animated. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |

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Table 29 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / `frameRange` | Integer | min: 1<br>max: 1 | Time domain. |
| Output Components / `outputComponents` | Choice | RGB | Components in the output<br>**RGBA**<br>**RGB**<br>**XY**<br>**Alpha** |
| Noise / `noise` | Double | 1 | How much noise to make. |
| Density / `density` | Double | 1 | The density from 0 to 1 of the pixels. A lower density mean fewer random pixels. |
| seed / `seed` | Integer | 2000 | Random seed: change this if you want different instances to have different noise. |
| Static Seed / `staticSeed` | Boolean | Off | When enabled, the seed is not combined with the frame number, and thus the effect is the same for all frames for a given seed number. |

### 2.4.7 Rectangle node

*This documentation is for version 2.1 of Rectangle (net.sf.openfx.Rectangle).*

#### Description

Draw a rectangle.

The rectangle is composited with the source image using the 'over' operator.

If no source is connected, this effect behaves like a generator. Its region of definition is:

- The selected format if the Extent parameter is a format.
- The project output format if Color0 is not black and transparent.
- The selected extent plus a one-pixel border if Color0 is black and transparent.

See also: https://web.archive.org/web/20220807191757/http://www.opticalenquiry.com/nuke/index.php?title=Rectangle

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Size | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |
| Reformat / `reformat` | Boolean | Off | Set the output format to the given extent, except if the Bottom Left or Size parameters is animated. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |

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Table 30 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / `frameRange` | Integer | min: 1 max: 1 | Time domain. |
| Corner Radius / `cornerRadius` | Double | x: 0 y: 0 | If non-zero, this is the radius of the round corners. |
| Softness / `softness` | Double | 0 | Softness of the rectangle edges. Draws an anti-aliased rectangle if zero |
| Color 0 / `color0` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Color 1 / `color1` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by the shape RoD (if Source is connected and color0=(0,0,0,0)). |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.4.8 Roto node

*This documentation is for version 1.0 of Roto (fr.inria.built-in.Roto).*

#### Description

Create masks and shapes

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Bg | | Yes |
| Bg2 | | Yes |
| Bg3 | | Yes |
| Bg4 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Opacity / `opacity` | Double | 1 | Controls the opacity of the selected shape(s). |
| Color / `color` | Color | r: 1 g: 1 b: 1 | The color of the shape. This parameter is used when the output components are set to RGBA. |

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Table 31 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Life Time / `lifeTime` | Choice | All | Controls the life-time of the shape/stroke<br>**All**: All frames<br>**Single**: Only for the specified frame<br>**From start**: From the start of the sequence up to the specified frame<br>**To end**: From the specified frame to the end of the sequence<br>**Custom**: Use the Activated parameter animation to control the life-time of the shape/stroke using keyframes |
| Activated / `activated` | Boolean | On | Controls whether the selected shape(s) should be rendered or not.Note that you can animate this parameter so you can activate/deactivate the shape throughout the time. |
| Feather / `feather` | Double | 1.5 | Controls the distance of feather (in pixels) to add around the selected shape(s) |
| Feather fall-off / `featherFallOff` | Double | 1 | Controls the rate at which the feather is applied on the selected shape(s). |
| Source / `sourceType` | Choice | background | Source color used for painting the stroke when the Reveal/Clone tools are used.<br>**foreground**: The painted result at this point in the hierarchy.<br>**background**: The original image unpainted connected to bg.<br>**background 2**: The original image unpainted connected to bg1.<br>**background 3**: The original image unpainted connected to bg2.<br>**background 4**: The original image unpainted connected to bg3.<br>**background 5**: The original image unpainted connected to bg4.<br>**background 6**: The original image unpainted connected to bg5.<br>**background 7**: The original image unpainted connected to bg6.<br>**background 8**: The original image unpainted connected to bg7.<br>**background 9**: The original image unpainted connected to bg8.<br>**background 10**: The original image unpainted connected to bg9. |
| Translate / `cloneTranslate` | Double | x: 0 y: 0 | |
| Rotate / `cloneRotate` | Double | 0 | |
| Scale / `cloneScale` | Double | x: 1 y: 1 | |
| Uniform / `cloneUniform` | Boolean | On | |
| Skew X / `cloneSkewx` | Double | 0 | |
| Skew Y / `cloneSkewy` | Double | 0 | |
| Skew Order / `cloneSkewOrder` | Choice | XY | **XY**<br>**YX** |
| Center / `cloneCenter` | Double | x: 0.5 y: 0.5 | |

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Table 31 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Reset Center / `resetCloneCenter` | Button | | Reset the clone transform center |
| Reset Transform / `resetCloneTransform` | Button | | Reset the clone transform to an identity |
| Filter / `cloneFilter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse**: (nearest neighbor / box) Use original values.<br>**Bilinear**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic**: (cubic spline) Some smoothing.<br>**Keys**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon**: Some smoothing, plus medium sharpening (*).<br>**Rifman**: Some smoothing, plus significant sharpening (*).<br>**Mitchell**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Black Outside / `blackOutside` | Boolean | On | Fill the area outside the source image with black |
| Clone time offset / `timeOffset` | Integer | 0 | When the Clone tool is used, this determines depending on the time offset mode the source frame to clone. When in absolute mode, this is the frame number of the source, when in relative mode, this is an offset relative to the current frame. |
| Mode / `timeOffsetMode` | Choice | Relative | Time offset mode: when in absolute mode, this is the frame number of the source, when in relative mode, this is an offset relative to the current frame.<br>**Relative**<br>**Absolute** |
| Brush Size / `brushSize` | Double | 25 | This is the diameter of the brush in pixels. Shift + drag on the viewer to modify this value |
| Brush Spacing / `brushSpacing` | Double | 0.1 | Spacing between stamps of the paint brush |
| Brush Hardness / `brushHardness` | Double | 0.2 | Fall off of the brush effect from the center to the edge |
| Brush effect / `brushEffect` | Double | 15 | The strength of the effect |
| Opacity / `pressureOpacity` | Boolean | On | Alters the opacity of the paint brush proportionate to changes in pen pressure |
| Size / `pressureSize` | Boolean | Off | Alters the size of the paint brush proportionate to changes in pen pressure |
| Hardness / `pressureHardness` | Boolean | Off | Alters the hardness of the paint brush proportionate to changes in pen pressure |
| Build-up / `buildUp` | Boolean | Off | When checked, the paint stroke builds up when painted over itself |
| Visible portion / `strokeVisiblePortion` | Double | start: 0 end: 1 | Defines the range of the stroke that should be visible: 0 is the start of the stroke and 1 the end. |
| Translate / `translate` | Double | x: 0 y: 0 | |
| Rotate / `rotate` | Double | 0 | |

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Table 31 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scale / `scale` | Double | x: 1 y: 1 | |
| Uniform / `uniform` | Boolean | On | |
| Skew X / `skewx` | Double | 0 | |
| Skew Y / `skewy` | Double | 0 | |
| Skew Order / `skewOrder` | Choice | XY | **XY**<br>**YX** |
| Center / `center` | Double | x: 0.5 y: 0.5 | |
| Reset Center / `resetTransformCenter` | Button | | Reset the transform center |
| Interactive / `RotoTransformInteractive` | Boolean | On | When check, modifying the transform will directly render the shape in the viewer. When unchecked, modifications are applied when releasing the mouse button. |
| Extra Matrix / `extraMatrix` | Double | x: 1 y: 0 z: 0 w: 0 : 1 : 0 : 0 : 0 : 1 | This matrix gets concatenated to the transform resulting from the parameter above. |
| Reset Transform / `resetTransform` | Button | | Reset the transform to an identity |

### 2.4.9 RotoPaint node

*This documentation is for version 1.0 of RotoPaint (fr.inria.built-in.RotoPaint).*

#### Description

RotoPaint is a vector based free-hand drawing node that helps for tasks such as rotoscoping, matting, etc…

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Bg | | Yes |
| Bg2 | | Yes |
| Bg3 | | Yes |
| Bg4 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Opacity / `opacity` | Double | 1 | Controls the opacity of the selected shape(s). |
| Color / `color` | Color | r: 1 g: 1 b: 1 | The color of the shape. This parameter is used when the output components are set to RGBA. |
| Life Time / `lifeTime` | Choice | Single | Controls the life-time of the shape/stroke<br>**All**: All frames<br>**Single**: Only for the specified frame<br>**From start**: From the start of the sequence up to the specified frame<br>**To end**: From the specified frame to the end of the sequence<br>**Custom**: Use the Activated parameter animation to control the life-time of the shape/stroke using keyframes |
| Frame / `lifeTimeFrame` | Integer | 0 | Use this to specify the frame when in mode Single/From start/To end |
| Feather / `feather` | Double | 1.5 | Controls the distance of feather (in pixels) to add around the selected shape(s) |
| Feather fall-off / `featherFallOff` | Double | 1 | Controls the rate at which the feather is applied on the selected shape(s). |
| Source / `sourceType` | Choice | background | Source color used for painting the stroke when the Reveal/Clone tools are used.<br>**foreground**: The painted result at this point in the hierarchy.<br>**background**: The original image unpainted connected to bg.<br>**background 2**: The original image unpainted connected to bg1.<br>**background 3**: The original image unpainted connected to bg2.<br>**background 4**: The original image unpainted connected to bg3.<br>**background 5**: The original image unpainted connected to bg4.<br>**background 6**: The original image unpainted connected to bg5.<br>**background 7**: The original image unpainted connected to bg6.<br>**background 8**: The original image unpainted connected to bg7.<br>**background 9**: The original image unpainted connected to bg8.<br>**background 10**: The original image unpainted connected to bg9. |
| Translate / `cloneTranslate` | Double | x: 0 y: 0 | |
| Rotate / `cloneRotate` | Double | 0 | |
| Scale / `cloneScale` | Double | x: 1 y: 1 | |
| Uniform / `cloneUniform` | Boolean | On | |
| Skew X / `cloneSkewx` | Double | 0 | |
| Skew Y / `cloneSkewy` | Double | 0 | |

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Table 32 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Skew Order / `cloneSkewOrder` | Choice | XY | **XY**<br>**YX** |
| Center / `cloneCenter` | Double | x: 0.5<br>y: 0.5 | |
| Reset Center / `resetCloneCenter` | Button | | Reset the clone transform center |
| Reset Transform / `resetCloneTransform` | Button | | Reset the clone transform to an identity |
| Filter / `cloneFilter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse**: (nearest neighbor / box) Use original values.<br>**Bilinear**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic**: (cubic spline) Some smoothing.<br>**Keys**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon**: Some smoothing, plus medium sharpening (*).<br>**Rifman**: Some smoothing, plus significant sharpening (*).<br>**Mitchell**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Black Outside / `blackOutside` | Boolean | On | Fill the area outside the source image with black |
| Clone time offset / `timeOffset` | Integer | 0 | When the Clone tool is used, this determines depending on the time offset mode the source frame to clone. When in absolute mode, this is the frame number of the source, when in relative mode, this is an offset relative to the current frame. |
| Mode / `timeOffsetMode` | Choice | Relative | Time offset mode: when in absolute mode, this is the frame number of the source, when in relative mode, this is an offset relative to the current frame.<br>**Relative**<br>**Absolute** |
| Brush Size / `brushSize` | Double | 25 | This is the diameter of the brush in pixels. Shift + drag on the viewer to modify this value |
| Brush Spacing / `brushSpacing` | Double | 0.1 | Spacing between stamps of the paint brush |
| Brush Hardness / `brushHardness` | Double | 0.2 | Fall off of the brush effect from the center to the edge |
| Brush effect / `brushEffect` | Double | 15 | The strength of the effect |
| Opacity / `pressureOpacity` | Boolean | On | Alters the opacity of the paint brush proportionate to changes in pen pressure |
| Size / `pressureSize` | Boolean | Off | Alters the size of the paint brush proportionate to changes in pen pressure |
| Hardness / `pressureHardness` | Boolean | Off | Alters the hardness of the paint brush proportionate to changes in pen pressure |

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Table 32 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Build-up / `buildUp` | Boolean | Off | When checked, the paint stroke builds up when painted over itself |
| Visible portion / `strokeVisiblePortion` | Double | start: 0 end: 1 | Defines the range of the stroke that should be visible: 0 is the start of the stroke and 1 the end. |
| Translate / `translate` | Double | x: 0 y: 0 | |
| Rotate / `rotate` | Double | 0 | |
| Scale / `scale` | Double | x: 1 y: 1 | |
| Uniform / `uniform` | Boolean | On | |
| Skew X / `skewx` | Double | 0 | |
| Skew Y / `skewy` | Double | 0 | |
| Skew Order / `skewOrder` | Choice | XY | **XY**<br>**YX** |
| Center / `center` | Double | x: 0.5 y: 0.5 | |
| Reset Center / `resetTransformCenter` | Button | | Reset the transform center |
| Interactive / `RotoTransformInteractive` | Boolean | On | When check, modifying the transform will directly render the shape in the viewer. When unchecked, modifications are applied when releasing the mouse button. |
| Extra Matrix / `extraMatrix` | Double | x: 1 y: 0 z: 0 w: 0 : 1 : 0 : 0 : 0 : 1 | This matrix gets concatenated to the transform resulting from the parameter above. |
| Reset Transform / `resetTransform` | Button | | Reset the transform to an identity |

### 2.4.10 SeGrain node

*This documentation is for version 1.0 of SeGrain (net.sf.openfx.SeGrain).*

#### Description

Adds synthetic grain.

Push "presets" to get predefined types of grain, these are the correct size for 2K scans.

Note that some presets require applying per-channel Blur to the output (see the Presets documentation).

You can also adjust the sliders to match a sample piece of grain. Find a sample with a rather constant background, blur it to remove the grain, and use as input to this. View with a wipe in the viewer so you can make a match. It helps to view and match each of the red, green, blue separately.

See also https://web.archive.org/web/20210728000722/opticalenquiry.com/nuke/index.php?title=Integration

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Seed / `grainSeed` | Double | 134 | Change this value to make different instances of this operator produce different noise. |
| Static Seed / `staticSeed` | Boolean | Off | When enabled, the seed is not combined with the frame number, and thus the effect is the same for all frames for a given seed number. |
| Presets / `grainPresets` | Choice | Kodak 5248 | Presets for common types of film.<br>**Kodak 5248**<br>**Kodak 5279**<br>**Kodak FX214**<br>**Kodak GT5274**<br>**Kodak 5217**<br>**Kodak 5218**<br>**Kodak 5219**<br>**Kodak 5201**<br>**Kodak 5213**: Combine with Blur(R,size=1), Blur(G,size=1), Blur(B,size=1.1)<br>**Kodak 5245**: Combine with Blur(G,size=1.2), Blur(B,size=1.15)<br>**Digital Noise**<br>**Other** |
| All / `grainSizeAll` | Double | 1 | Global factor on grain size. Useful if working with scans which are not 2K (the preset sizes are computed for 2K scans). |
| Red / `grainSizeRed` | Double | 3.3 | Red grain size (in pixels). |
| Green / `grainSizeGreen` | Double | 2.9 | Green grain size (in pixels). |
| Blue / `grainSizeBlue` | Double | 2.5 | Blue grain size (in pixels). |
| Red / `grainIrregularityRed` | Double | 0.6 | Red grain irregularity. |
| Green / `grainIrregularityGreen` | Double | 0.6 | Green grain irregularity. |
| Blue / `grainIrregularityBlue` | Double | 0.6 | Blue grain irregularity. |
| Red / `grainIntensityRed` | Double | 0.42 | Amount of red grain to add to a white pixel. |
| Green / `grainIntensityGreen` | Double | 0.46 | Amount of green grain to add to a white pixel. |
| Blue / `grainIntensityBlue` | Double | 0.85 | Amount of blue grain to add to a white pixel. |

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Table 33 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Correlation / `colorCorr` | Double | 0 | This parameter specifies the apparent colorfulness of the grain. The value represents how closely the grain in each channel overlaps. This means that negative color correlation values decrease the amount of overlap, which increases the apparent color of the grain, while positive values decrease its colorfulness. |
| Black / `grainBlack` | Color | r: 0 g: 0 b: 0 | Amount of grain to add everywhere. |
| Minimum / `grainMinimum` | Color | r: 0 g: 0 b: 0 | Minimum black level. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.4.11 SeNoise node

*This documentation is for version 1.0 of SeNoise (net.sf.openfx.SeNoise).*

#### Description

Generate noise.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Replace / `replace` | Boolean | Off | Clear the selected channel(s) before drawing into them. |
| Colored Noise / `noiseColored` | Boolean | Off | If checked, generate independent noise patterns for the red, green and blue channels, and set alpha to 1. |
| Noise Size / `noiseSize` | Double | x: 350 y: 350 | Size of noise in pixels, corresponding to its lowest frequency. |
| Z0 / `noiseZ` | Double | 0 | Z coordinate on the noise at frame=0. The noise pattern is different for every integer value of Z, so this can be used as a random seed. |
| Z Slope / `noiseZSlope` | Double | 0 | Z is computed as Z = Z0 + frame * Z_slope. 0 means a constant noise, 1 means a different noise pattern at every frame, values close to 0 mean a noise that varies slowly with time. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Noise Type / `noiseType` | Choice | FBM | Kind of noise.<br>**Cell Noise (cell)**: Cell noise generates a field of constant colored cubes based on the integer location. This is the same as the prman cellnoise function. You may want to set xRotate and yRotate to 0 in the Transform tab to get square cells.<br>**Noise (noise)**: Noise is a random function that smoothly blends between samples at integer locations. This is Ken Perlin's original noise function.<br>**FBM (fbm)**: FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the "Noise" function. The total number of frequencies is controlled by octaves. The lacunarity is the spacing between the frequencies - a value of 2 means each octave is twice the previous frequency. The gain controls how much each frequency is scaled relative to the previous frequency.<br>**Turbulence (turbulence)**: turbulence is a variant of fbm where the absolute value of each noise term is taken. This gives a more billowy appearance.<br>**Voronoi (voronoi)**: Voronoi is a cellular noise pattern. It is a jittered variant of cellnoise. The type parameter describes different variants of the noise function. The jitter param controls how irregular the pattern is (jitter = 0 is like ordinary cellnoise). The fbm* params can be used to distort the noise field. When fbmScale is zero (the default), there is no distortion. The remaining params are the same as for the fbm function. NOTE: This does not necessarily return [0,1] value, because it can return arbitrary distance. |
| Voronoi Type / `voronoiType` | Choice | Cell | Different variants of the Voronoi noise function.<br>**Cell (cell)**<br>**Type 2 (type2)**<br>**Type 3 (type3)**<br>**Type 4 (type4)**<br>**Type 5 (type5)** |
| Jitter / `jitter` | Double | 0.5 | The jitter param controls how irregular the pattern is (jitter = 0 is like ordinary cellnoise). |
| FBM Scale / `fbmScale` | Double | 0 | The fbm* params can be used to distort the noise field. When fbmScale is zero (the default), there is no distortion. |
| Octaves / `fbmOctaves` | Integer | 6 | The total number of frequencies is controlled by octaves. |
| Lacunarity / `fbmLacunarity` | Double | 2 | The lacunarity is the spacing between the frequencies - a value of 2 means each octave is twice the previous frequency. |
| Gain / `fbmGain` | Double | 0.5 | The gain controls how much each frequency is scaled relative to the previous frequency. |
| Translate / `transformTranslate` | Double | x: 0 y: 0 | Translation along the x and y axes in pixels. Can also be adjusted by clicking and dragging the center handle in the Viewer. |
| Rotate / `transformRotate` | Double | 0 | Rotation angle in degrees around the Center. Can also be adjusted by clicking and dragging the rotation bar in the Viewer. |
| Scale / `transformScale` | Double | x: 1 y: 1 | Scale factor along the x and y axes. Can also be adjusted by clicking and dragging the outer circle or the diameter handles in the Viewer. |

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Table 34 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Uniform / transformScaleUniform | Boolean | Off | Use the X scale for both directions |
| Skew X / transformSkewX | Double | 0 | Skew along the x axis. Can also be adjusted by clicking and dragging the skew bar in the Viewer. |
| Skew Y / transformSkewY | Double | 0 | Skew along the y axis. |
| Skew Order / transformSkewOrder | Choice | XY | The order in which skew transforms are applied: X then Y, or Y then X.<br>**XY**<br>**YX** |
| Amount / transformAmount | Double | 1 | Amount of transform to apply. 0 means the transform is identity, 1 means to apply the full transform. |
| Center / transformCenter | Double | x: 0.5 y: 0.5 | Center of rotation and scale. |
| Reset Center / transformResetCenter | Button | | Reset the position of the center to the center of the input region of definition |
| Interactive Update / transformInteractive | Boolean | On | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / hidpi | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| X Rotate / XRotate | Double | 27 | Rotation about the X axis in the 3D noise space (X,Y,Z). Noise artifacts may appear if it is 0 or a multiple of 90. |
| Y Rotate / YRotate | Double | 27 | Rotation about the Y axis in the 3D noise space (X,Y,Z). Noise artifacts may appear if it is 0 or a multiple of 90. |
| Ramp Type / rampType | Choice | None | The type of interpolation used to generate the ramp<br>**Linear (linear)**: Linear ramp.<br>**PLinear (plinear)**: Perceptually linear ramp in Rec.709.<br>**Ease-in (easein)**: Catmull-Rom spline, smooth start, linear end (a.k.a. smooth0).<br>**Ease-out (easeout)**: Catmull-Rom spline, linear start, smooth end (a.k.a. smooth1).<br>**Smooth (smooth)**: Traditional smoothstep ramp.<br>**None (none)**: No color gradient. |
| Point 0 / rampPoint0 | Double | x: 100 y: 100 | |
| Color 0 / rampColor0 | Color | r: 0 g: 0 b: 0 a: 0 | |
| Point 1 / rampPoint1 | Double | x: 100 y: 200 | |
| Color 1 / rampColor1 | Color | r: 1 g: 1 b: 1 a: 1 | |
| Interactive Update / rampInteractive | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| Invert Mask / maskInvert | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / mix | Double | 1 | Mix factor between the original and the transformed image. |

### 2.4.12 Text node

*This documentation is for version 6.14 of Text (net.fxarena.openfx.Text).*

#### Description

Advanced text generator node using Pango and Cairo.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Rotate / `rotate` | Double | 0 | Rotation angle in degrees around the Center. Can also be adjusted by clicking and dragging the rotation bar in the Viewer. |
| Scale / `scale` | Double | x: 1 y: 1 | Scale factor along the x and y axes. Can also be adjusted by clicking and dragging the outer circle or the diameter handles in the Viewer. |
| Uniform / `uniform` | Boolean | Off | Use the X scale for both directions |
| Skew X / `skewX` | Double | 0 | Skew along the x axis. Can also be adjusted by clicking and dragging the skew bar in the Viewer. |
| Skew Y / `skewY` | Double | 0 | Skew along the y axis. |
| Skew Order / `skewOrder` | Choice | XY | The order in which skew transforms are applied: X then Y, or Y then X.<br>**XY**<br>**YX** |
| Amount / `transformAmount` | Double | 1 | Amount of transform to apply. 0 means the transform is identity, 1 means to apply the full transform. |
| Center / `center` | Double | x: 0.5 y: 0.5 | Center of rotation and scale. |
| Reset Center / `resetCenter` | Button | | Reset the position of the center to the center of the input region of definition |
| Interactive Update / `interactive` | Boolean | On | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Transform / `transform` | Boolean | On | Use transform overlay for text position. |
| Auto size / `autoSize` | Boolean | Off | Set canvas sized based on text. This will disable word wrap, custom canvas size and circle effect. Transform functions should also not be used in combination with this feature. |

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Table 35 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Center Interact / `centerInteract` | Boolean | Off | Center the text in the interact. |
| Canvas size / `canvas` | Integer | x: 0 y: 0 | Set canvas size, default (0) is project format. Disabled if auto size is active. |
| Markup / `markup` | Boolean | Off | Pango Text Attribute Markup Language, https://developer.gnome.org/pango/stable/PangoMarkupFormat.html . Colors don't work if Circle/Arc effect is used. |
| Text File / `file` | N/A | | Use text from filename. |
| Subtitle File / `subtitle` | N/A | | Load and animate a subtitle file (SRT). |
| Frame Rate / `fps` | Double | 24 | The frame rate of the project, for use with subtitles. |
| Text / `text` | String | Enter text | The text that will be drawn. |
| Justify / `justify` | Boolean | Off | Text justify. |
| Wrap / `wrap` | Choice | None | Word wrap. Disabled if auto size and/or custom position is enabled.<br>**None**<br>**Word**<br>**Char**<br>**Word-Char** |
| Horizontal align / `align` | Choice | Left | Horizontal text align. Custom position and auto size must be disabled and word wrap must be enabled (any option except none) to get anything else than left align.<br>**Left**<br>**Right**<br>**Center** |
| Vertical align / `valign` | Choice | Top | Vertical text align. Disabled if custom position and/or auto size is enabled.<br>**Top**<br>**Center**<br>**Bottom** |
| Select font / `name` | Choice | | Select font family to be used.<br><br>This parameter is only used to set font family in the 'font' parameter. This parameter does not support animation, use the 'font' parameter for animation. |
| Custom font(s) / `custom` | N/A | | Add custom font(s) to the font list. This can be a font file or a directory with fonts.<br><br>If you want a portable project copy all used fonts to [Project]/fonts (or similar) and reference them here. |

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Table 35 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Font family / `font` | String | Arial | The name of the font to be used.<br><br>This parameter can also be used to animate the font family. |
| Font size / `size` | Integer | 64 | The height of the characters to render in pixels. Should not be used for animation, see the scale param. |
| Font color / `color` | Color | r: 1 g: 1 b: 1 a: 1 | The fill color of the text to render. |
| Background Color / `backgroundColor` | Color | r: 0 g: 0 b: 0 a: 0 | The fill color of the background. |
| Letter spacing / `letterSpace` | Integer | 0 | Spacing between letters. Disabled if markup is used. |
| Hint style / `hintStyle` | Choice | Default | This controls whether to fit font outlines to the pixel grid, and if so, whether to optimize for fidelity or contrast.<br>**Default**<br>**None**<br>**Slight**<br>**Medium**<br>**Full** |
| Hint metrics / `hintMetrics` | Choice | Default | This controls whether metrics are quantized to integer values in device units.<br>**Default**<br>**Off**<br>**On** |
| Antialiasing / `antialiasing` | Choice | Default | This specifies the type of antialiasing to do when rendering text.<br>**Default**<br>**None**<br>**Gray**<br>**Subpixel** |
| Subpixel / `subpixel` | Choice | Default | The subpixel order specifies the order of color elements within each pixel on the dets the antialiasing mode for the fontisplay device when rendering with an antialiasing mode.<br>**Default**<br>**RGB**<br>**BGR**<br>**VRGB**<br>**VBGR** |

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Table 35 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Style / `style` | Choice | Normal | Font style.<br>**Normal**<br>**Bold**<br>**Italic** |
| Weight / `weight` | Choice | Normal | The weight field specifies how bold or light the font should be.<br>**Thin**<br>**Ultra light**<br>**Light**<br>**Semi light**<br>**Book**<br>**Normal**<br>**Medium**<br>**Semi bold**<br>**Bold**<br>**Ultra bold**<br>**Heavy**<br>**Ultra heavy** |
| Stretch / `stretch` | Choice | Normal | Width of the font relative to other designs within a family.<br>**Ultra condensed**<br>**Extra condensed**<br>**Condensed**<br>**Semi condensed**<br>**Normal**<br>**Semi expanded**<br>**Expanded**<br>**Extra expanded**<br>**Ultra expanded** |
| Stroke size / `strokeSize` | Double | 0 | Stroke size. |
| Stroke color / `strokeColor` | Color | r: 1 g: 0 b: 0 a: 1 | The fill color of the stroke to render. |
| Stroke dash length / `strokeDash` | Integer | 0 | The length of the dashes. |
| Stroke dash pattern / `strokeDashPattern` | Double | x: 1 y: 0 z: 0 | An array specifying alternate lengths of on and off stroke portions. |
| Circle radius / `circleRadius` | Double | 0 | Circle radius. Effect only works if auto size is disabled. |
| Circle Words / `circleWords` | Integer | 10 | X times text in circle. |
| Arc Radius / `arcRadius` | Double | 100 | Arc path radius (size of the path). The Arc effect is an experimental feature. Effect only works if auto size is disabled. |
| Arc Angle / `arcAngle` | Double | 0 | Arc Angle, set to 360 for a full circle. The Arc effect is an experimental feature. Effect only works if auto size is disabled. |

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Table 35 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scroll X / `scrollX` | Double | 0 | Scroll canvas X. Only works if Transform, AutoSize, Circle and Arc is disabled/not used. |
| Scroll Y / `scrollY` | Double | 0 | Scroll canvas Y. Only works if Transform, AutoSize, Circle and Arc is disabled/not used. |
| Frame Range / `frameRange` | Integer | min: 1 max: 1 | Time domain. |

## 2.5 Time nodes

The following sections contain documentation about every node in the Time group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.5.1 AppendClip node

*This documentation is for version 1.0 of AppendClip (net.sf.openfx.AppendClip).*

#### Description

Append one clip to another.

See also: https://web.archive.org/web/20220627030729/http://www.opticalenquiry.com/nuke/index.php?title=AppendClip

#### Inputs

| Input | Description | Optional |
|---|---|---|
| 1 | | Yes |
| 2 | | Yes |
| 3 | | Yes |
| 4 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Fade In / `fadeIn` | Integer | 0 | Number of frames to fade in from black at the beginning of the first clip. |
| Fade Out / `fadeOut` | Integer | 0 | Number of frames to fade out to black at the end of the last clip. |
| Cross Dissolve / `crossDissolve` | Integer | 0 | Number of frames to cross-dissolve between clips. |
| First Frame / `firstFrame` | Integer | 1 | Frame to start the first clip at. |
| Last Frame / `lastFrame` | Integer | 0 | Last frame of the assembled clip (read-only). |
| Update / `updateLastFrame` | Button | | Update lastFrame. |

### 2.5.2 Deinterlace node

*This documentation is for version 1.0 of Deinterlace (net.sf.openfx.Deinterlace).*

#### Description

Deinterlace input stream.

The following deinterlacing algorithms are supported:

- Weave: This is what 100fps.com calls "do nothing". Other names: "disabled" or "no deinterlacing". Should be used for PsF content.
- Blend: Blender (full resolution). Each line of the picture is created as the average of a line from the odd and a line from the even half-pictures. This ignores the fact that they are supposed to be displayed at different times.
- Bob: Doubler. Display each half-picture like a full picture, by simply displaying each line twice. Preserves temporal resolution of interlaced video.
- Discard: Only display one of the half-pictures, discard the other. Other name: "single field". Both temporal and vertical spatial resolutions are halved. Can be used for slower computers or to give interlaced video movie-like look with characteristic judder.
- Linear: Doubler. Bob with linear interpolation: instead of displaying each line twice, line 2 is created as the average of line 1 and 3, etc.
- Mean: Blender (half resolution). Display a half-picture that is created as the average of the two original half-pictures.
- Yadif: Interpolator (Yet Another DeInterlacing Filter) from MPlayer by Michael Niedermayer (http://www.mplayerhq.hu). It checks pixels of previous, current and next frames to re-create the missed field by some local adaptive method (edge-directed interpolation) and uses spatial check to prevent most artifacts.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Field Order / `fieldOrder` | Choice | HD=upper,SD=lower | Interlaced field order<br>**Lower field first (lower)**: Lower field first.<br>**Upper field first (upper)**: Upper field first<br>**HD=upper,SD=lower (auto)**: Automatic. |

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Table 37 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parity / `parity` | Choice | Lower | Field to interpolate.<br>**Lower (lower)**: Interpolate lower field.<br>**Upper (upper)**: Interpolate upper field. |
| Yadif Processing Mode / `yadifMode` | Choice | Temporal & spatial | Mode of checking fields<br>**Temporal & spatial (temporalspatial)**: Temporal and spatial interlacing check (default).<br>**Temporal only (temporal)**: Skips spatial interlacing check. |

### 2.5.3 FrameBlend node

*This documentation is for version 2.0 of FrameBlend (net.sf.openfx.FrameBlend).*

#### Description

Blend frames of the input clip.

If a foreground matte is connected, only pixels with a negative or zero foreground value are taken into account, so that the foreground is not mixed with the background.

The number of values used to compute each pixel can be output to the alpha channel.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |
| FgM | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Range / `frameRange` | Integer | first: -5<br>last: 0 | Range of frames which are to be blended together. Frame range is absolute if "absolute" is checked, else relative. The last frame is always included, and then one frame out of frameInterval within this interval. |
| Absolute / `absolute` | Boolean | Off | Use an absolute frame range. If the frame range is not animated or is not an expression, then all output images will be the same. |
| Input Range / `inputRange` | Button | | Set the frame range to the input range. This can be used, combined with a foreground matte, to produce a clean background plate. |

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Table 38 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Interval / `frameInterval` | Integer | 1 | Interval (in frames) between frames to process. 1 means to process every frame in the range. The first frame processed is the lower bound of the range. Can be used to reduce processing time or memory usage. |
| Operation / `operation` | Choice | Average | The operation used to compute the output image.<br>**Average (average)**: Output is the average of selected frames.<br>**Min (min)**: Output is the minimum of selected frames.<br>**Max (max)**: Output is the maximum of selected frames.<br>**Sum (sum)**: Output is the sum/addition of selected frames.<br>**Product (product)**: Output is the product/multiplication of selected frames.<br>**Over (over)**: Output is the 'over' composition of selected frames. |
| Decay / `decay` | Double | 0 | Before applying the blending operation, frame t is multiplied by (1-decay)^(last-t). |
| Output Count to Alpha / `outputCount` | Boolean | Off | Output image count at each pixel to alpha (input must have an alpha channel). |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.5.4 FrameHold node

*This documentation is for version 1.0 of FrameHold (net.sf.openfx.FrameHold).*

#### Description

Hold a given frame for the input clip indefinitely, or use a subsample of the input frames and hold them for several frames.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| First Frame / `firstFrame` | Integer | 0 | Reference input frame (the frame to hold if increment is 0). |
| Increment / `increment` | Integer | 0 | If increment is 0, only the "firstFrame" will be held. If it is positive, every multiple of "increment" plus "firstFrame" will be held for "increment" frames afterwards (before if it is negative). |

### 2.5.5 FrameRange node

*This documentation is for version 1.0 of FrameRange (net.sf.openfx.FrameRange).*

#### Description

Set the frame range for a clip. Useful in conjunction with AppendClipOFX.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Range / `frameRange` | Integer | first: 1<br>last: 1 | Output frame range. |
| Reset / `reset` | Button | | Resets the frame range to its initial value. |

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Table 40 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Before / `before` | Choice | Black | What the plugin should return for frames before the first frame.<br>**Original (original)**: Return the original frame from the source, even if it is out of the frame range.<br>**Hold (hold)**: Return the nearest frame within the frame range.<br>**Black (black)**: Return an empty frame.<br>**Loop (loop)**: Substitutes an equal number of frames, effectively creating a clip loop.<br>**Bounce (loop)**: Substitutes a reversed equal number of frames, creating a clip bounce. |
| After / `after` | Choice | Black | What the plugin should return for frames after the last frame.<br>**Original (original)**: Return the original frame from the source, even if it is out of the frame range.<br>**Hold (hold)**: Return the nearest frame within the frame range.<br>**Black (black)**: Return an empty frame.<br>**Loop (loop)**: Substitutes an equal number of frames, effectively creating a clip loop.<br>**Bounce (loop)**: Substitutes a reversed equal number of frames, creating a clip bounce. |

### 2.5.6 NoTimeBlur node

*This documentation is for version 1.0 of NoTimeBlur (net.sf.openfx.NoTimeBlurPlugin).*

#### Description

Rounds fractional frame numbers to integers. This can be used to avoid computing non-integer frame numbers, and to discretize motion (useful for animated objects). This plug-in is usually inserted upstream from TimeBlur.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Rounding / `rounding` | Choice | rint | Rounding type/operation to use when blocking fractional frames.<br>**rint**: Round to the nearest integer value.<br>**floor**: Round dound to the nearest integer value.<br>**ceil**: Round up to the nearest integer value.<br>**none**: Do not round. |

### 2.5.7 Retime node

*This documentation is for version 1.0 of Retime (net.sf.openfx.Retime).*

#### Description

Change the timing of the input clip.

See also: https://web.archive.org/web/20220627032808/http://www.opticalenquiry.com/nuke/index.php?title=Retime

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Reverse input / `reverseInput` | Boolean | Off | Reverse the order of the input frames so that last one is first |
| Speed / `speed` | Double | 1 | How much to change the speed of the input clip. To determine which input frame is taken at a given time, the speed is integrated from the beginning of the source frame range to the given time, so that speed can be animated to locally accelerate (speed > 1), decelerate (speed < 1) or reverse (speed < 0) the source clip. Note that this is is not the same as the speed parameter of the Nuke Retime node, which just multiplies the speed value at the current time by the time to obtain the source frame number. |
| Warp / `warp` | Parametric | | Curve that maps input range (after applying speed) to the output range. A low positive slope slows down the input clip, and a negative slope plays it backwards. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Linear | How input images are combined to compute the output image.<br>**None (none)**: Do not interpolate, ask for images with fractional time to the input effect. Useful if the input effect can interpolate itself.<br>**Nearest (nearest)**: Pick input image with nearest integer time.<br>**Linear (linear)**: Blend the two nearest images with linear interpolation. |

### 2.5.8 SlitScan node

*This documentation is for version 1.0 of SlitScan (net.sf.openfx.SlitScan).*

#### Description

Apply per-pixel retiming: the time is computed for each pixel from the retime function, which can be either a horizontal ramp, a vertical ramp, or a retime map.

The default retime function corresponds to a horizontal slit: it is a vertical ramp, which is a linear function of y, which is 0 at the center of the bottom image line, and 1 at the center of the top image line. Optionally, a vertical slit may be used (0 at the center of the leftmost image column, 1 at the center of the rightmost image column), or the optional single-channel "Retime Map" input may also be used.

This plugin requires to render many frames on input, which may require a lot of memory.

Note that the results may be on higher quality if the video is slowed fown (e.g. using slowmoVideo)

The parameters are:

- retime function (default = horizontal slit)
- offset for the retime function (default = 0)
- gain for the retime function (default = -10)
- absolute, a boolean indicating that the time map gives absolute frames rather than relative frames
- frame range, only used if the retime function is given by a retime map, because the actual frame range cannot be guessed without inspecting the retime map content (default = -10..0). If "absolute" is checked, this frame range is absolute, else it is relative to the current frame
- filter to handle time offsets that "fall between" frames. They can be mapped to the nearest frame, or interpolated between the nearest frames (corresponding to a shutter of 1 frame).

References:

- An Informal Catalogue of Slit-Scan Video Artworks and Research, Golan Levin, http://www.flong.com/texts/lists/slit_scan/

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Retime Map | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Retime Function / `retimeFunction` | Choice | Horizontal Slit | The function that gives, for each pixel in the image, its time. The default retime function corresponds to a horizontal slit: it is a vertical ramp (a linear function of y) which is 0 at the center of the bottom image line, and 1 at the center of the top image line. Optionally, a vertical slit may be used (0 at the center of the leftmost image column, 1 at the center of the rightmost image column), or the optional single-channel "Retime Map" input may also be used.<br>**Horizontal Slit (horizontalslit)**: A vertical ramp (a linear function of y) which is 0 at the center of the bottom image line, and 1 at the center of the top image line.<br>**Vertical Slit (verticalslit)**: A horizontal ramp (alinear function of x) which is 0 at the center of the leftmost image line, and 1 at the center of the rightmost image line.<br>**Retime Map (retimemap)**: The single-channel image from the "Retime Map" input (zero if not connected). |
| Retime Offset / `retimeOffset` | Double | 0 | Offset to the retime map. |
| Retime Gain / `retimeGain` | Double | -10 | Gain applied to the retime map (after offset). With the horizontal or vertical slits, to get one line or column per frame you should use respectively (height-1) or (width-1). |
| Absolute / `retimeAbsolute` | Boolean | Off | If checked, the retime map contains absolute time, if not it is relative to the current frame. |
| Max. Frame Range / `frameRange` | Integer | min: -10 max: 0 | Maximum input frame range to fetch images from (may be relative or absolute, depending on the "absolute" parameter). Only used if the Retime Map is used and connected. |
| Filter / `filter` | Choice | Nearest | How input images are combined to compute the output image.<br>**Nearest (nearest)**: Pick input image with nearest integer time.<br>**Linear (linear)**: Blend the two nearest images with linear interpolation. |

### 2.5.9 TimeBlur node

*This documentation is for version 1.0 of TimeBlur (net.sf.openfx.TimeBlur).*

#### Description

Blend frames of the input clip over the shutter range.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Divisions / `division` | Integer | 10 | Number of time samples along the shutter time. The first frame is always at the start of the shutter range, and the shutter range is divided by divisions. The frame corresponding to the end of the shutter range is not included. If divisions=4, Shutter=1, Shutter Offset=Centered, this leads to blending the frames at t-0.5, t-0.25, t, t+0.25. |
| Shutter / `shutter` | Double | 0.5 | Controls how long (in frames) the shutter should remain open. |
| Shutter Offset / `shutterOffset` | Choice | Start | Controls when the shutter should be open/closed. Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0).<br>**Centered (centered)**: Centers the shutter around the frame (from t-shutter/2 to t+shutter/2)<br>**Start (start)**: Open the shutter at the frame (from t to t+shutter)<br>**End (end)**: Close the shutter at the frame (from t-shutter to t)<br>**Custom (custom)**: Open the shutter at t+shuttercustomoffset (from t+shuttercustomoffset to t+shuttercustomoffset+shutter) |
| Custom Offset / `shutterCustomOffset` | Double | 0 | When custom is selected, the shutter is open at current time plus this offset (in frames). Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0). |

### 2.5.10 TimeOffset node

*This documentation is for version 1.0 of TimeOffset (net.sf.openfx.timeOffset).*

### Description

Move the input clip forward or backward in time. This can also reverse the order of the input frames so that last one is first.

See also https://web.archive.org/web/20220627025738/http://www.opticalenquiry.com/nuke/index.php?title=TimeOffset

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

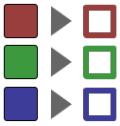
### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Time Offset (Frames) / `timeOffset` | Integer | 0 | Offset in frames (frame f from the input will be at f+offset) |
| Reverse Input / `reverseInput` | Boolean | Off | Reverse the order of the input frames so that last one is first |
| Clip to Input Range / `clipToInputRange` | Boolean | Off | Never ask for frames outside of the input frame range. |

## 2.6 Channel nodes

The following sections contain documentation about every node in the Channel group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.6.1 Shuffle node



*This documentation is for version 3.0 of Shuffle (net.sf.openfx.ShufflePlugin).*

### Description

Rearrange channels from one or two inputs and/or convert to different bit depth or components. No colorspace conversion is done (mapping is linear, even for 8-bit and 16-bit types).

### Inputs

| Input | Description | Optional |
|---|---|---|
| B | | Yes |
| A | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `outputLayer` | Choice | Color.RGBA | The layer where the result of the Shuffle operation is output.<br>**Color.RGBA (uk.co.thefoundry.OfxImagePlaneColour)**<br>**DisparityLeft.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityLeft)**<br>**DisparityRight.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityRight)**<br>**Backward.Motion (uk.co.thefoundry.OfxImagePlaneBackMotionVector)**<br>**Forward.Motion (uk.co.thefoundry.OfxImagePlaneForwardMotionVector)** |
| Output Components / `outputComponents` | Choice | RGBA | Select what types of components the plug-in should output, this has an effect only when the Output Layer is set to the Color layer. This controls what should be the components for the Color Layer: Alpha, RGB or RGBA.<br>**RGBA (rgba)**: Output RGBA components.<br>**RGB (rgb)**: Output RGB components.<br>**Alpha (alpha)**: Output alpha channel. |
| Output Premult / `outputPremult` | Choice | Unpre-multi-plied | Set the premultiplication metadata on the output. This does not modify the data itself. The premultiplication metadata will flow downstream so that further down effects know what kind of data to expect. By default it should be set to Unpremultiplied and you should always provide the Shuffle node unpremultiplied data. Providing alpha-premultiplied data in input of the Shuffle may produce wrong results because of the potential loss of the associated alpha channel.<br>**Opaque**<br>**Premultiplied**<br>**Unpremultiplied** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| R / `outputR` | Choice | B.Color.R | Input channel for the output red channel.<br>**A.Color.R (A.uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input A<br>**A.Color.G (A.uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input A<br>**A.Color.B (A.uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input A<br>**A.Color.A (A.uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input A<br>**0**: 0 constant channel<br>**1**: 1 constant channel<br>**B.Color.R (B.uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input B<br>**B.Color.G (B.uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input B<br>**B.Color.B (B.uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input B<br>**B.Color.A (B.uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input B |
| G / `outputG` | Choice | B.Color.G | Input channel for the output green channel.<br>**A.Color.R (A.uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input A<br>**A.Color.G (A.uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input A<br>**A.Color.B (A.uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input A<br>**A.Color.A (A.uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input A<br>**0**: 0 constant channel<br>**1**: 1 constant channel<br>**B.Color.R (B.uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input B<br>**B.Color.G (B.uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input B<br>**B.Color.B (B.uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input B<br>**B.Color.A (B.uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input B |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| B / `outputB` | Choice | B.Color.B | Input channel for the output blue channel.<br>**A.Color.R (A.uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input A<br>**A.Color.G (A.uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input A<br>**A.Color.B (A.uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input A<br>**A.Color.A (A.uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input A<br>**0**: 0 constant channel<br>**1**: 1 constant channel<br>**B.Color.R (B.uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input B<br>**B.Color.G (B.uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input B<br>**B.Color.B (B.uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input B<br>**B.Color.A (B.uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input B |
| A / `outputA` | Choice | B.Color.A | Input channel for the output alpha channel.<br>**A.Color.R (A.uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input A<br>**A.Color.G (A.uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input A<br>**A.Color.B (A.uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input A<br>**A.Color.A (A.uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input A<br>**0**: 0 constant channel<br>**1**: 1 constant channel<br>**B.Color.R (B.uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input B<br>**B.Color.G (B.uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input B<br>**B.Color.B (B.uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input B<br>**B.Color.A (B.uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input B |
| Set GBA From R / `setGBAFromR` | Boolean | On | If checked, setting the R output channel from the GUI to the R channel of an input also sets the G, B and A output channels from the same plane. |
| Clip Info… / `clipInfo` | Button | | Display information about the inputs. |

## 2.7 Color nodes

The following sections contain documentation about every node in the Color group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.7.1 Add node



*This documentation is for version 2.0 of Add (net.sf.openfx.AddPlugin).*

#### Description

Add a constant to the selected channels.

See also: https://web.archive.org/web/20220627013304/http://www.opticalenquiry.com/nuke/index.php?title=Add

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value / `value` | Color | r: 0 g: 0 b: 0 a: 0 | Constant to add to the selected channels. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.2 Clamp node

*This documentation is for version 2.0 of Clamp (net.sf.openfx.Clamp).*

### Description

Clamp the values of the selected channels.

A special use case for the Clamp plugin is to generate a binary mask image (i.e. each pixel is either 0 or 1) by thresholding an image. Let us say one wants all input pixels whose value is above or equal to some threshold value to become 1, and all values below this threshold to become 0. Set the "Minimum" value to the threshold, set the "Maximum" to any value strictly below the threshold (e.g. 0 if the threshold is positive), and check "Enable MinClampTo" and "Enable MaxClampTo" while keeping the default values for "MinClampTo" (0.0) and "MaxClampTop" (1.0). The result is a binary mask image. To create a non-binary mask, with softer edges, either blur the output of Clamp, or use the Grade plugin instead, setting the "Black Point" and "White Point" to values close to the threshold, and checking the "Clamp Black" and "Clamp White" options.

See also: https://web.archive.org/web/20220627024614/http://www.opticalenquiry.com/nuke/index.php?title=Clamp

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Minimum / `minimum` | Color | r: 0 g: 0 b: 0 a: 0 | If enabled, all values that are lower than this number are set to this value, or to the minClampTo value if minClampTo is enabled. |
| Enable Minimum / `minimumEnable` | Boolean | On | Whether to clamp selected channels to a minimum value. |
| Maximum / `maximum` | Color | r: 1 g: 1 b: 1 a: 1 | If enabled, all values that are higher than this number are set to this value, or to the maxClampTo value if maxClampTo is enabled. |
| Enable Maximum / `maximumEnable` | Boolean | On | Whether to clamp selected channels to a maximum value. |
| MinClampTo / `minClampTo` | Color | r: 0 g: 0 b: 0 a: 0 | The value to which values below minimum are clamped when minClampTo is enabled. Setting this to a custom color helps visualizing the clamped areas or create graphic effects. |
| Enable MinClampTo / `minClampToEnable` | Boolean | Off | When enabled, all values below minimum are set to the minClampTo value.<br>When disabled, all values below minimum are clamped to the minimum value. |
| MaxClampTo / `maxClampTo` | Color | r: 1 g: 1 b: 1 a: 1 | The value to which values above maximum are clamped when maxClampTo is enabled. Setting this to a custom color helps visualizing the clamped areas or create graphic effects. |
| Enable MaxClampTo / `maxClampToEnable` | Boolean | Off | When enabled, all values above maximum are set to the maxClampTo value.<br>When disabled, all values above maximum are clamped to the maximum value. |

continues on next page

Table 48 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.3 ClipTest node



*This documentation is for version 2.0 of ClipTest (net.sf.openfx.ClipTestPlugin).*

#### Description

Draw zebra stripes on all pixels outside of the specified range.

See also: https://web.archive.org/web/20220627024754/http://www.opticalenquiry.com/nuke/index.php?title=Evaluating_Color#The_ClipTest_node

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Lower / `lower` | Color | r: 0 g: 0 b: 0 a: 0 | Highlight pixels lower than this value. |
| Upper / `upper` | Color | r: 1 g: 1 b: 1 a: 1 | Highlight pixels higher than this value. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.4 ColorCorrect node

*This documentation is for version 2.1 of ColorCorrect (net.sf.openfx.ColorCorrectPlugin).*

#### Description

Adjusts the saturation, contrast, gamma, gain and offset of an image.

The ranges of the shadows, midtones and highlights are controlled by the curves in the "Ranges" tab.

The Contrast adjustment works using the formula: Output = (Input/0.18)^Contrast*0.18.

See also:

- http://opticalenquiry.com/nuke/index.php?title=ColorCorrect
- https://compositormathematic.wordpress.com/2013/07/06/gamma-contrast/

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Saturation / `MasterSaturation` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / `MasterContrast` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gamma / `MasterGamma` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gain / `MasterGain` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / `MasterOffset` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Enable / `ShadowsEnable` | Boolean | On | When checked, Shadows correction is enabled. |
| Saturation / `ShadowsSaturation` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / `ShadowsContrast` | Color | r: 1 g: 1 b: 1 a: 1 | |

continues on next page

Table 50 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Gamma / ShadowsGamma | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gain / ShadowsGain | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / ShadowsOffset | Color | r: 0 g: 0 b: 0 a: 0 | |
| Enable / MidtonesEnable | Boolean | On | When checked, Midtones correction is enabled. |
| Saturation / MidtonesSaturation | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / MidtonesContrast | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gamma / MidtonesGamma | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gain / MidtonesGain | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / MidtonesOffset | Color | r: 0 g: 0 b: 0 a: 0 | |
| Enable / HighlightsEnable | Boolean | On | When checked, Highlights correction is enabled. |
| Saturation / HighlightsSaturation | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / HighlightsContrast | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gamma / HighlightsGamma | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gain / HighlightsGain | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / HighlightsOffset | Color | r: 0 g: 0 b: 0 a: 0 | |
| Range / range | Double | min: 0 max: 1 | Expected range for input values. Within this range, a lookup table is used for faster computation. |
| Tone Ranges / toneRanges | Parametric | Shadow: Highlight: | Tone ranges lookup table |

continues on next page

Table 50 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Luminance Math / `luminanceMath` | Choice | Rec. 709 | Formula used to compute luminance from RGB values (used for saturation adjustments).<br>**Rec. 709 (rec709)**: Use Rec. 709 (0.2126r + 0.7152g + 0.0722b).<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 (0.2627r + 0.6780g + 0.0593b).<br>**ACES AP0 (acesap0)**: Use ACES AP0 (0.3439664498r + 0.7281660966g + -0.0721325464b).<br>**ACES AP1 (acesap1)**: Use ACES AP1 (0.2722287168r + 0.6740817658g + 0.0536895174b).<br>**CCIR 601 (ccir601)**: Use CCIR 601 (0.2989r + 0.5866g + 0.1145b).<br>**Average (average)**: Use average of r, g, b.<br>**Max (max)**: Use max or r, g, b. |
| Clamp Black / `clampBlack` | Boolean | On | All colors below 0 on output are set to 0. |
| Clamp White / `clampWhite` | Boolean | Off | All colors above 1 on output are set to 1. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.5 ColorLookup node

*This documentation is for version 1.1 of ColorLookup (net.sf.openfx.ColorLookupPlugin).*

#### Description

Apply a parametric lookup curve with the possibility to adjust each channel separately.

The master curve is combined with the red, green and blue curves, but not with the alpha curve.

Different algorithms are available when applying the master curve, which are selectable using the "Master Curve Mode" parameter.

Computation is faster for values that are within the given range, so it is recommended to set the Range parameter if the input range goes beyond [0,1].

Note that you can easily do color remapping by setting Source and Target colors and clicking "Set RGB" or "Set RGBA" below.

This will add control points on the curve to match the target from the source. You can add as many point as you like.

This is very useful for matching color of one shot to another, or adding custom colors to a black and white ramp.

Optionally, the RGB histogram or a color ramp can be displayed in the background of the lookup curves.

See also: https://web.archive.org/web/20221208230906/http://opticalenquiry.com/nuke/index.php?title=ColorLookup

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Range / `range` | Double | min: 0 max: 1 | Expected range for input values. Within this range, a lookup table is used for faster computation. |
| Lookup Table / `lookupTable` | Parametric | master: red: green: blue: alpha: | Colour lookup table. The master curve is combined with the red, green and blue curves, but not with the alpha curve. |
| Display / `backgroundDisplay` | Choice | Color Ramp | Display a color ramp or a histogram behind the curves.<br>**None (none)**: No background display.<br>**Color Ramp (colorramp)**: Display a color ramp.<br>**RGB Histogram (histogram)**: Display the input histogram. Press "Refresh Histogram" to recompute the histogram. |
| Update Histogram / `updateHistogram` | Button | | Update the histogram from the input at current time. |
| Source / `source` | Color | r: 0 g: 0 b: 0 a: 0 | Source color for newly added points (x coordinate on the curve). |
| Target / `target` | Color | r: 0 g: 0 b: 0 a: 0 | Target color for newly added points (y coordinate on the curve). |
| Set Master / `setMaster` | Button | | Add a new control point mapping source to target to the master curve (the relative luminance is computed using the 'Luminance Math' parameter). |
| Set RGB / `setRGB` | Button | | Add a new control point mapping source to target to the red, green, and blue curves. |
| Set RGBA / `setRGBA` | Button | | Add a new control point mapping source to target to the red, green, blue and alpha curves. |
| Set A / `setA` | Button | | Add a new control point mapping source to target to the alpha curve |

continues on next page

Table 51 – continued from previous page

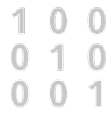
| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Master Curve Mode / `masterCurveMode` | Choice | Standard | Algorithm that will be used for the master curve. The curve mode will have a strong effect on the appearance of colors, especially if you use a contrast-enhancing curve (S-curve). This can be used for creative effect, but can for some purposes or styles cause undesired color changes depending which mode you choose. Choose a mode that suits your specific taste and needs for the photo at hand. More information can be found at http://rawpedia.rawtherapee.com/Exposure<br>**Standard (standard)**: The marster curve is applied independently to R, G and B channels. The drawback of this mode is that e.g. considering an S-curve shape to get more contrast, an orange color with a high value of red and green and a low value of blue will tend to shift toward yellow, because the red and green channel will be raised, while the blue one will be lowered.<br>**Weighted Standard (weightedstandard)**: You can use this method to limit the color shift of the standard curve, even if it won't suppress it entirely.<br>**Film-Like (filmlike)**: The film-like curve provides a result highly similar to the standard type (that is strong saturation increase with increased contrast), but the RGB-HSV hue is kept constant - that is, there are less color-shift problems. This curve type was designed by Adobe as a part of DNG and is thus the one used by Adobe Camera Raw and Lightroom.<br>**Luminance (luminance)**: Each component of the pixel is boosted by the same factor so color and saturation is kept stable, that is the result is very true to the original color. However contrast-increasing curves can still lead to a slightly desaturated look. First the relative luminance value of a pixel is obtained, then the curve is applied to that value, the multiplication factor between before and after luminance is calculated, and then this factor is applied to each R, G and B component. The formula used to compute the luminance can be selected using the "luminanceMath" parameter. |
| Luminance Math / `luminanceMath` | Choice | Rec. 709 | Formula used to compute luminance from RGB values (only used by 'Set Master').<br>**Rec. 709 (rec709)**: Use Rec. 709 (0.2126r + 0.7152g + 0.0722b).<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 (0.2627r + 0.6780g + 0.0593b).<br>**ACES AP0 (acesap0)**: Use ACES AP0 (0.3439664498r + 0.7281660966g + -0.0721325464b).<br>**ACES AP1 (acesap1)**: Use ACES AP1 (0.2722287168r + 0.6740817658g + 0.0536895174b).<br>**CCIR 601 (ccir601)**: Use CCIR 601 (0.2989r + 0.5866g + 0.1145b).<br>**Average (average)**: Use average of r, g, b.<br>**Max (max)**: Use max or r, g, b. |
| Clamp Black / `clampBlack` | Boolean | Off | All colors below 0 on output are set to 0. |
| Clamp White / `clampWhite` | Boolean | Off | All colors above 1 on output are set to 1. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |

continues on next page

Table 51 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.6 ColorMatrix node




*This documentation is for version 2.0 of ColorMatrix (net.sf.openfx.ColorMatrixPlugin).*

#### Description

Multiply the RGBA channels by an arbitrary 4x4 matrix.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Red / `outputRed` | Color | r: 1 g: 0 b: 0 a: 0 | values for red output component. |
| Output Green / `outputGreen` | Color | r: 0 g: 1 b: 0 a: 0 | values for green output component. |
| Output Blue / `outputBlue` | Color | r: 0 g: 0 b: 1 a: 0 | values for blue output component. |
| Output Alpha / `outputAlpha` | Color | r: 0 g: 0 b: 0 a: 1 | values for alpha output component. |
| Clamp Black / `clampBlack` | Boolean | On | All colors below 0 on output are set to 0. |
| Clamp White / `clampWhite` | Boolean | Off | All colors above 1 on output are set to 1. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |

continues on next page

Table 52 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.7 ColorSuppress node

*This documentation is for version 1.0 of ColorSuppress (net.sf.openfx.ColorSuppress).*

#### Description

Remove a color or tint from an image.

The effect can either modify the color and/or extract the amount of color and store it in the alpha channel. It can be used to fix the despill or extract a mask from a color.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Red / `redSuppress` | Double | 0 | Fraction of red to suppress. |
| Green / `greenSuppress` | Double | 0 | Fraction of green to suppress. |
| Blue / `blueSuppress` | Double | 0 | Fraction of blue to suppress. |
| Cyan / `cyanSuppress` | Double | 0 | Fraction of cyan to suppress. |
| Magenta / `magentaSuppress` | Double | 0 | Fraction of magenta to suppress. |
| Yellow / `yellowSuppress` | Double | 0 | Fraction of yellow to suppress. |
| Output / `outputMode` | Choice | Image | Suppress mode.<br>**Image (image)**: Suppress color from the image.<br>**Alpha (alpha)**: Only store the suppress mask in the Alpha channel.<br>**Image and Alpha (both)**: Suppress the color from the image and store the suppress mask in the Alpha channel. |
| Preserve Luminance / `preserveLuma` | Boolean | Off | Preserve image luminosity. |

continues on next page

Table 53 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Luminance Math / `luminanceMath` | Choice | Rec. 709 | Formula used to compute luminance from RGB values.<br>**Rec. 709 (rec709)**: Use Rec. 709 (0.2126r + 0.7152g + 0.0722b).<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 (0.2627r + 0.6780g + 0.0593b).<br>**ACES AP0 (acesap0)**: Use ACES AP0 (0.3439664498r + 0.7281660966g + -0.0721325464b).<br>**ACES AP1 (acesap1)**: Use ACES AP1 (0.2722287168r + 0.6740817658g + 0.0536895174b).<br>**CCIR 601 (ccir601)**: Use CCIR 601 (0.2989r + 0.5866g + 0.1145b).<br>**Average (average)**: Use average of r, g, b.<br>**Max (max)**: Use max or r, g, b. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.8 Equalize node

*This documentation is for version 2.0 of Equalize (net.sf.cimg.CImgEqualize).*

#### Description

Equalize histogram of pixel values.

To equalize image brightness only, use the HistEQCImg plugin.

Uses the 'equalize' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| NbLevels / `nb_levels` | Integer | 4096 | Number of histogram levels used for the equalization. |
| Min Value / `min_value` | Double | 0 | Minimum pixel value considered for the histogram computation. All pixel values lower than min_value will not be counted. |
| Max Value / `max_value` | Double | 1 | Maximum pixel value considered for the histogram computation. All pixel values higher than max_value will not be counted. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.7.9 Gamma node



*This documentation is for version 2.0 of Gamma (net.sf.openfx.GammaPlugin).*

### Description

Apply gamma function to the selected channels. The actual function is pow(x,1/max(1e-8,value)).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value / `value` | Color | r: 1 g: 1 b: 1 a: 1 | Gamma value to apply to the selected channels. |
| Invert / `invert` | Boolean | Off | Invert the gamma transform. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.10 Grade node

*This documentation is for version 2.0 of Grade (net.sf.openfx.GradePlugin).*

#### Description

Modify the tonal spread of an image from the white and black points.

This node can also be used to match colors of 2 images: The darkest and lightest points of the target image are converted to black and white using the blackpoint and whitepoint values. These 2 values are then moved to new values using the black(for dark point) and white(for white point). You can also apply multiply/offset/gamma for other color fixing you may need.

Here is the formula used:

A = multiply * (white - black) / (whitepoint - blackpoint)

B = offset + black - A * blackpoint

output = pow(A * input + B, 1 / gamma).

A special use for Grade is to generate a mask image with soft edges by thresholding an input image. Set the "Black Point" and "White Point" to values just below and just above the threshold, and check the "Clamp Black" and "Clamp White" options. If a binary mask containing only 0 and 1 is preferred, the Clamp plugin can be used instead.

See also: https://web.archive.org/web/20220627014345/http://www.opticalenquiry.com/nuke/index.php?title=Grade and https://web.archive.org/web/20210728000722/http://opticalenquiry.com/nuke/index.php?title=Integration#Matching_colorr

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Black Point / `blackPoint` | Color | r: 0 g: 0 b: 0 a: 0 | Set the color of the darkest pixels in the image. |
| White Point / `whitePoint` | Color | r: 1 g: 1 b: 1 a: 1 | Set the color of the brightest pixels in the image. |
| Lift / `black` | Color | r: 0 g: 0 b: 0 a: 0 | Colors corresponding to the blackpoint are set to this value. |
| Gain / `white` | Color | r: 1 g: 1 b: 1 a: 1 | Colors corresponding to the whitepoint are set to this value. |

continues on next page

Table 56 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Multiply / `multiply` | Color | r: 1 g: 1 b: 1 a: 1 | Multiplies the result by this value. |
| Offset / `offset` | Color | r: 0 g: 0 b: 0 a: 0 | Adds this value to the result (this applies to black and white). |
| Gamma / `gamma` | Color | r: 1 g: 1 b: 1 a: 1 | Final gamma correction. Negative values are not affected by gamma. |
| Normalize / `normalize` | Button | | Normalize the image by setting the white point and black point from the minimum and maximum values of the input. |
| Reverse / `reverse` | Boolean | Off | Apply the inverse correction. Useful to apply the inverse of a Grade downstream: copy-and-paste or clone the upstream node, and invert the downstream one. |
| Clamp Black / `clampBlack` | Boolean | On | All colors below 0 on output are set to 0. |
| Clamp White / `clampWhite` | Boolean | Off | All colors above 1 on output are set to 1. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.11 HSIToRGB node

*This documentation is for version 1.0 of HSIToRGB (net.sf.openfx.HSIToRGB).*

#### Description

Convert from HSI color model (hue, saturation, intensity, as defined by Gonzalez and Woods in 1992) to linear RGB. H is in degrees, S and I are in the same units as RGB. No gamma correction is applied to RGB after conversion.

The HSI colour space (hue, saturation and intensity) attempts to produce a more intuitive representation of colour. The I axis represents the luminance information. The H and S axes are polar coordinates on the plane orthogonal to I. H is the angle, specified such that red is at zero, green at 120 degrees, and blue at 240 degrees. Hue thus represents what humans implicitly understand as colour. S is the magnitude of the colour vector projected in the plane orthogonal to I, and so represents the difference between pastel colours (low saturation) and vibrant colours (high saturation). The main drawback of this colour space is that hue is undefined if saturation is zero, making error propagation in transformations from the RGB colour space more complicated.

It should also be noted that, although the HSI colour space may be more intuitive, is not "perceptual", in the sense that small displacements of equal size in different parts of the colour space will be perceived by human observers as changes of different magnitude. Attempts have been made to define such colour spaces: CIE-LAB and CIE-LUV are two examples.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

## 2.7.12 HSLToRGB node

*This documentation is for version 1.0 of HSLToRGB (net.sf.openfx.HSLToRGB).*

### Description

Convert from HSL color model (hue, saturation, lightness, as defined by Joblove and Greenberg in 1978) to linear RGB. H is in degrees, S and L are in the same units as RGB. No gamma correction is applied to RGB after conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

## 2.7.13 HSVToRGB node

*This documentation is for version 1.0 of HSVToRGB (net.sf.openfx.HSVToRGB).*

### Description

Convert from HSV color model (hue, saturation, value, as defined by A. R. Smith in 1978) to linear RGB. H is in degrees, S and V are in the same units as RGB. No gamma correction is applied to RGB after conversion.

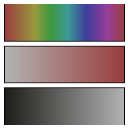
### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

## 2.7.14 HSVTool node



*This documentation is for version 1.0 of HSVTool (net.sf.openfx.HSVToolPlugin).*

### Description

Adjust hue, saturation and brightness, or perform color replacement.

Color replacement:

Set the srcColor and dstColor parameters. The range of the replacement is determined by the three groups of parameters: Hue, Saturation and Brightness.

Color adjust:

Use the Rotation of the Hue parameter and the Adjustment of the Saturation and Lightness. The ranges and falloff parameters allow for more complex adjustments.

Hue keyer:

Set the outputAlpha parameter (the last one) to All (the default is Hue), and use a viewer to display the Alpha channel. First, set the Range parameter of the Hue parameter set and then work down the other Ranges parameters, tuning with the range Falloff and Adjustment parameters.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Src Analysis Rectangle / `enableRectangle` | Boolean | Off | Enable the rectangle interact for analysis of Src and Dst colors and ranges. |
| Bottom Left / `bottomLeft` | Double | x: 0.25 y: 0.25 | Coordinates of the bottom left corner of the rectangle |
| Size / `size` | Double | w: 0.5 h: 0.5 | Width and height of the rectangle |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Set Src from Rectangle / `setSrcFromRectangle` | Button | | Set the Src color and ranges and the adjustments from the colors of the source image within the selection rectangle and the Dst Color. |
| Src Color / `srcColor` | Color | r: 0 g: 0 b: 0 | Source color for replacement. Changing this parameter sets the hue, saturation and brightness ranges for this color, and sets the fallofs to default values. |
| Dst Color / `dstColor` | Color | r: 0 g: 0 b: 0 | Destination color for replacement. Changing this parameter sets the hue rotation, and saturation and brightness adjustments. Should be set after Src Color. |
| Hue Range / `hueRange` | Double | : 0 : 360 | Range of color hues that are modified (in degrees). Red is 0, green is 120, blue is 240. The affected hue range is the smallest interval. For example, if the range is (12, 348), then the selected range is red plus or minus 12 degrees. Exception: if the range width is exactly 360, then all hues are modified. |
| Hue Rotation / `hueRotation` | Double | 0 | Rotation of color hues (in degrees) within the range. |
| Hue Rotation Gain / `hueRotationGain` | Double | 1 | Factor to be applied to the rotation of color hues (in degrees) within the range. A value of 0 will set all values within range to a constant (computed at the center of the range), and a value of 1 will add hueRotation to all values within range. |
| Hue Range Rolloff / `hueRangeRolloff` | Double | 0 | Interval (in degrees) around Hue Range, where hue rotation decreases progressively to zero. |
| Saturation Range / `saturationRange` | Double | : 0 : 1 | Range of color saturations that are modified. |
| Saturation Adjustment / `saturationAdjustment` | Double | 0 | Adjustment of color saturations within the range. Saturation is clamped to zero to avoid color inversions. |
| Saturation Adjustment Gain / `saturationAdjustmentGain` | Double | 1 | Factor to be applied to the saturation adjustment within the range. A value of 0 will set all values within range to a constant (computed at the center of the range), and a value of 1 will add saturationAdjustment to all values within range. |
| Saturation Range Rolloff / `saturationRangeRolloff` | Double | 0 | Interval (in degrees) around Saturation Range, where saturation rotation decreases progressively to zero. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Brightness Range / `brightnessRange` | Double | : 0 : 1 | Range of color brightness that are modified. |
| Brightness Adjustment / `brightnessAdjustment` | Double | 0 | Adjustment of color brightness within the range. |
| Brightness Adjustment Gain / `brightnessAdjustmentGain` | Double | 1 | Factor to be applied to the brightness adjustment within the range. A value of 0 will set all values within range to a constant (computed at the center of the range), and a value of 1 will add brightnessAdjustment to all values within range. |
| Brightness Range Rolloff / `brightnessRangeRolloff` | Double | 0 | Interval (in degrees) around Brightness Range, where brightness rotation decreases progressively to zero. |
| Clamp Black / `clampBlack` | Boolean | On | All colors below 0 on output are set to 0. |
| Clamp White / `clampWhite` | Boolean | Off | All colors above 1 on output are set to 1. |
| Output Alpha / `outputAlpha` | Choice | Hue | Output alpha channel. This can either be the source alpha, one of the coefficients for hue, saturation, brightness, or a combination of those. If it is not source alpha, the image on output are unpremultiplied, even if input is premultiplied.<br>**Source (source)**: Alpha channel is kept unmodified.<br>**Hue (hue)**: Set Alpha to the Hue modification mask.<br>**Saturation (saturation)**: Set Alpha to the Saturation modification mask.<br>**Brightness (brightness)**: Alpha is set to the Brightness mask.<br>**min(Hue,Saturation) (minhuesaturation)**: Alpha is set to min(Hue mask,Saturation mask)<br>**min(Hue,Brightness) (minhuebrightness)**: Alpha is set to min(Hue mask,Brightness mask)<br>**min(Saturation,Brightness) (minsaturationbrightness)**: Alpha is set to min(Saturation mask,Brightness mask)<br>**min(all) (min)**: Alpha is set to min(Hue mask,Saturation mask,Brightness mask) |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.15 HistEQ node

*This documentation is for version 2.0 of HistEQ (net.sf.cimg.CImgHistEQ).*

### Description

Equalize histogram of brightness values.

Uses the 'equalize' function from the CImg library on the 'V' channel of the HSV decomposition of the image.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

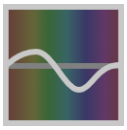
### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| NbLevels / `nb_levels` | Integer | 4096 | Number of histogram levels used for the equalization. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.7.16 HueCorrect node



*This documentation is for version 2.0 of HueCorrect (net.sf.openfx.HueCorrect).*

### Description

Apply hue-dependent color adjustments using lookup curves.

Hue and saturation are computed from the the source RGB values. Depending on the hue value, the various adjustment values are computed, and then applied:

hue: hue shift.

sat: saturation gain. This modification is applied last.

lum: luminance gain

red: red gain

green: green gain

blue: blue gain

r_sup: red suppression. If r > min(g,b), r = min(g,b) + r_sup * (r-min(g,b))

g_sup: green suppression

b_sup: blue suppression

sat_thrsh: if source saturation is below this value, do not apply the lum, red, green, blue gains. Above this value, apply gain progressively.

The 'Luminance Mix' parameter may be used to restore partially or fully the original luminance (luminance is computed using the 'Luminance Math' parameter).

See also: https://web.archive.org/web/20220627022150/http://www.opticalenquiry.com/nuke/index.php?title=HueCorrect

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Hue Curves / `hue` | Parametric | hue:<br>sat:<br>lum:<br>red:<br>green:<br>blue:<br>r_sup:<br>g_sup:<br>b_sup:<br>sat_thrsh: | Hue-dependent adjustment lookup curves:<br>hue: hue shift.<br>sat: saturation gain. This modification is applied last.<br>lum: luminance gain<br>red: red gain<br>green: green gain<br>blue: blue gain<br>r_sup: red suppression. If r > min(g,b), r = min(g,b) + r_sup * (r-min(g,b))<br>g_sup: green suppression<br>b_sup: blue suppression<br>sat_thrsh: if source saturation is below this value, do not apply the lum, red, green, blue gains. Above this value, apply gain progressively. |
| Hue Vs Hue Guide / `huevshue` | Boolean | Off | Display a curve background guide designed for hue vs. hue tuning. |
| Luminance Math / `luminanceMath` | Choice | Rec. 709 | Formula used to compute luminance from RGB values (only used by 'Set Master').<br>**Rec. 709 (rec709)**: Use Rec. 709 (0.2126r + 0.7152g + 0.0722b).<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 (0.2627r + 0.6780g + 0.0593b).<br>**ACES AP0 (acesap0)**: Use ACES AP0 (0.3439664498r + 0.7281660966g + -0.0721325464b).<br>**ACES AP1 (acesap1)**: Use ACES AP1 (0.2722287168r + 0.6740817658g + 0.0536895174b).<br>**CCIR 601 (ccir601)**: Use CCIR 601 (0.2989r + 0.5866g + 0.1145b).<br>**Average (average)**: Use average of r, g, b.<br>**Max (max)**: Use max or r, g, b. |

continues on next page

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Clamp Black / `clampBlack` | Boolean | Off | All colors below 0 on output are set to 0. |
| Clamp White / `clampWhite` | Boolean | Off | All colors above 1 on output are set to 1. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Mix Luminance / `mixLuminanceEnable` | Boolean | On | Mix luminance |
| / `mixLuminance` | Double | 0 | Mix luminance |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.17 Invert node

*This documentation is for version 2.0 of Invert (net.sf.openfx.Invert).*

#### Description

Inverse the selected channels

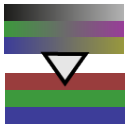
#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.18 LabToRGB709 node



*This documentation is for version 1.0 of LabToRGB709 (net.sf.openfx.LabToRGB709).*

#### Description

Convert from L*a*b color model to RGB (Rec.709 with D65 illuminant). L*a*b coordinates are divided by 100 for better visualization.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

### 2.7.19 LabToXYZ node

*This documentation is for version 1.0 of LabToXYZ (net.sf.openfx.LabToXYZ).*

#### Description

Convert from CIE L*a*b color space to CIE XYZ color space. L*a*b coordinates are divided by 100 for better visualization.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| | | | |

## 2.7.20 Log2Lin node

*This documentation is for version 1.0 of Log2Lin (net.sf.openfx.Log2Lin).*

### Description

Convert between the logarithmic encoding used in Cineon files and linear encoding.

This plugin may be used to customize the conversion between the linear and the logarithmic space, using different parameters than the Kodak-recommended settings.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Operation / `operation` | Choice | Log to Lin | The operation to perform.<br>**Log to Lin (log2lin)**: Convert the input from logarithmic to linear colorspace (usually after a Read node).<br>**Lin to Log (lin2log)**: Convert the input from linear to logarithmic colorspace (usually before a Write node). |
| Black / `black` | Color | r: 95 g: 95 b: 95 | Value in the Cineon file that corresponds to black. |
| White / `white` | Color | r: 685 g: 685 b: 685 | Value in the Cineon file that corresponds to white. |
| Gamma / `gamma` | Color | r: 0.6 g: 0.6 b: 0.6 | The film response gamma value. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.7.21 Multiply node



*This documentation is for version 2.0 of Multiply (net.sf.openfx.MultiplyPlugin).*

### Description

Multiply the selected channels by a constant.

See also: https://web.archive.org/web/20220627015945/http://www.opticalenquiry.com/nuke/index.php?title=Multiply

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value / `value` | Color | r: 1 g: 1 b: 1 a: 1 | Constant to multiply with the selected channels. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.7.22 OCIOCDLTransform node

*This documentation is for version 1.0 of OCIOCDLTransform (fr.inria.openfx.OCIOCDLTransform).*

### Description

Use OpenColorIO to apply an ASC Color Decision List (CDL) grade.

The formula applied for each channel is:

out = (in * slope + offset)^power.

The saturation is then applied to all channel using the standard rec709 saturation coefficients:

luma = 0.2126 * inR + 0.7152 * inG + 0.0722 * inB

outR = Clamp( luma + sat * (inR - luma) )

outG = Clamp( luma + sat * (inG - luma) )

outB = Clamp( luma + sat * (inB - luma) ).

The grade can be loaded from an ASC .ccc (Color Correction Collection) or .cc (Color Correction) file.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Slope / `slope` | Color | r: 1 g: 1 b: 1 | ASC CDL slope |
| Offset / `offset` | Color | r: 0 g: 0 b: 0 | ASC CDL offset |
| Power / `power` | Color | r: 1 g: 1 b: 1 | ASC CDL power |
| Saturation / `saturation` | Double | 1 | ASC CDL saturation |
| Direction / `direction` | Choice | Forward | Transform direction.<br>**Forward (forward)**<br>**Inverse (inverse)** |
| Read from file / `readFromFile` | Boolean | Off | Load color correction information from the .cc or .ccc file. |
| File / `file` | N/A | | Specify the src ASC CDL file, on disk, to use for this transform. This can be either a .cc or .ccc file. If .ccc is specified, the cccid is required. |
| Reload / `reload` | Button | | Reloads specified files |
| CCC Id / `cccId` | String | | If the source file is an ASC CDL CCC (color correction collection), this specifies the id to lookup. OpenColorIO::Contexts (envvars) are obeyed. |
| Export / `export` | N/A | | Export this grade as a ColorCorrection XML file (.cc), which can be loaded with the OCIOFileTransform, or using a FileTransform in an OCIO config. The file must not already exist. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Enable GPU Render / `enableGPU` | Boolean | Off | Enable GPU-based OpenGL render (only available when "(Un)premult" is not checked).<br>If the checkbox is checked but is not enabled (i.e. it cannot be unchecked), GPU render can not be enabled or disabled from the plugin and is probably part of the host options.<br>If the checkbox is not checked and is not enabled (i.e. it cannot be checked), GPU render is not available on this host. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.23 OCIOColorSpace node

*This documentation is for version 1.0 of OCIOColorSpace (fr.inria.openfx.OCIOColorSpace).*

#### Description

ColorSpace transformation using OpenColorIO configuration file.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| Input Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |
| Enable GPU Render / `enableGPU` | Boolean | Off | Enable GPU-based OpenGL render (only available when "(Un)premult" is not checked).<br>If the checkbox is checked but is not enabled (i.e. it cannot be unchecked), GPU render can not be enabled or disabled from the plugin and is probably part of the host options.<br>If the checkbox is not checked and is not enabled (i.e. it cannot be checked), GPU render is not available on this host. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.24 OCIODisplay node

*This documentation is for version 1.0 of OCIODisplay (fr.inria.openfx.OCIODisplay).*

#### Description

Uses the OpenColorIO library to apply a colorspace conversion to an image sequence, so that it can be accurately represented on a specific display device.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| Input Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Display Device / `displayIndex` | Choice | | Specifies the display device that will be used to view the sequence. |
| View Transform / `viewIndex` | Choice | | Specifies the display transform to apply to the scene or image. |
| Gain / `gain` | Double | 1 | Exposure adjustment, in scene-linear, prior to the display transform. |
| Gamma / `gamma` | Double | 1 | Gamma correction applied after the display transform. |
| Channel View / `channelSelector` | Choice | RGB | Specify which channels to view (prior to the display transform).<br>**RGB (rgb)**: Color.<br>**R (r)**: Red.<br>**G (g)**: Green.<br>**B (b)**: Blue.<br>**A (a)**: Alpha.<br>**Luminance (l)**: Luma |

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Table 70 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Enable GPU Render / `enableGPU` | Boolean | Off | Enable GPU-based OpenGL render (only available when "(Un)premult" is not checked).<br>If the checkbox is checked but is not enabled (i.e. it cannot be unchecked), GPU render can not be enabled or disabled from the plugin and is probably part of the host options.<br>If the checkbox is not checked and is not enabled (i.e. it cannot be checked), GPU render is not available on this host. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelpDisplays` | Button | | Help about the OpenColorIO configuration. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |

### 2.7.25 OCIOFileTransform node

*This documentation is for version 1.0 of OCIOFileTransform (fr.inria.openfx.OCIOFileTransform).*

### Description

Use OpenColorIO to apply a transform loaded from the given file.

This is usually a 1D or 3D LUT file, but can be other file-based transform, for example an ASC ColorCorrection XML file.

Note that the file's transform is applied with no special input/output colorspace handling - so if the file expects log-encoded pixels, but you apply the node to a linear image, you will get incorrect results.

Supported formats:

.3dl (flame)

.3dl (lustre)

.cc (ColorCorrection)

.ccc (ColorCorrectionCollection)

.cdl (ColorDecisionList)

.clf (Academy/ASC Common LUT Format)

.ctf (Color Transform Format)

.csp (cinespace)

.lut (Discreet 1D LUT)

.lut (houdini)

.icc (International Color Consortium profile)

.icm (Image Color Matching profile)

.pf (ICC profile)

.cube (iridas_cube)

.itx (iridas_itx)

.look (iridas_look)

.mga (pandora_mga)

.m3d (pandora_m3d)

.cube (resolve_cube)

.spi1d (spi1d)

.spi3d (spi3d)

.spimtx (spimtx)

.cub (truelight)

.vf (nukevf)

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| File / `file` | N/A | | File containing the transform.<br><br>Supported formats:<br><br>.3dl (flame)<br>.3dl (lustre)<br>.cc (ColorCorrection)<br>.ccc (ColorCorrectionCollection)<br>.cdl (ColorDecisionList)<br>.clf (Academy/ASC Common LUT Format)<br>.ctf (Color Transform Format)<br>.csp (cinespace)<br>.lut (Discreet 1D LUT)<br>.lut (houdini)<br>.icc (International Color Consortium profile)<br>.icm (Image Color Matching profile)<br>.pf (ICC profile)<br>.cube (iridas_cube)<br>.itx (iridas_itx)<br>.look (iridas_look)<br>.mga (pandora_mga)<br>.m3d (pandora_m3d)<br>.cube (resolve_cube)<br>.spi1d (spi1d)<br>.spi3d (spi3d)<br>.spimtx (spimtx)<br>.cub (truelight)<br>.vf (nukevf) |
| Reload / `reload` | Button | | Reloads specified files |
| Direction / `direction` | Choice | Forward | Transform direction.<br>**Forward (forward)**<br>**Inverse (inverse)** |
| Interpolation / `interpolation` | Choice | Linear | Interpolation method. For files that are not LUTs (mtx, etc) this is ignored.<br>**Nearest (nearest)**<br>**Linear (linear)**<br>**Tetrahedral (tetrahedral)**<br>**Best (best)** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Enable GPU Render / `enableGPU` | Boolean | Off | Enable GPU-based OpenGL render (only available when "(Un)premult" is not checked).<br>If the checkbox is checked but is not enabled (i.e. it cannot be unchecked), GPU render can not be enabled or disabled from the plugin and is probably part of the host options.<br>If the checkbox is not checked and is not enabled (i.e. it cannot be checked), GPU render is not available on this host. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.26 OCIOLogConvert node

*This documentation is for version 1.0 of OCIOLogConvert (fr.inria.openfx.OCIOLogConvert).*

#### Description

Use OpenColorIO to convert from SCENE_LINEAR to COMPOSITING_LOG (or back).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| OCIO config help… / `ocioHelp` | Button | | Help about the OpenColorIO configuration. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Operation / `operation` | Choice | Log to Lin | Operation to perform. Lin is the SCENE_LINEAR profile and Log is the COMPOSITING_LOG profile of the OCIO configuration.<br>**Log to Lin (log2lin)**<br>**Lin to Log (lin2log)** |
| Enable GPU Render / `enableGPU` | Boolean | Off | Enable GPU-based OpenGL render (only available when "(Un)premult" is not checked).<br>If the checkbox is checked but is not enabled (i.e. it cannot be unchecked), GPU render can not be enabled or disabled from the plugin and is probably part of the host options.<br>If the checkbox is not checked and is not enabled (i.e. it cannot be checked), GPU render is not available on this host. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.27 OCIOLookTransform node

*This documentation is for version 1.0 of OCIOLookTransform (fr.inria.openfx.OCIOLookTransform).*

#### Description

OpenColorIO LookTransform

A 'look' is a named color transform, intended to modify the look of an image in a 'creative' manner (as opposed to a colorspace definion which tends to be technically/mathematically defined).

Examples of looks may be a neutral grade, to be applied to film scans prior to VFX work, or a per-shot DI grade decided on by the director, to be applied just before the viewing transform.

OCIOLooks must be predefined in the OpenColorIO configuration before usage, and often reference per-shot/sequence LUTs/CCs.

See the 'Look Combination' parameter for further syntax details.

See opencolorio.org for look configuration customization examples.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OCIO Config File / `ocioConfigFile` | N/A | | OpenColorIO configuration file |
| Input Colorspace / `ocioInputSpaceIndex` | Choice | | Input data is taken to be in this colorspace. |
| Single Look / `singleLook` | Boolean | On | When checked, only the selected Look is applied. When not checked, the Look Combination is applied. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Look / `lookChoice` | Choice | Filmic - Very High Contrast | Look to apply (if "Single Look" is checked) or append to the Look Combination (when the "Append" button is pressed).<br>**Filmic - Very High Contrast**<br>**Filmic - High Contrast**<br>**Filmic - Medium High Contrast**<br>**Filmic - Base Contrast**<br>**Filmic - Medium Low Contrast**<br>**Filmic - Low Contrast**<br>**Filmic - Very Low Contrast**<br>**Agfa Agfacolor Futura 100**<br>**Agfa Agfacolor Futura 200**<br>**Agfa Agfacolor Futura 400**<br>**Agfa Agfacolor Futura II 100**<br>**Agfa Agfacolor Futura II 200**<br>**Agfa Agfacolor Futura II 400**<br>**Agfa Agfacolor HDC 100 plus**<br>**Agfa Agfacolor HDC 400 plus**<br>**Agfa Agfacolor HDC 200 plus**<br>**Agfa Agfacolor Optima II 100**<br>**Agfa Agfacolor Optima II 200**<br>**Agfa Agfacolor Ultra 050**<br>**Agfa Agfacolor Vista 100**<br>**Agfa Agfacolor Vista 200**<br>**Agfa Agfacolor Vista 400**<br>**Agfa Agfacolor Vista 800**<br>**Agfa Agfachrome CT Precisa 100**<br>**Agfa Agfachrome CT Precisa 200**<br>**Agfa Agfachrome RSX2 050**<br>**Agfa Agfachrome RSX2 100**<br>**Agfa Agfachrome RSX2 200**<br>**Agfa Advantix 100**<br>**Agfa Advantix 200**<br>**Agfa Advantix 400**<br>**Kodak Gold 100**<br>**Kodak Gold 200**<br>**Kodak Max Zoom 800**<br>**Kodak Portra 100T**<br>**Kodak Portra 160NC**<br>**Kodak Portra 160VC**<br>**Kodak Portra 800**<br>**Kodak Portra 400VC**<br>**Kodak Portra 400NC**<br>**Kodak Ektachrome 100 plus**<br>**Kodak Ektachrome 320T**<br>**Kodak Ektachrome 400X**<br>**Kodak Ektachrome 64**<br>**Kodak Ektachrome 64T**<br>**Kodak Ektachrome E100S**<br>**Kodak Ektachrome 100**<br>**Kodak Kodachrome 200**<br>**Kodak Kodachrome 25**<br>**Kodak Kodachrome 64**<br>**Kodak DSCS 3151** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Append Look to Combination / `append` | Button | | Append the selected Look to the Look Combination |
| Look Combination / `lookCombination` | String | | Specify the look(s) to apply.<br>This may be empty, the name of a single look, or a combination of looks using the 'look syntax'.<br>If it is empty, no look is applied.<br>Look Syntax:<br>Multiple looks are combined with commas: 'firstlook, secondlook'<br>Direction is specified with +/- prefixes: '+firstlook, -secondlook'<br>Missing look 'fallbacks' specified with \|: 'firstlook, -secondlook \| -secondlook' |
| Direction / `direction` | Choice | Forward | Transform direction.<br>**Forward (forward)**<br>**Inverse (inverse)** |
| Output Colorspace / `ocioOutputSpaceIndex` | Choice | | Output data is taken to be in this colorspace. |
| key1 / `key1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value1 / `value1` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key2 / `key2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| value2 / `value2` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key3 / `key3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value3 / `value3` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| key4 / `key4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| value4 / `value4` | String | | OCIO Contexts allow you to apply specific LUTs or grades to different shots.<br>Here you can specify the context name (key) and its corresponding value.<br>Full details of how to set up contexts and add them to your config can be found in the OpenColorIO documentation:<br>http://opencolorio.org/userguide/contexts.html |
| OCIO config help… / `ocioHelpLooks` | Button | | Help about the OpenColorIO configuration. |

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Table 73 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Enable GPU Render / `enableGPU` | Boolean | Off | Enable GPU-based OpenGL render (only available when "(Un)premult" is not checked).<br>If the checkbox is checked but is not enabled (i.e. it cannot be unchecked), GPU render can not be enabled or disabled from the plugin and is probably part of the host options.<br>If the checkbox is not checked and is not enabled (i.e. it cannot be checked), GPU render is not available on this host. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.7.28 PLogLin node

*This documentation is for version 1.0 of PLogLin (net.sf.openfx.PLogLin).*

### Description

Convert between logarithmic and linear encoding.

This method uses the so-called "Josh Pines log conversion" or "printing density transform" (as described in http://lists.gnu.org/archive/html/openexr-devel/2005-03/msg00006.html), which is based on a single gray point, rather than the white and black points in the Cineon formula (as implemented in the Log2Lin plugin).

Log to Lin conversion: xLin = linRef * pow( 10.0, (xLog * 1023. - logRef)*density/nGamma )

Lin to Log conversion: xLog = (logRef + log10(max( xLin, 1e-10 ) / linRef)*nGamma/density) / 1023.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Operation / `operation` | Choice | Log to Lin | The operation to perform.<br>**Log to Lin (log2lin)**: Convert the input from logarithmic to linear colorspace (usually after a Read node).<br>**Lin to Log (lin2log)**: Convert the input from linear to logarithmic colorspace (usually before a Write node). |

continues on next page

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Linear Reference / `linRef` | Color | r: 0.18 g: 0.18 b: 0.18 | Linear value of the reference gray point. Set this to the linear value that corresponds with the log reference value. |
| Log Reference / `logRef` | Color | r: 445 g: 445 b: 445 | Log value of the reference gray point. Set this to the log value that corresponds with the lin reference value. |
| Negative Gamma / `nGamma` | Color | r: 0.6 g: 0.6 b: 0.6 | The film response gamma value. |
| Density / `density` | Color | r: 0.002 g: 0.002 b: 0.002 | Density per code value. The change in the negative gamma for each log space code value. This is usually left to the default value of 0.002. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.29 Quantize node

*This documentation is for version 1.0 of Quantize (net.sf.openfx.Quantize).*

#### Description

Reduce the number of color levels per channel.

See also: https://web.archive.org/web/20210728012057/http://opticalenquiry.com/nuke/index.php?title=Color_Operation

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colors / `colors` | Double | 16 | Number of color levels to use per channel. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Dither / `dither` | Choice | None | Dithering method to apply in order to avoid the banding effect.<br>**None (none)**: No dithering (posterize), creating abrupt changes.<br>**Ordered (Bayer 2x2) (bayer2x2)**: Ordered dithering using a 2x2 Bayer matrix.<br>**Ordered (Bayer 4x4) (bayer4x4)**: Ordered dithering using a 4x4 Bayer matrix.<br>**Ordered (Bayer 8x8) (bayer8x8)**: Ordered dithering using a 8x8 Bayer matrix.<br>**Ordered (void-and-cluster 14x14) (vac14x14)**: Ordered dithering using a void-and-cluster 14x14 matrix.<br>**Ordered (void-and-cluster 25x25) (vac25x25)**: Ordered dithering using a void-and-cluster 25x25 matrix.<br>**Random (random)**: Random dithering. |
| Seed / `seed` | Integer | 2000 | Random seed: change this if you want different instances to have different dithering (only for random dithering). |
| Static Seed / `staticSeed` | Boolean | Off | When enabled, the dither pattern remains the same for every frame producing a constant dither effect. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.7.30 RGB709ToLab node

*This documentation is for version 1.0 of RGB709ToLab (net.sf.openfx.RGB709ToLab).*

#### Description

Convert from RGB (Rec.709 with D65 illuminant) to L*a*b color model. L*a*b coordinates are divided by 100 for better visualization.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.31 RGB709ToXYZ node

*This documentation is for version 1.0 of RGB709ToXYZ (net.sf.openfx.RGB709ToXYZ).*

### Description

Convert from RGB (Rec.709 with D65 illuminant) to XYZ color model. X, Y and Z are in the same units as RGB.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.32 RGBToHSI node

*This documentation is for version 1.0 of RGBToHSI (net.sf.openfx.RGBToHSI).*

### Description

Convert from linear RGB to HSI color model (hue, saturation, intensity, as defined by Gonzalez and Woods in 1992). H is in degrees, S and I are in the same units as RGB. No gamma correction is applied to RGB before conversion.

The HSI colour space (hue, saturation and intensity) attempts to produce a more intuitive representation of colour. The I axis represents the luminance information. The H and S axes are polar coordinates on the plane orthogonal to I. H is the angle, specified such that red is at zero, green at 120 degrees, and blue at 240 degrees. Hue thus represents what humans implicitly understand as colour. S is the magnitude of the colour vector projected in the plane orthogonal to I, and so represents the difference between pastel colours (low saturation) and vibrant colours (high saturation). The main drawback of this colour space is that hue is undefined if saturation is zero, making error propagation in transformations from the RGB colour space more complicated.

It should also be noted that, although the HSI colour space may be more intuitive, is not "perceptual", in the sense that small displacements of equal size in different parts of the colour space will be perceived by human observers as changes of different magnitude. Attempts have been made to define such colour spaces: CIE-LAB and CIE-LUV are two examples.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

### 2.7.33 RGBToHSL node

*This documentation is for version 1.0 of RGBToHSL (net.sf.openfx.RGBToHSL).*

#### Description

Convert from RGB to HSL color model (hue, saturation, lightness, as defined by Joblove and Greenberg in 1978). H is in degrees, S and L are in the same units as RGB. No gamma correction is applied to RGB before conversion.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

### 2.7.34 RGBToHSV node

*This documentation is for version 1.0 of RGBToHSV (net.sf.openfx.RGBToHSV).*

### Description

Convert from linear RGB to HSV color model (hue, saturation, value, as defined by A. R. Smith in 1978). H is in degrees, S and V are in the same units as RGB. No gamma correction is applied to RGB before conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.35 RGBToYCbCr601 node

*This documentation is for version 1.0 of RGBToYCbCr601 (net.sf.openfx.RGBToYCbCr601).*

### Description

Convert from linear RGB to YCbCr color model (ITU.BT-601). RGB is gamma-compressed using the sRGB Opto-Electronic Transfer Function (OETF) before conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.36 RGBToYCbCr709 node

*This documentation is for version 1.0 of RGBToYCbCr709 (net.sf.openfx.RGBToYCbCr709).*

### Description

Convert from linear RGB to YCbCr color model (ITU.BT-709). RGB is gamma-compressed using the Rec.709 Opto-Electronic Transfer Function (OETF) before conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.37 RGBToYPbPr601 node

*This documentation is for version 1.0 of RGBToYPbPr601 (net.sf.openfx.RGBToYPbPr601).*

### Description

Convert from RGB to YPbPr color model (ITU.BT-601). RGB is gamma-compressed using the sRGB Opto-Electronic Transfer Function (OETF) before conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.38 RGBToYPbPr709 node

*This documentation is for version 1.0 of RGBToYPbPr709 (net.sf.openfx.RGBToYPbPr709).*

### Description

Convert from RGB to YPbPr color model (ITU.BT-709). RGB is gamma-compressed using the Rec.709 Opto-Electronic Transfer Function (OETF) before conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.39 RGBToYUV601 node

*This documentation is for version 1.0 of RGBToYUV601 (net.sf.openfx.RGBToYUV601).*

### Description

Convert from RGB to YUV color model (ITU.BT-601). RGB is gamma-compressed using the sRGB Opto-Electronic Transfer Function (OETF) before conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.40 RGBToYUV709 node

*This documentation is for version 1.0 of RGBToYUV709 (net.sf.openfx.RGBToYUV709).*

### Description

Convert from RGB to YUV color model (ITU.BT-709). RGB is gamma-compressed using the Rec.709 Opto-Electronic Transfer Function (OETF) before conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing. Use if the input images are premultiplied. |

## 2.7.41 Saturation node

*This documentation is for version 2.0 of Saturation (net.sf.openfx.SaturationPlugin).*

### Description

Modify the color saturation of an image.

See also: https://web.archive.org/web/20220627030455/http://www.opticalenquiry.com/nuke/index.php?title=Saturation

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Saturation / `saturation` | Double | 1 | Color saturation factor to apply. 0 produces grayscale. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Luminance Math / `luminanceMath` | Choice | Rec. 709 | Formula used to compute luminance from RGB values.<br>**Rec. 709 (rec709)**: Use Rec. 709 (0.2126r + 0.7152g + 0.0722b).<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 (0.2627r + 0.6780g + 0.0593b).<br>**ACES AP0 (acesap0)**: Use ACES AP0 (0.3439664498r + 0.7281660966g + -0.0721325464b).<br>**ACES AP1 (acesap1)**: Use ACES AP1 (0.2722287168r + 0.6740817658g + 0.0536895174b).<br>**CCIR 601 (ccir601)**: Use CCIR 601 (0.2989r + 0.5866g + 0.1145b).<br>**Average (average)**: Use average of r, g, b.<br>**Max (max)**: Use max or r, g, b. |
| Clamp Black / `clampBlack` | Boolean | On | All colors below 0 on output are set to 0. |
| Clamp White / `clampWhite` | Boolean | Off | All colors above 1 on output are set to 1. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.7.42 VectorToColor node

*This documentation is for version 1.0 of VectorToColor (net.sf.openfx.VectorToColorPlugin).*

### Description

Convert x and y vector components to a color representation.

H (hue) gives the direction, S (saturation) is set to the amplitude/norm, and V is 1.The role of S and V can be switched.Output can be RGB or HSV, with H in degrees.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X channel / `xChannel` | Choice | r | Selects the X component of vectors<br>**r**: R channel from input.<br>**g**: G channel from input.<br>**b**: B channel from input.<br>**a**: A channel from input. |
| Y channel / `yChannel` | Choice | g | Selects the Y component of vectors<br>**r**: R channel from input.<br>**g**: G channel from input.<br>**b**: B channel from input.<br>**a**: A channel from input. |
| Opposite / `opposite` | Boolean | Off | If checked, opposite of X and Y are used. |
| Inverse Y / `inverseY` | Boolean | On | If checked, opposite of Y is used (on by default, because most optical flow results are shown using a downward Y axis). |
| Modulate V / `modulateV` | Boolean | Off | If checked, modulate V using the vector amplitude, instead of S. |
| HSV Output / `hsvOutput` | Boolean | Off | If checked, output is in the HSV color model. |

## 2.7.43 XYZToLab node

*This documentation is for version 1.0 of XYZToLab (net.sf.openfx.XYZToLab).*

### Description

Convert from CIE XYZ color space to CIE L*a*b color space. L*a*b coordinates are divided by 100 for better visualization.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| | | | |

## 2.7.44 XYZToRGB709 node

*This documentation is for version 1.0 of XYZToRGB709 (net.sf.openfx.XYZToRGB709).*

### Description

Convert from XYZ color model to RGB (Rec.709 with D65 illuminant). X, Y and Z are in the same units as RGB.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

## 2.7.45 XYZToxyY node

*This documentation is for version 1.0 of XYZToxyY (net.sf.openfx.XYZToxyY).*

### Description

Convert from CIE XYZ color space to CIE xyY color space.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| | | | |

## 2.7.46 YCbCrToRGB601 node

*This documentation is for version 1.0 of YCbCrToRGB601 (net.sf.openfx.YCbCrToRGB601).*

### Description

Convert from YCbCr color model (ITU.BT-601) to linear RGB. RGB is gamma-decompressed using the sRGB Electro-Optical Transfer Function (EOTF) after conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

## 2.7.47 YCbCrToRGB709 node

*This documentation is for version 1.0 of YCbCrToRGB709 (net.sf.openfx.YCbCrToRGB709).*

### Description

Convert from YCbCr color model (ITU.BT-709) to linear RGB. RGB is gamma-decompressed using the Rec.709 Electro-Optical Transfer Function (EOTF) after conversion.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

### 2.7.48 YPbPrToRGB601 node

*This documentation is for version 1.0 of YPbPrToRGB601 (net.sf.openfx.YPbPrToRGB601).*

#### Description

Convert from YPbPr color model (ITU.BT-601) to RGB. RGB is gamma-decompressed using the sRGB Electro-Optical Transfer Function (EOTF) after conversion.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

### 2.7.49 YPbPrToRGB709 node

*This documentation is for version 1.0 of YPbPrToRGB709 (net.sf.openfx.YPbPrToRGB709).*

#### Description

Convert from YPbPr color model (ITU.BT-709) to RGB. RGB is gamma-decompressed using the Rec.709 Electro-Optical Transfer Function (EOTF) after conversion.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

### 2.7.50 YUVToRGB601 node

*This documentation is for version 1.0 of YUVToRGB601 (net.sf.openfx.YUVToRGB601).*

#### Description

Convert from YUV color model (ITU.BT-601) to RGB. RGB is gamma-decompressed using the sRGB Electro-Optical Transfer Function (EOTF) after conversion.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

### 2.7.51 YUVToRGB709 node

*This documentation is for version 1.0 of YUVToRGB709 (net.sf.openfx.YUVToRGB709).*

#### Description

Convert from YUV color model (ITU.BT-709) to RGB. RGB is gamma-decompressed using the Rec.709 Electro-Optical Transfer Function (EOTF) after conversion.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult / `premult` | Boolean | Off | Multiply the image by the alpha channel after processing. Use to get premultiplied output images. |

### 2.7.52 xyYToXYZ node

*This documentation is for version 1.0 of xyYToXYZ (net.sf.openfx.xyYToXYZ).*

#### Description

Convert from CIE xyY color space to CIE XYZ color space.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| | | | |

## 2.8 Filter nodes

The following sections contain documentation about every node in the Filter group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.8.1 AngleBlur node

*This documentation is for version 1.0 of AngleBlur (fr.inria.AngleBlur).*

#### Description

The Angle Blur effect gives the illusion of motion in a given direction.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| Angle / `angleBlur_angle` | Double | 0 | Determines the direction into which the image is blurred. This is an angle in degrees. |

continues on next page

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Distance / `angleBlur_distance` | Double | 0 | Determines how much the image will be blurred |

### 2.8.2 Bloom node

*This documentation is for version 4.0 of Bloom (net.sf.cimg.CImgBloom).*

#### Description

Apply a Bloom filter (Kawase 2004) that sums multiple blur filters of different radii,

resulting in a larger but sharper glare than a simple blur.

It is similar to applying 'Count' separate Blur filters to the same input image with sizes 'Size', 'Size'*'Ratio', 'Size'*'Ratio'^2, etc., and averaging the results.

The blur radii follow a geometric progression (of common ratio 2 in the original implementation, bloomRatio in this implementation), and a total of bloomCount blur kernels are summed up (bloomCount=5 in the original implementation, and the kernels are Gaussian).

The blur filter can be a quasi-Gaussian, a Gaussian, a box, a triangle or a quadratic filter.

Ref.: Masaki Kawase, "Practical Implementation of High Dynamic Range Rendering", GDC 2004.

Uses the 'vanvliet' and 'deriche' functions from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Double | x: 0 y: 0 | Size (diameter) of the filter kernel, in pixel units (>=0). The standard deviation of the corresponding Gaussian is size/2.4. No blur is applied if size < 0.24 (Gaussian and quasi-Gaussian) or <= 1 (box, triangle and quadratic). |
| Uniform / `uniform` | Boolean | Off | Apply the same amount of blur on X and Y. |
| Ratio / `bloomRatio` | Double | 2 | Ratio between successive kernel sizes of the bloom filter. A ratio of 1 gives no Bloom effect, just the original blur. A higher ratio gives a blur kernel with a heavier tail. The original implementation uses a value of 2. |

continues on next page

Table 100 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Count / `bloomCount` | Integer | 5 | Number of blur kernels of the bloom filter. The original implementation uses a value of 5. Higher values give a wider of heavier tail (the size of the largest blur kernel is 2**bloomCount * size). A count of 1 is just the original blur. |
| Border Conditions / `boundary` | Choice | Nearest | Specifies how pixel values are computed out of the image domain. This mostly affects values at the boundary of the image. If the image represents intensities, Nearest (Neumann) conditions should be used. If the image represents gradients or derivatives, Black (Dirichlet) boundary conditions should be used.<br>**Black (black)**: Dirichlet boundary condition: pixel values out of the image domain are zero.<br>**Nearest (nearest)**: Neumann boundary condition: pixel values out of the image domain are those of the closest pixel location in the image domain. |
| Filter / `filter` | Choice | Quasi-Gaussian | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| Expand RoD / `expandRoD` | Boolean | Off | Expand the source region of definition by 1.5*size (3.6*sigma). |
| Crop To Format / `cropToFormat` | Boolean | On | If the source is inside the format and the effect extends it outside of the format, crop it to avoid unnecessary calculations. To avoid unwanted crops, only the borders that were inside of the format in the source clip will be cropped. |
| Alpha Threshold / `alphaThreshold` | Double | 0 | If this value is non-zero, any alpha value below this is set to zero. This is only useful for IIR filters (Gaussian and Quasi-Gaussian), which may produce alpha values very close to zero due to arithmetic precision. Remind that, in theory, a black image with a single white pixel should produce non-zero values everywhere, but a few VFX tricks rely on the fact that alpha should be zero far from the alpha edges (e.g. the premult-blur-unpremult trick to fill holes)). A threshold value of 0.003 is reasonable, and values between 0.001 and 0.01 are usually enough to remove these artifacts. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.3 Blur node

*This documentation is for version 4.0 of Blur (net.sf.cimg.CImgBlur).*

#### Description

Blur input stream or compute derivatives.

The blur filter can be a quasi-Gaussian, a Gaussian, a box, a triangle or a quadratic filter.

Note that the Gaussian filter [1] is implemented as an IIR (infinite impulse response) filter [2][3], whereas most compositing software implement the Gaussian as a FIR (finite impulse response) filter by cropping the Gaussian impulse response. Consequently, when blurring a white dot on black background, it produces very small values very far away from the dot. The quasi-Gaussian filter is also IIR.

A very common process in compositing to expand colors on the edge of a matte is to use the premult-blur-unpremult combination [4][5]. The very small values produced by the IIR Gaussian filter produce undesirable artifacts after unpremult. For this process, the FIR quadratic filter (or the faster triangle or box filters) should be preferred over the IIR Gaussian filter.

References:

[1] https://en.wikipedia.org/wiki/Gaussian_filter

[2] I.T. Young, L.J. van Vliet, M. van Ginkel, Recursive Gabor filtering. IEEE Trans. Sig. Proc., vol. 50, pp. 2799-2805, 2002. (this is an improvement over Young-Van Vliet, Sig. Proc. 44, 1995)

[3] B. Triggs and M. Sdika. Boundary conditions for Young-van Vliet recursive filtering. IEEE Trans. Signal Processing, vol. 54, pp. 2365-2367, 2006.

[4] Nuke Expand Edges or how to get rid of outlines. http://franzbrandstaetter.com/?p=452

[5] Colour Smear for Nuke. http://richardfrazer.com/tools-tutorials/colour-smear-for-nuke/

Uses the 'vanvliet' and 'deriche' functions from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Double | x: 0 y: 0 | Size (diameter) of the filter kernel, in pixel units (>=0). The standard deviation of the corresponding Gaussian is size/2.4. No blur is applied if size < 0.24 (Gaussian and quasi-Gaussian) or <= 1 (box, triangle and quadratic). |
| Uniform / `uniform` | Boolean | Off | Apply the same amount of blur on X and Y. |

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Table 101 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X derivation order / `orderX` | Integer | 0 | Derivation order in the X direction. (orderX=0,orderY=0) does smoothing, (orderX=1,orderY=0) computes the X component of the image gradient. |
| Y derivation order / `orderY` | Integer | 0 | Derivation order in the Y direction. (orderX=0,orderY=0) does smoothing, (orderX=0,orderY=1) computes the X component of the image gradient. |
| Border Conditions / `boundary` | Choice | Black | Specifies how pixel values are computed out of the image domain. This mostly affects values at the boundary of the image. If the image represents intensities, Nearest (Neumann) conditions should be used. If the image represents gradients or derivatives, Black (Dirichlet) boundary conditions should be used.<br>**Black (black)**: Dirichlet boundary condition: pixel values out of the image domain are zero.<br>**Nearest (nearest)**: Neumann boundary condition: pixel values out of the image domain are those of the closest pixel location in the image domain. |
| Filter / `filter` | Choice | Gaussian | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by 1.5*size (3.6*sigma). |
| Crop To Format / `cropToFormat` | Boolean | On | If the source is inside the format and the effect extends it outside of the format, crop it to avoid unnecessary calculations. To avoid unwanted crops, only the borders that were inside of the format in the source clip will be cropped. |
| Alpha Threshold / `alphaThreshold` | Double | 0 | If this value is non-zero, any alpha value below this is set to zero. This is only useful for IIR filters (Gaussian and Quasi-Gaussian), which may produce alpha values very close to zero due to arithmetic precision. Remind that, in theory, a black image with a single white pixel should produce non-zero values everywhere, but a few VFX tricks rely on the fact that alpha should be zero far from the alpha edges (e.g. the premult-blur-unpremult trick to fill holes)). A threshold value of 0.003 is reasonable, and values between 0.001 and 0.01 are usually enough to remove these artifacts. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |

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Table 101 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.4 ChromaBlur node

*This documentation is for version 4.0 of ChromaBlur (net.sf.cimg.CImgChromaBlur).*

#### Description

Blur the chrominance of an input stream. Smoothing is done on the x and y components in the CIE xyY color space. Used to prep strongly compressed and chroma subsampled footage for keying.

The blur filter can be a quasi-Gaussian, a Gaussian, a box, a triangle or a quadratic filter.

Uses the 'vanvliet' and 'deriche' functions from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Double | x: 0 y: 0 | Size (diameter) of the filter kernel, in pixel units (>=0). The standard deviation of the corresponding Gaussian is size/2.4. No blur is applied if size < 0.24 (Gaussian and quasi-Gaussian) or <= 1 (box, triangle and quadratic). |
| Uniform / `uniform` | Boolean | Off | Apply the same amount of blur on X and Y. |
| Colorspace / `colorspace` | Choice | Rec. 709 | Formula used to compute chrominance from RGB values.<br>**Rec. 709 (rec709)**: Use Rec. 709 with D65 illuminant.<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 with D65 illuminant.<br>**ACES AP0 (acesap0)**: Use ACES AP0 with ACES (approx. D60) illuminant.<br>**ACES AP1 (acesap1)**: Use ACES AP1 with ACES (approx. D60) illuminant. |

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Table 102 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Gaussian | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.5 DenoiseSharpen node

*This documentation is for version 1.0 of DenoiseSharpen (net.sf.openfx.DenoiseSharpen).*

#### Description

Denoise and/or sharpen images using wavelet-based algorithms.

#### Description

This plugin allows the separate denoising of image channels in multiple color spaces using wavelets, using the BayesShrink algorithm, and can also sharpen the image details.

Noise levels for each channel may be either set manually, or analyzed from the image data in each wavelet subband using the MAD (median absolute deviation) estimator. Noise analysis is based on the assumption that the noise is Gaussian and additive (it is not intensity-dependent). If there is speckle or salt-and-pepper noise in the images, the Median or SmoothPatchBased filters may be more appropriate. The color model specifies the channels and the transforms used. Noise levels have to be re-adjusted or re-analyzed when changing the color model.

### Basic Usage

The input image should be in linear RGB.

For most footage, the effect works best by keeping the default Y'CbCr color model. The color models are made to work with Rec.709 data, but DenoiseSharpen will still work if the input is in another colorspace, as long as the input is linear RGB:

- The Y'CbCr color model uses the Rec.709 opto-electronic transfer function to convert from RGB to R'G'B' and the the Rec.709 primaries to convert from R'G'B' to Y'CbCr.
- The L * a * b color model uses the Rec.709 RGB primaries to convert from RGB to L * a * b.
- The R'G'B' color model uses the Rec.709 opto-electronic transfer function to convert from RGB to R'G'B'.
- The RGB color model (linear) makes no assumption about the RGB color space, and works directly on the RGB components, assuming additive noise. This is the only option if the noisy source contains negative values. If, say, the noise is known to be multiplicative, one can convert the images to Log before denoising, use this option, and convert back to linear after denoising.
- The Alpha channel, if processed, is always considered to be linear.

The simplest way to use this plugin is to leave the noise analysis area to the whole image, and click "Analyze Noise Levels". Once the analysis is done, "Lock Noise Analysis" is checked in order to avoid modifying the essential parameters by mistake.

If the image has many textured areas, it may be preferable to select an analysis area with flat colors, free from any details, shadows or highlights, to avoid considering texture as noise. The AnalysisMask input can be used to mask the analysis, if the rectangular area is not appropriate. Any non-zero pixels in the mask are taken into account. A good option for the AnalysisMask would be to take the inverse of the output of an edge detector and clamp it correctly so that all pixels near the edges have a value of zero..

If the sequence to be denoised does not have enough flat areas, you can also connect a reference footage with the same kind of noise to the AnalysisSource input: that source will be used for the analysis only. If no source with flat areas is available, and noise analysis can only be performed on areas which also contain details, it is often preferable to disable very low, low, and sometimes medium frequencies in the "Frequency Tuning" parameters group, or at least to lower their gain, since they may be misestimated by the noise analysis process. If the noise is IID (independent and identically distributed), such as digital sensor noise, only "Denoise High Frequencies" should be checked. If the noise has some grain (i.e. it commes from lossy compression of noisy images by a camera, or it is scanned film), then you may want to enable medium frequencies as well. If low and very low frequencies are enabled, but the analysis area is not a flat zone, the signal itself (i.e. the noise-free image) could be considered as noise, and the result may exhibit low contrast and blur.

To check what details have been kept after denoising, you can raise the Sharpen Amount to something like 10, and then adjust the Noise Level Gain to get the desired denoising amount, until no noise is left and only image details remain in the sharpened image. You can then reset the Sharpen Amount to zero, unless you actually want to enhance the contrast of your denoised footage.

You can also check what was actually removed from the original image by selecting the "Noise" Output mode (instead of "Result"). If too many image details are visible in the noise, noise parameters may need to be tuned.

This plugin was compiled with OpenMP support.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | The footage to be denoised. If nothing is connected to the AnalysisSource input, this is also used for noise analysis. | No |
| Mask | An optional image to use as a mask. By default, the effect is limited to the non-black areas of the mask. | Yes |
| AnalysisSource | An optional noise source. If connected, this is used instead of the Source input for the noise analysis. This is used to analyse noise from some footage by apply it on another footage, in case the footage to be denoised does not have enough flat areas. | Yes |
| AnalysisMask | An optional mask for the analysis area. This mask is intersected with the Analysis Rectangle. Non-zero pixels are taken into account in the noise analysis phase. | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output / `outputMode` | Choice | Result | Select which image is output when analysis is locked. When analysis is not locked, the effect does nothing (the output is the source image).<br>**Result (result)**: The result of denoising and sharpening the Source image.<br>**Noise (noise)**: An image containing what would be added to the image to denoise it. If 'Denoise Amount' is zero, this image should be black. Only noise should be visible in this image. If you can see a lot of picture detail in the noise output, it means the current settings are denoising too hard and remove too much of the image, which leads to a smoothed result. Try to lower the noise levels or the noise level gain.<br>**Sharpen (sharpen)**: An image containing what would be added to the image to sharpen it. If 'Sharpen Amount' is zero, this image should be black. Only image details should be visible in this image. If you can see a lot of noise in the sharpen output, it means the current settings are denoising not enough, which leads to a noisy result. Try to raise the noise levels or the noise level gain. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color Model / `colorModel` | Choice | Y'CbCr(A) | The colorspace where denoising is performed. These colorspaces assume that input and output use the Rec.709/sRGB chromaticities and the D65 illuminant, but should tolerate other input colorspaces (the output colorspace will always be the same as the input colorspace). Noise levels are reset when the color model is changed.<br>**Y'CbCr(A) (ycbcr)**: The YCbCr color model has one luminance channel (Y) which contains most of the detail information of an image (such as brightness and contrast) and two chroma channels (Cb = blueness, Cr = reddness) that hold the color information. Note that this choice drastically affects the result. Uses the Rec.709 opto-electronic transfer function to convert from RGB to R'G'B' and the the Rec.709 primaries to convert from R'G'B' to Y'CbCr.<br>**CIE L*a*b(A) (cielab)**: CIE L*a*b* is a color model in which chrominance is separated from lightness and color distances are perceptually uniform. Note that this choice drastically affects the result. Uses the Rec.709 primaries to convert from RGB to L*a*b.<br>**R'G'B'(A) (gammargb)**: The R'G'B' color model (gamma-corrected RGB) separates an image into channels of red, green, and blue. Note that this choice drastically affects the result. Uses the Rec.709 opto-electronic transfer function to convert from RGB to R'G'B'.<br>**RGB(A) (linearrgb)**: The Linear RGB color model processes the raw linear components. Usually a bad choice, except when denoising non-color data (e.g. depth or motion vectors). No assumption is made about the RGB color space. |
| Lock Analysis and Apply / `analysisLock` | Boolean | Off | Lock all noise analysis parameters and apply denoising. When the analysis is not locked, the source image is output. |
| Bottom Left / `bottomLeft` | Double | x: 0.1<br>y: 0.1 | Coordinates of the bottom left corner of the analysis rectangle. This rectangle is intersected with the AnalysisMask input, if connected. |
| Size / `size` | Double | w: 0.8<br>h: 0.8 | Width and height of the analysis rectangle. This rectangle is intersected with the AnalysisMask input, if connected. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| B3 Spline Interpolation / `useB3Spline` | Boolean | On | For wavelet decomposition, use a 5x5 filter based on B3 spline interpolation rather than a 3x3 Lagrange linear filter. Noise levels are reset when this setting is changed. The influence of this parameter is minimal, and it should not be changed. |
| Analysis Frame / `analysisFrame` | Integer | -1 | The frame number where the noise levels were analyzed. |
| Analyze Noise Levels / `analyzeNoiseLevels` | Button | | Computes the noise levels from the current frame and current color model. To use the same settings for the whole sequence, analyze a frame that is representative of the sequence. If a mask is set, it is used to compute the noise levels from areas where the mask is non-zero. If there are keyframes on the noise level parameters, this sets a keyframe at the current frame. The noise levels can then be fine-tuned. |
| Y Level (High) / `ylrNoiseLevelHigh` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Cb Level (High) / `cbagNoiseLevelHigh` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |

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Table 103 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Cr Level (High) / `crbbNoiseLevelHigh` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Alpha Level (High) / `alphaNoiseLevelHigh` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Y Level (Medium) / `ylrNoiseLevelMedium` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Cb Level (Medium) / `cbagNoiseLevelMedium` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Cr Level (Medium) / `crbbNoiseLevelMedium` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Alpha Level (Medium) / `alphaNoiseLevelMedium` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Y Level (Low) / `ylrNoiseLevelLow` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Cb Level (Low) / `cbagNoiseLevelLow` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Cr Level (Low) / `crbbNoiseLevelLow` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Alpha Level (Low) / `alphaNoiseLevelLow` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Y Level (Very Low) / `ylrNoiseLevelVeryLow` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Cb Level (Very Low) / `cbagNoiseLevelVeryLow` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Cr Level (Very Low) / `crbbNoiseLevelVeryLow` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Alpha Level (Very Low) / `alphaNoiseLevelVeryLow` | Double | 0 | Adjusts the noise variance of the selected channel for the given noise frequency. May be estimated from image data by pressing the "Analyze Noise" button. |
| Noise Level Gain / `noiseLevelGain` | Double | 1 | Global gain to apply to the noise level thresholds. 0 means no denoising, 1 means use the estimated thresholds multiplied by the per-frequency gain and the channel gain. The default value (1.0) is rather conservative (it does not destroy any kind of signal). Values around 1.1 or 1.2 usually give more pleasing results. |

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Table 103 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Denoise Amount / `denoiseAmount` | Double | 1 | The amount of denoising to apply. 0 means no denoising (which may be useful to sharpen without denoising), between 0 and 1 does a soft thresholding of below the thresholds, thus keeping some noise, and 1 applies the threshold strictly and removes everything below the thresholds. This should be used only if you want to keep some noise, for example for noise matching. This value is multiplied by the per-channel amount se in the 'Channel Tuning' group. Remember that the thresholds are multiplied by the per-frequency gain, the channel gain, and the Noise Level Gain first. |
| Denoise High Frequencies / `enableFreqHigh` | Boolean | On | Check to enable the high frequency noise level thresholds. It is recommended to always leave this checked. |
| High Gain / `gainFreqHigh` | Double | 1 | Gain to apply to the high frequency noise level thresholds. 0 means no denoising, 1 means use the estimated thresholds multiplied by the channel Gain and the Noise Level Gain. |
| Denoise Medium Frequencies / `enableFreqMedium` | Boolean | On | Check to enable the medium frequency noise level thresholds. Can be disabled if the analysis area contains high frequency texture, or if the the noise is known to be IID (independent and identically distributed), for example if this is only sensor noise and lossless compression is used, and not grain or compression noise. |
| Medium Gain / `gainFreqMedium` | Double | 1 | Gain to apply to the medium frequency noise level thresholds. 0 means no denoising, 1 means use the estimated thresholds multiplied by the channel Gain and the Noise Level Gain. |
| Denoise Low Frequencies / `enableFreqLow` | Boolean | On | Check to enable the low frequency noise level thresholds. Must be disabled if the analysis area contains texture, or if the noise is known to be IID (independent and identically distributed), for example if this is only sensor noise and lossless compression is used, and not grain or compression noise. |
| Low Gain / `gainFreqLow` | Double | 1 | Gain to apply to the low frequency noise level thresholds. 0 means no denoising, 1 means use the estimated thresholds multiplied by the channel Gain and the Noise Level Gain. |
| Denoise Very Low Frequencies / `enableFreqVeryLow` | Boolean | On | Check to enable the very low frequency noise level thresholds. Can be disabled in most cases. Must be disabled if the analysis area contains texture, or if the noise is known to be IID (independent and identically distributed), for example if this is only sensor noise and lossless compression is used, and not grain or compression noise. |
| Very Low Gain / `gainFreqVeryLow` | Double | 1 | Gain to apply to the very low frequency noise level thresholds. 0 means no denoising, 1 means use the estimated thresholds multiplied by the channel Gain and the global Noise Level Gain. |
| Adaptive Radius / `adaptiveRadius` | Integer | 4 | Radius of the window where the signal level is analyzed at each scale. If zero, the signal level is computed from the whole image, which may excessively blur the edges if the image has many flat color areas. A reasonable value should to be in the range 2-4. |
| Y Gain / `ylrGain` | Double | 1 | Gain to apply to the thresholds for this channel. 0 means no denoising, 1 means use the estimated thresholds multiplied by the per-frequency gain and the global Noise Level Gain. |
| Y Amount / `ylrAmount` | Double | 1 | The amount of denoising to apply to the specified channel. 0 means no denoising, between 0 and 1 does a soft thresholding of below the thresholds, thus keeping some noise, and 1 applies the threshold strictly and removes everything below the thresholds. This should be used only if you want to keep some noise, for example for noise matching. This value is multiplied by the global Denoise Amount. Remember that the thresholds are multiplied by the per-frequency gain, the channel gain, and the Noise Level Gain first. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Cb Gain / cbagGain | Double | 1 | Gain to apply to the thresholds for this channel. 0 means no denoising, 1 means use the estimated thresholds multiplied by the per-frequency gain and the global Noise Level Gain. |
| Cb Amount / cbagAmount | Double | 1 | The amount of denoising to apply to the specified channel. 0 means no denoising, between 0 and 1 does a soft thresholding of below the thresholds, thus keeping some noise, and 1 applies the threshold strictly and removes everything below the thresholds. This should be used only if you want to keep some noise, for example for noise matching. This value is multiplied by the global Denoise Amount. Remember that the thresholds are multiplied by the per-frequency gain, the channel gain, and the Noise Level Gain first. |
| Cr Gain / crbbGain | Double | 1 | Gain to apply to the thresholds for this channel. 0 means no denoising, 1 means use the estimated thresholds multiplied by the per-frequency gain and the global Noise Level Gain. |
| Cr Amount / crbbAmount | Double | 1 | The amount of denoising to apply to the specified channel. 0 means no denoising, between 0 and 1 does a soft thresholding of below the thresholds, thus keeping some noise, and 1 applies the threshold strictly and removes everything below the thresholds. This should be used only if you want to keep some noise, for example for noise matching. This value is multiplied by the global Denoise Amount. Remember that the thresholds are multiplied by the per-frequency gain, the channel gain, and the Noise Level Gain first. |
| Alpha Gain / alphaGain | Double | 1 | Gain to apply to the thresholds for this channel. 0 means no denoising, 1 means use the estimated thresholds multiplied by the per-frequency gain and the global Noise Level Gain. |
| Alpha Amount / alphaAmount | Double | 1 | The amount of denoising to apply to the specified channel. 0 means no denoising, between 0 and 1 does a soft thresholding of below the thresholds, thus keeping some noise, and 1 applies the threshold strictly and removes everything below the thresholds. This should be used only if you want to keep some noise, for example for noise matching. This value is multiplied by the global Denoise Amount. Remember that the thresholds are multiplied by the per-frequency gain, the channel gain, and the Noise Level Gain first. |
| Sharpen Amount / sharpenAmount | Double | 0 | Adjusts the amount of sharpening applied. Be careful that only components that are above the noise levels are enhanced, so the noise level gain parameters are very important for proper sharpening. For example, if 'Noise Level Gain' is set to zero (0), then noise is sharpened as well as signal. If the 'Noise Level Gain' is set to one (1), only signal is sharpened. In order to sharpen without denoising, set the 'Denoise Amount' parameter to zero (0). |
| Sharpen Size / sharpenSize | Double | 10 | Adjusts the size of the sharpening. For very unsharp images it is recommended to use higher values. Default is 10. |
| Sharpen Y Only / sharpenLuminance | Boolean | On | Sharpens luminance only (if colormodel is R'G'B', sharpen only RGB). This avoids color artifacts to appear. Colour sharpness in natural images is not critical for the human eye. |
| (Un)premult / premult | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / maskInvert | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / mix | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.6 Dilate node



*This documentation is for version 2.1 of Dilate (net.sf.cimg.CImgDilate).*

#### Description

Dilate (or erode) input stream by a rectangular structuring element of specified size and Neumann boundary conditions (pixels out of the image get the value of the nearest pixel).

A negative size will perform an erosion instead of a dilation.

Different sizes can be given for the x and y axis.

Uses the 'dilate' and 'erode' functions from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Integer | x: 1 y: 1 | Width/height of the rectangular structuring element is 2*size+1, in pixel units (>=0). |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by 2*size pixels if size is positive |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.7 DirBlur node

*This documentation is for version 1.0 of DirBlur (net.sf.openfx.DirBlur).*

### Description

Apply directional blur to an image.

This plugin concatenates transforms upstream.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Translate / `translate` | Double | x: 0 y: 0 | Translation along the x and y axes in pixels. Can also be adjusted by clicking and dragging the center handle in the Viewer. |
| Rotate / `rotate` | Double | 0 | Rotation angle in degrees around the Center. Can also be adjusted by clicking and dragging the rotation bar in the Viewer. |
| Scale / `scale` | Double | x: 1 y: 1 | Scale factor along the x and y axes. Can also be adjusted by clicking and dragging the outer circle or the diameter handles in the Viewer. |
| Uniform / `uniform` | Boolean | Off | Use the X scale for both directions |
| Skew X / `skewX` | Double | 0 | Skew along the x axis. Can also be adjusted by clicking and dragging the skew bar in the Viewer. |
| Skew Y / `skewY` | Double | 0 | Skew along the y axis. |
| Skew Order / `skewOrder` | Choice | XY | The order in which skew transforms are applied: X then Y, or Y then X.<br>**XY**<br>**YX** |
| Amount / `transformAmount` | Double | 1 | Amount of transform to apply. 0 means the transform is identity, 1 means to apply the full transform. |
| Center / `center` | Double | x: 0.5 y: 0.5 | Center of rotation and scale. |
| Reset Center / `resetCenter` | Button | | Reset the position of the center to the center of the input region of definition |
| Interactive Update / `interactive` | Boolean | On | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Invert / `invert` | Boolean | Off | Invert the transform. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | Off | Fill the area outside the source image with black |
| Motion Blur / `motionBlur` | Double | 1 | Quality of motion blur rendering. 0 disables motion blur, 1 is a good value. Increasing this slows down rendering. |
| Amount / `amount` | Double | 1 | Amount of blur transform to apply. A value of 1 means to apply the full transform range. A value of 0 means to apply no blur at all. Default is 1. |
| Centered / `centered` | Boolean | Off | When checked, apply directional blur symmetrically around the neutral position. |
| Fading / `fading` | Double | 0 | Controls the fading function. A value of 1 corresponds to linear fading. A value of 0 disables fading. Default is 0. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.8 Distance node

*This documentation is for version 1.0 of Distance (eu.cimg.Distance).*

#### Description

Compute at each pixel the distance to pixels that have a value of zero.

The distance is normalized with respect to the largest image dimension, so that it is between 0 and 1.

Optionally, a signed distance to the frontier between zero and nonzero values can be computed.

The distance transform can then be thresholded using the Threshold effect, or transformed using the ColorLookup effect, in order to generate a mask for another effect.

See alse https://en.wikipedia.org/wiki/Distance_transform

Uses the 'distance' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Metric / `metric` | Choice | Euclidean | Type of metric.<br>**Chebyshev (chebyshev)**: max(abs(x-xborder),abs(y-yborder))<br>**Manhattan (manhattan)**: abs(x-xborder) + abs(y-yborder)<br>**Euclidean (euclidean)**: sqrt(sqr(x-xborder) + sqr(y-yborder)) |
| Signed Distance / `signed` | Boolean | Off | Instead of computing the distance to pixels with a value of zero, compute the signed distance to the contour between zero and non-zero pixels. On output, non-zero-valued pixels have a positive signed distance, zero-valued pixels have a negative signed distance. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.9 DropShadow node

*This documentation is for version 1.0 of DropShadow (fr.inria.DropShadow).*

#### Description

Creates a drop shadow on the source image using its alpha channel.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| Angle / `shadowAngle` | Double | -45 | |
| Distance / `shadowDist` | Double | 20 | |
| Bluriness / `shadowBlur` | Double | x: 0 y: 0 | |
| Opacity / `shadowOpacity` | Color | r: 0.5 g: 0.5 b: 0.5 a: 0.5 | |
| Color / `shadowColor` | Color | r: 0 g: 0 b: 0 | |
| Color from source / `shadowCFS` | Boolean | Off | |
| Shadow only / `shadowOnly` | Boolean | Off | |

## 2.8.10 EdgeBlur node

*This documentation is for version 1.0 of EdgeBlur (fr.inria.EdgeBlur).*

### Description

Blur the image where there are edges in the alpha/matte channel.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |
| Matte | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| R / `Blur1NatronOfxParamProcessR` | Boolean | On | |
| G / `Blur1NatronOfxParamProcessG` | Boolean | On | |
| B / `Blur1NatronOfxParamProcessB` | Boolean | On | |
| A / `Blur1NatronOfxParamProcessA` | Boolean | On | |
| External Matte / `externalMatte` | Boolean | Off | Use the edges from the Matte input instead of the alpha channel of the source image. |
| Size / `size` | Double | 3 | |
| Filter / `filter` | Choice | Gaussian | **Simple (simple)**: Gradient is estimated by centered finite differences.<br>**Sobel (sobel)**: Compute gradient using the Sobel 3x3 filter.<br>**Rotation Invariant (rotinvariant)**: Compute gradient using a 3x3 rotation-invariant filter.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| Crop To Format / `cropToFormat` | Boolean | On | |
| Edge Mult / `edgeMult` | Double | 2 | Sharpness of the borders of the blur area. |
| Invert Mask / `Merge1maskInvert` | Boolean | Off | |
| Mix / `Blur1mix` | Double | 1 | |

### 2.8.11 EdgeDetect node

*This documentation is for version 4.0 of EdgeDetect (eu.cimg.EdgeDetect).*

#### Description

Perform edge detection by computing the image gradient magnitude. Optionally, edge detection can be preceded by blurring, and followed by erosion and thresholding. In most cases, EdgeDetect is followed a Grade node to extract the proper edges and generate a mask from these.

For color or multi-channel images, several edge detection algorithms are proposed to combine the gradients computed in each channel:

- Separate: the gradient magnitude is computed in each channel separately, and the output is a color edge image.
- RMS: the RMS of per-channel gradients magnitudes is computed.
- Max: the maximum per-channel gradient magnitude is computed.
- Tensor: the tensor gradient norm [1].

References:

- [1] Silvano Di Zenzo, A note on the gradient of a multi-image, CVGIP 33, 116-125 (1986). http://people.csail.mit.edu/tieu/notebook/imageproc/dizenzo86.pdf

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#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Gaussian | Edge detection filter. If the blur size is not zero, it is used as the kernel size for quasi-Gaussian, Gaussian, box, triangle and quadratic filters. For the simple, rotation-invariant and Sobel filters, the image is pre-blurred with a Gaussian filter.<br>**Simple (simple)**: Gradient is estimated by centered finite differences.<br>**Sobel (sobel)**: Compute gradient using the Sobel 3x3 filter.<br>**Rotation Invariant (rotinvariant)**: Compute gradient using a 3x3 rotation-invariant filter.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| Multi-Channel / `multiChannel` | Choice | Tensor | Operation used to combine multi-channel (e.g. color) gradients into an edge detector. This parameter has no effect if a single channel (e.g. alpha) is processed.<br>**Separate (separate)**: The gradient magnitude is computed in each channel separately, and the output is a color edge image.<br>**RMS (rms)**: The RMS of per-channel gradients magnitudes is computed.<br>**Max (max)**: The maximum per-channel gradient magnitude is computed.<br>**Tensor (tensor)**: The tensor gradient norm is computed. See Silvano Di Zenzo, A note on the gradient of a multi-image, CVGIP 33, 116-125 (1986). |
| Blur Size / `blurSize` | Double | 0 | Size of the blur kernel applied before edge detection. |
| Erode Size / `erodeSize` | Double | 0 | Size of the erosion performed after edge detection. |
| Non-Maxima Suppression / `nms` | Boolean | Off | Perform non-maxima suppression (after edge detection and erosion): only values that are maximal in the direction orthogonal to the contour are kept. For multi-channel images, the contour direction estimation depends on the multi-channel operation. |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by 1.5*size (3.6*sigma). |
| Crop To Format / `cropToFormat` | Boolean | On | If the source is inside the format and the effect extends it outside of the format, crop it to avoid unnecessary calculations. To avoid unwanted crops, only the borders that were inside of the format in the source clip will be cropped. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |

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Table 109 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.12 EdgeExtend node

*This documentation is for version 4.0 of EdgeExtend (eu.cimg.EdgeExtend).*

#### Description

Fill a matte (i.e. a non-opaque color image with an alpha channel) by extending the edges of the matte. This effect does nothing an an opaque image.

If the input matte comes from a keyer, the alpha channel of the matte should be first eroded by a small amount to remove pixels containing mixed foreground/background colors. If not, these mixed colors may be extended instead of the pure foreground colors.

The filling process works by iteratively blurring the image, and merging the non-blurred image over the image to get to the next iteration. There are exactly 'Slices' such operations. The blur size at each iteration is linearly increasing.

'Size' is thus the total size of the edge extension, and 'Slices' is an indicator of the precision: the more slices there are, the sharper is the final image near the original edges.

Optionally, the image can be multiplied by the alpha channel on input (premultiplied), and divided by the alpha channel on output (unpremultiplied), so that if RGB contain an image and Alpha contains a mask, the output is an image where the RGB is smeared from the non-zero areas of the mask to the zero areas of the same mask.

The 'Size' parameter gives the size of the largest blur kernel, 'Count' gives the number of blur kernels, and 'Ratio' gives the ratio between consecutive blur kernel sizes. The size of the smallest blur kernel is thus 'Size'/'Ratio'^('Count'-1)

To get the classical single unpremult-blur-premult, use 'Count'=1 and set the size to the size of the blur kernel. However, near the mask borders, a frontier can be seen between the non-blurred area (this inside of the mask) and the blurred area. Using more blur sizes will give a much smoother transition.

The idea for the builtup blurs to expand RGB comes from the EdgeExtend effect for Nuke by Frank Rueter (except the blurs were merged from the smallest to the largest, and here it is done the other way round), with suggestions by Lucas Pfaff.

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### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Premult Source / `edgeExtendPremult` | Boolean | Off | Premultiply the source image by its alpha channel before processing. Do not check if the source matte is already premultiplied |
| Size / `edgeExtendSize` | Double | 20 | Maximum blur kernel size applied in the ExtendSlices filter. Raise to extend the edges further. |
| Slices / `edgeExtendSlices` | Integer | 5 | Number of blur kernels applied in the ExtendSlices filter. A count of 1 just merges the source image over the source image blurred by a kernel of size Size. |
| Unpremult Result / `edgeExtendUnpremult` | Boolean | Off | Unpremultiply the result image by its alpha channel after processing. |
| Filter / `filter` | Choice | Quasi-Gaussian | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by 1.5*size (3.6*sigma). |
| Crop To Format / `cropToFormat` | Boolean | On | If the source is inside the format and the effect extends it outside of the format, crop it to avoid unnecessary calculations. To avoid unwanted crops, only the borders that were inside of the format in the source clip will be cropped. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.13 Erode node



*This documentation is for version 2.1 of Erode (net.sf.cimg.CImgErode).*

### Description

Erode (or dilate) input stream by a rectangular structuring element of specified size and Neumann boundary conditions (pixels out of the image get the value of the nearest pixel).

A negative size will perform a dilation instead of an erosion.

Different sizes can be given for the x and y axis.

Uses the 'erode' and 'dilate' functions from the CImg library.

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### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Integer | x: 1 y: 1 | Width/height of the rectangular structuring element is 2*size+1, in pixel units (>=0). |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by 2*size pixels if size is negative |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.14 ErodeBlur node

*This documentation is for version 4.0 of ErodeBlur (eu.cimg.ErodeBlur).*

### Description

Performs an operation that looks like an erosion or a dilation by smoothing the image and then remapping the values of the result.

The image is first smoothed by a triangle filter of width 2*abs(size).

Now suppose the image is a 0-1 step edge (I=0 for x less than 0, I=1 for x greater than 0). The intensities are linearly remapped so that the value at x=size-0.5 is mapped to 0 and the value at x=size+0.5 is mapped to 1.

This process usually works well for mask images (i.e. images which are either 0 or 1), but may give strange results on images with real intensities, where another Erode filter has to be used.

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### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Double | -1 | How much to shrink the black and white mask, in pixels (can be negative to dilate). |
| Blur / `blur` | Double | 0 | Soften the borders of the generated mask. |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by 1.5*size (3.6*sigma). |
| Crop To Format / `cropToFormat` | Boolean | On | If the source is inside the format and the effect extends it outside of the format, crop it to avoid unnecessary calculations. To avoid unwanted crops, only the borders that were inside of the format in the source clip will be cropped. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.15 ErodeSmooth node



*This documentation is for version 2.0 of ErodeSmooth (net.sf.cimg.CImgErodeSmooth).*

### Description

Erode or dilate input stream using a normalized power-weighted filter.

This gives a smoother result than the Erode or Dilate node.

See “Robust local max-min filters by normalized power-weighted filtering” by L.J. van Vliet, http://dx.doi.org/10.1109/ICPR.2004.1334273

Uses the ‘vanvliet’ and ‘deriche’ functions from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Range / `range` | Double | min: 0 max: 1 | Expected range for input values. |
| Size / `size` | Double | x: 0 y: 0 | Size (diameter) of the filter kernel, in pixel units (>=0). The standard deviation of the corresponding Gaussian is size/2.4. No filter is applied if size < 1.2. Negative values correspond to dilation, positive values to erosion. Both values should have the same sign. |
| Uniform / `uniform` | Boolean | Off | Apply the same amount of blur on X and Y. |
| Exponent / `exponent` | Integer | 5 | Exponent of the normalized power-weighted filter. Lower values give a smoother result. Default is 5. |
| Border Conditions / `boundary` | Choice | Nearest | Specifies how pixel values are computed out of the image domain. This mostly affects values at the boundary of the image. If the image represents intensities, Nearest (Neumann) conditions should be used. If the image represents gradients or derivatives, Black (Dirichlet) boundary conditions should be used.<br>**Black (black)**: Dirichlet boundary condition: pixel values out of the image domain are zero.<br>**Nearest (nearest)**: Neumann boundary condition: pixel values out of the image domain are those of the closest pixel location in the image domain. |

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Table 113 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Quadratic | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| Expand RoD / `expandRoD` | Boolean | On | Expand the source region of definition by 1.5*size (3.6*sigma). |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.16 Fill node

*This documentation is for version 1.0 of Fill (fr.inria.Fill).*

#### Description

Add a constant color on the source image where the alpha channel not 0. You can control the blending between the original image and the constant color with the operator and the mix factor.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| Color / `Solid1color` | Color | r: 0 g: 0 b: 0 | |
| Operation / `Merge1operation` | Choice | over | **atop**: Ab + B(1 - a) (a.k.a. src-atop)<br>**average**: (A + B) / 2<br>**color**: SetLum(A, Lum(B))<br>**color-burn**: darken B towards A<br>**color-dodge**: brighten B towards A<br>**conjoint-over**: A + B(1-a)/b, A if a > b<br>**copy**: A (a.k.a. src)<br>**difference**: abs(A-B) (a.k.a. absminus)<br>**disjoint-over**: A+B(1-a)/b, A+B if a+b < 1<br>**divide**: A/B, 0 if A < 0 and B < 0<br>**exclusion**: A+B-2AB<br>**freeze**: 1-sqrt(1-A)/B<br>**from**: B-A (a.k.a. subtract)<br>**geometric**: 2AB/(A+B)<br>**grain-extract**: B - A + 0.5<br>**grain-merge**: B + A - 0.5<br>**hard-light**: multiply(2*A, B) if A < 0.5, screen(2*A - 1, B) if A > 0.5<br>**hue**: SetLum(SetSat(A, Sat(B)), Lum(B))<br>**hypot**: sqrt(A*A+B*B)<br>**in**: Ab (a.k.a. src-in)<br>**luminosity**: SetLum(B, Lum(A))<br>**mask**: Ba (a.k.a dst-in)<br>**matte**: Aa + B(1-a) (unpremultiplied over)<br>**max**: max(A, B) (a.k.a. lighten only)<br>**min**: min(A, B) (a.k.a. darken only)<br>**minus**: A-B<br>**multiply**: AB, A if A < 0 and B < 0<br>**out**: A(1-b) (a.k.a. src-out)<br>**over**: A+B(1-a) (a.k.a. src-over)<br>**overlay**: multiply(A, 2*B) if B < 0.5, screen(A, 2*B - 1) if B > 0.5<br>**pinlight**: if B >= 0.5 then max(A, 2*B - 1), min(A, B * 2) else<br>**plus**: A+B (a.k.a. add)<br>**reflect**: A*A / (1 - B)<br>**saturation**: SetLum(SetSat(B, Sat(A)), Lum(B))<br>**screen**: A+B-AB if A or B <= 1, otherwise max(A, B)<br>**soft-light**: burn-in if A < 0.5, lighten if A > 0.5<br>**stencil**: B(1-a) (a.k.a. dst-out)<br>**under**: A(1-b)+B (a.k.a. dst-over)<br>**xor**: A(1-b)+B(1-a) |

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Table 114 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mask / `Merge1enableMask_Mask` | Boolean | Off | |
| / `Merge1maskChannel_Mask` | Choice | | **None** |
| Invert Mask / `Merge1maskInvert` | Boolean | Off | |
| Mix / `Merge1mix` | Double | 1 | |

## 2.8.17 GMICExpr node

*This documentation is for version 2.1 of GMICExpr (net.sf.cimg.CImgExpression).*

### Description

Quickly generate or process image from mathematical formula evaluated for each pixel. Full documentation for G'MIC/CImg expressions is reproduced below and available online from the G'MIC help. The only additions of this plugin are the predefined variables `T` (current time) and `K` (render scale).

Uses the 'fill' function from the CImg library. CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Sample expressions

- '`j(sin(y/100/K+T/10)*20*K,sin(x/100/K+T/10)*20*K)`' distorts the image with time-varying waves.
- '`0.5*(j(1)-j(-1))`' estimates the X-derivative of an image with a classical finite difference scheme.
- '`if(x%10==0,1,i)`' draws blank vertical lines on every 10th column of an image.
- '`sqrt(zr=-1.2+2.4*x/w;zi=-1.2+2.4*y/h;for(i=0,zr*zr+zi*zi<=4&&i<256, t=zr*zr-zi*zi+0.4;zi=2*zr*zi+0.2;zr=t; i=i+1))/255`' draws the Mandelbrot fractal (give it a 1024x1024 image as input).

### Expression language

- The expression is evaluated for each pixel of the selected images.
- The mathematical parser understands the following set of functions, operators and variables:
  - **Usual operators:** `||` (logical or), `&&` (logical and), `|` (bitwise or), `&` (bitwise and), `!=`, `==`, `<=`, `>=`, `<`, `>`, `<<` (left bitwise shift), `>>` (right bitwise shift), `-`, `+`, `*`, `/`, `%` (modulo), `^` (power), `!` (logical not), `~` (bitwise not), `++`, `--`, `+=`, `-=`, `*=`, `/=`, `%=`, `&=`, `|=`, `^=`, `>>=`, `<<=` (in-place operators).

- **Usual math functions:** abs(), acos(), arg(), argkth(), argmax(), argmin(), asin(), atan(), atan2(), avg(), bool(), cbrt(), ceil(), cos(), cosh(), cut(), exp(), fact(), fibo(), floor(), gauss(), int(), isval(), isnan(), isinf(), isint(), isbool(), isfile(), isdir(), isin(), kth(), log(), log2(), log10(), max(), mean(), med(),min(),narg(), prod(),rol()(left bit rotation),ror()(right bit rotation),round(),sign(),sin(),sinc(), sinh(),sqrt(),std(),srand(_seed),sum(),tan(),tanh(),variance(),xor(). * 'atan2(y,x)' is the version of 'atan()' with two arguments __'y'__ and __'x'__ (as in C/C\+\+). * 'permut(k,n,with_order)' computes the number of permutations of __k__ objects from a set of __n__ objects. * 'gauss(x,_sigma)' returns __'exp(-x\^2/(2*s\ ^2))/sqrt(2*pi*sigma\^2)'__. * 'cut(value,min,max)' returns value if it is in range __\[min,max\]__, or __min__ or __max__ otherwise. * 'narg(a_1,...,a_N)' returns the number of specified arguments (here, __N__). * 'arg(i,a_1,..,a_N)' returns the __ith__ argument __a_i__. * 'isval()', 'isnan()', 'isinf()', 'isint()', 'isbool()' test the type of the given number or expression, and return __0 (false)__ or __1 (true)__. * 'isfile()' (resp. 'isdir()') returns __0 (false)__ or __1 (true)__ whether its argument is a path to an existing file (resp. to a directory) or not. * 'isin(v,a_1,...,a_n)' returns __0 (false)__ or __1 (true)__ whether the first value __'v'__ appears in the set of other values 'a_i'. * 'argmin()', 'argmax()', 'kth()', 'max()', 'mean()', 'med()', 'min()', 'std()', 'sum()' and 'variance()' can be called with an arbitrary number of scalar/vector arguments. * 'round(value,rounding_value,direction)`' returns a rounded value. **'direction'** can be **{ -1=to-lowest | 0=to-nearest | 1=to-highest }**.
- **Variable names** below are pre-defined. They can be overridden.
  - 'l': length of the associated list of images.
  - 'w': width of the associated image, if any (**0** otherwise).
  - 'h': height of the associated image, if any (**0** otherwise).
  - 'd': depth of the associated image, if any (**0** otherwise).
  - 's': spectrum of the associated image, if any (**0** otherwise).
  - 'r': shared state of the associated image, if any (**0** otherwise).
  - 'wh': shortcut for width x height.
  - 'whd': shortcut for width x height x depth.
  - 'whds': shortcut for width x height x depth x spectrum (i.e. number of image values).
  - 'im','iM','ia','iv','is','ip','ic': Respectively the minimum, maximum, average, variance, sum, product and median value of the associated image, if any (**0** otherwise).
  - 'xm','ym','zm','cm': The pixel coordinates of the minimum value in the associated image, if any (**0** otherwise).
  - 'xM','yM','zM','cM': The pixel coordinates of the maximum value in the associated image, if any (**0** otherwise).
  - All these variables are considered as **constant values** by the math parser (for optimization purposes) which is indeed the case most of the time. Anyway, this might not be the case, if function 'resize(#ind,..)' is used in the math expression. If so, it is safer to invoke functions 'l()', 'w(_#ind)', 'h(_#ind)', ... 's(_#ind)' and 'ic(_#ind)' instead of the corresponding named variables.
  - 'i': current processed pixel value (i.e. value located at **(x,y,z,c)**) in the associated image, if any (**0** otherwise).
  - 'iN': Nth channel value of current processed pixel (i.e. value located at **(x,y,z,N)**) in the associated image, if any (**0** otherwise). **'N'** must be an integer in range **[0,9]**.
  - 'R','G','B' and 'A' are equivalent to 'i0', 'i1', 'i2' and 'i3' respectively.

    * 'I': current vector-valued processed pixel in the associated image, if any (**0** otherwise). The number of vector components is equal to the number of image channels (e.g. **I = [ R,G,B ]** for a **RGB** image).
    * You may add '#ind' to any of the variable name above to retrieve the information for any numbered image **[ind]** of the list (when this makes sense). For instance 'ia#0' denotes the average value of the first image of the list).
    * 'x': current processed column of the associated image, if any (**0** otherwise).
    * 'y': current processed row of the associated image, if any (**0** otherwise).
    * 'z': current processed slice of the associated image, if any (**0** otherwise).
    * 'c': current processed channel of the associated image, if any (**0** otherwise).
    * 't': thread id when an expression is evaluated with multiple threads (**0** means 'master thread').
    * 'T': current time [OpenFX-only].
    * 'K': render scale (1 means full scale, 0.5 means half scale) [OpenFX-only].
    * 'e': value of e, i.e. **2.71828...**
    * 'pi': value of pi, i.e. **3.1415926...**
    * 'u': a random value between **[0,1]**, following a uniform distribution.
    * 'g': a random value, following a gaussian distribution of variance 1 (roughly in **[-6,6]**).
    * 'interpolation': value of the default interpolation mode used when reading pixel values with the pixel access operators (i.e. when the interpolation argument is not explicitly specified, see below for more details on pixel access operators). Its initial default value is **0**.
    * 'boundary': value of the default boundary conditions used when reading pixel values with the pixel access operators (i.e. when the boundary condition argument is not explicitly specified, see below for more details on pixel access operators). Its initial default value is **0**.

- **Vector calculus:** Most operators are also able to work with vector-valued elements.
    * '[ a0,a1,...,aN ]' defines a **(N+1)**-dimensional vector with scalar coefficients **ak**.
    * 'vectorN(a0,a1,,...,)' does the same, with the **ak** being repeated periodically if only a few are specified.
    * In both previous expressions, the **ak** can be vectors themselves, to be concatenated into a single vector.
    * The scalar element **ak** of a vector **X** is retrieved by 'X[k]'.
    * The sub-vector **[ X[p]...X[p+q-1] ]** (of size **q**) of a vector **X** is retrieved by 'X[p,q]'.
    * Equality/inequality comparisons between two vectors is done with operators '==' and '!='.
    * Some vector-specific functions can be used on vector values: 'cross(X,Y)' (cross product), 'dot(X,Y)' (dot product), 'size(X)' (vector dimension), 'sort(X,_is_increasing, _chunk_size)' (sorting values), 'reverse(A)' (reverse order of components), 'shift(A, _length,_boundary_conditions)' and 'same(A,B,_nb_vals,_is_case_sensitive)' (vector equality test).
    * Function 'normP(u1,...,un)' computes the LP-norm of the specified vector (P being an **unsigned integer** constant or **'inf'**). If P is omitted, the L2 norm is used.
    * Function 'resize(A,size,_interpolation,_boundary_conditions)' returns a resized version of a vector **'A'** with specified interpolation mode. **'interpolation'** can be **{ -1=none (memory content) | 0=none | 1=nearest | 2=average | 3=linear | 4=grid | 5=bicubic | 6=lanczos }**, and **'boundary_conditions'** can be **{ 0=dirichlet | 1=neumann | 2=periodic | 3=mirror }**.
    * Function 'find(A,B,_is_forward,_starting_indice)' returns the index where sub-vector **B** appears in vector **A**, (or **-1** if **B** is not found in **A**). Argument **A** can be also replaced by an image indice **#ind**.

    * A **2**-dimensional vector may be seen as a complex number and used in those particular functions/operators: '`**`' (complex multiplication), '`//`' (complex division), '`^^`' (complex exponentiation), '`**=`' (complex self-multiplication), '`//=`' (complex self-division), '`^^=`' (complex self-exponentiation), '`cabs()`' (complex modulus), '`carg()`' (complex argument), '`cconj()`' (complex conjugate), '`cexp()`' (complex exponential) and '`clog()`' (complex logarithm).
    * A **MN**-dimensional vector may be seen as a **M** x **N** matrix and used in those particular functions/operators: '`*`' (matrix-vector multiplication), '`det(A)`' (determinant), '`diag(V)`' (diagonal matrix from a vector), '`eig(A)`' (eigenvalues/eigenvectors), '`eye(n)`' (n x n identity matrix), '`inv(A)`' (matrix inverse), '`mul(A,B,_nb_colsB)`' (matrix-matrix multiplication), '`pseudoinv(A,_nb_colsA)`', '`rot(u,v,w,angle)`' (3d rotation matrix), '`rot(angle)`' (2d rotation matrix), '`solve(A,B,_nb_colsB)`' (least-square solver of linear system A.X = B), '`svd(A,_nb_colsA)`' (singular value decomposition), '`trace(A)`' (matrix trace) and '`transp(A,nb_colsA)`' (matrix transpose). Argument '`nb_colsB`' may be omitted if it is equal to **1**.
    * Specifying a vector-valued math expression as an argument of a command that operates on image values (e.g. '`fill`') modifies the whole spectrum range of the processed image(s), for each spatial coordinates **(x,y,z)**. The command does not loop over the **C**-axis in this case.

- **String manipulation:** Character strings are defined and managed as vectors objects. Dedicated functions and initializers to manage strings are
    * `[ 'string' ]` and `'string'` define a vector whose values are the ascii codes of the specified **character string** (e.g. `'foo'` is equal to **[ 102,111,111 ]**).
    * `_'character'` returns the (scalar) ascii code of the specified character (e.g. `_'A'` is equal to **65**).
    * A special case happens for **empty** strings: Values of both expressions `[ '' ]` and `''` are **0**.
    * Functions '`lowercase()`' and '`uppercase()`' return string with all string characters lowercased or uppercased.
    * Function '`stov(str,_starting_indice,_is_strict)`' parses specified string '`str`' and returns the value contained in it.
    * Function '`vtos(expr,_nb_digits,_siz)`' returns a vector of size '`siz`' which contains the ascii representation of values described by expression '`expr`'. '`nb_digits`' can be **{ -1=auto-reduced | 0=all | >0=max number of digits }**.
    * Function '`echo(str1,str2,...,strN)`' prints the concatenation of given string arguments on the console.
    * Function '`cats(str1,str2,...,strN,siz)`' returns the concatenation of given string arguments as a new vector of size '`siz`'.
- **Special operators** can be used:
    * '`;`': expression separator. The returned value is always the last encountered expression. For instance expression '`1;2;pi`' is evaluated as '`pi`'.
    * '`=`': variable assignment. Variables in mathematical parser can only refer to numerical values (vectors or scalars). Variable names are case-sensitive. Use this operator in conjunction with '`;`' to define more complex evaluable expressions, such as '`t=cos(x);3*t^2+2*t+1`'. These variables remain **local** to the mathematical parser and cannot be accessed outside the evaluated expression.
    * Variables defined in math parser may have a **constant** property, by specifying keyword `const` before the variable name (e.g. `const foo = pi/4;`). The value set to such a variable must be indeed a `constant scalar`. Constant variables allows certain types of optimizations in the math JIT compiler.
- The following **specific functions** are also defined:
    * '`u(max)`' or '`u(min,max)`': return a random value between **[0,max]** or **[min,max]**, following a uniform distribution.

* '`i(_a,_b,_c,_d,_interpolation_type,_boundary_conditions)`': return the value of the pixel located at position **(a,b,c,d)** in the associated image, if any (**0** otherwise). **'interpolation_type'** can be **{ 0=nearest neighbor | other=linear }**. **'boundary_conditions'** can be **{ 0=dirichlet | 1=neumann | 2=periodic | 3=mirror }**. Omitted coordinates are replaced by their default values which are respectively `x, y, z, c, interpolation` and `boundary`. For instance command '`fill 0.5*(i(x+1)-i(x-1))`' will estimate the X-derivative of an image with a classical finite difference scheme.
* '`j(_dx,_dy,_dz,_dc,_interpolation_type,_boundary_conditions)`' does the same for the pixel located at position **(x+dx,y+dy,z+dz,c+dc)** (pixel access relative to the current coordinates).
* '`i[offset,_boundary_conditions]`' returns the value of the pixel located at specified **'offset'** in the associated image buffer (or **0** if offset is out-of-bounds).
* '`j[offset,_boundary_conditions]`' does the same for an offset relative to the current pixel coordinates **(x,y,z,c)**.
* '`i(#ind,_x,_y,_z,_c,_interpolation,_boundary_conditions)`', '`j(#ind,_dx,_dy,_dz,_dc,_interpolation,_boundary_conditions)`', '`i[#ind,offset,_boundary_conditions]`' and '`i[offset,_boundary_conditions]`' are similar expressions used to access pixel values for any numbered image **[ind]** of the list.
* '`I/J[offset,_boundary_conditions]`' and '`I/J(#ind,_x,_y,_z,_interpolation,_boundary_conditions)`' do the same as '`i/j[offset,_boundary_conditions]`' and '`i/j(#ind,_x,_y,_z,_c,_interpolation,_boundary_conditions)`' but return a vector instead of a scalar (e.g. a vector **[ R,G,B ]** for a pixel at **(a,b,c)** in a color image).
* '`sort(#ind,_is_increasing,_axis)`' sorts the values in the specified image **[ind]**.
* '`crop(_#ind,_x,_y,_z,_c,_dx,_dy,_dz,_dc,_boundary_conditions)`' returns a vector whose values come from the cropped region of image **[ind]** (or from default image selected if '`ind`' is not specified). Cropped region starts from point **(x,y,z,c)** and has a size of **dx x dy x dz x dc**. Arguments for coordinates and sizes can be omitted if they are not ambiguous (e.g. '`crop(#ind,x,y,dx,dy)`' is a valid invocation of this function).
* '`draw(_#ind,S,x,y,z,c,dx,_dy,_dz,_dc,_opacity,_M,_max_M)`' draws a sprite **S** in image **[ind]** (or in default image selected if '`ind`' is not specified) at coordinates **(x,y,z,c)**. The size of the sprite **dx x dy x dz x dc** must be specified. You can also specify a corresponding opacity mask **M** if its size matches **S**.
* '`resize(#ind,w,_h,_d,_s,_interp,_boundary_conditions,cx,_cy,_cz,_cc)`' resizes an image of the associated list with specified dimension and interpolation method. When using this, function, you should consider retrieving the (non-constant) image dimensions using the dynamic functions '`w(_#ind)`', '`h(_#ind)`', '`d(_#ind)`', '`s(_#ind)`', '`wh(_#ind)`', '`whd(_#ind)`' and '`whds(_#ind)`' instead of the corresponding constant variables.
* '`if(condition,expr_then,_expr_else)`': return value of '`expr_then`' or '`expr_else`', depending on the value of '`condition`' **(0=false, other=true)**. '`expr_else`' can be omitted in which case **0** is returned if the condition does not hold. Using the ternary operator '`condition?expr_then[:expr_else]`' gives an equivalent expression. For instance, expressions '`if(x%10==0,255,i)`' and '`x%10?i:255`' both draw blank vertical lines on every 10th column of an image.
* '`dowhile(expression,_condition)`' repeats the evaluation of '`expression`' until '`condition`' vanishes (or until '`expression`' vanishes if no '`condition`' is specified). For instance, the expression: '`if(N<2,N,n=N-1;F0=0;F1=1;dowhile(F2=F0+F1;F0=F1;F1=F2,n=n-1))`' returns the Nth value of the Fibonacci sequence, for **N>=0** (e.g., **46368** for **N=24**). '`dowhile(expression,condition)`' always evaluates the specified expression at least once, then check for the loop condition. When done, it returns the last value of '`expression`'.
* '`for(init,condition,_procedure,body)`' first evaluates the expression '`init`', then iteratively evaluates '`body`' (followed by '`procedure`' if specified) while '`condition`' is verified (i.e. not zero). It may happen that no iteration is done, in which case the function returns

**nan**. Otherwise, it returns the last value of 'body'. For instance, the expression: 'if(N<2, N,for(n=N;F0=0;F1=1,n=n-1,F2=F0+F1;F0=F1;F1=F2))' returns the **Nth** value of the Fibonacci sequence, for **N>=0** (e.g., **46368** for **N=24**).

* 'whiledo(condition,expression)' is exactly the same as 'for(init,condition, expression)' without the specification of an initializing expression.
* 'break()' and 'continue()' respectively breaks and continues the current running bloc (loop, init or main environment).
* 'date(attr,path)' returns the date attribute for the given 'path' (file or directory), with **'attr'** being **{ 0=year | 1=month | 2=day | 3=day of week | 4=hour | 5=minute | 6=second }**, or a vector of those values.
* 'date(_attr) returns the specified attribute for the current (locale) date.
* 'print(expr1,expr2,...) or'print(#ind) prints the value of the specified expressions (or image information) on the console, and returns the value of the last expression (or **nan** in case of an image). Function 'prints(expr)' also prints the string composed of the ascii characters defined by the vector-valued expression (e.g. 'prints('Hello')').
* 'debug(expression) prints detailed debug information about the sequence of operations done by the math parser to evaluate the expression (and returns its value).
* 'display(_X,_w,_h,_d,_s) or'display(#ind) display the contents of the vector 'X' (or specified image) and wait for user events. if no arguments are provided, a memory snapshot of the math parser environment is displayed instead.
* 'init(expression) and'end(expression) evaluates the specified expressions only once, respectively at the beginning and end of the evaluation procedure, and this, even when multiple evaluations are required (e.g. in 'fill init(foo=0);++foo').
* 'copy(dest,src,_nb_elts,_inc_d,_inc_s,_opacity) copies an entire memory block of'nb_elts' elements starting from a source value 'src' to a specified destination 'dest', with increments defined by 'inc_d' and 'inc_s' respectively for the destination and source pointers.
* 'unref(a,b,...) destroys references to the named variable given as arguments.
* 'stats(_#ind) returns the statistics vector of the running image **[ind]**, i.e the vector **[ im,iM,ia,iv,xm,ym,zm,cm,xM,yM,zM,cM,is,ip ]** (14 values).
* '_(expr) just ignores its arguments (mainly useful for debugging).

– **User-defined macros:**

* Custom macro functions can be defined in a math expression, using the assignment operator '=', e.g. 'foo(x,y) = cos(x + y); result = foo(1,2) + foo(2,3)'.
* Trying to override a built-in function (e.g. 'abs()') has no effect.
* Overloading macros with different number of arguments is possible. Re-defining a previously defined macro with the same number of arguments discards its previous definition.
* Macro functions are indeed processed as **macros** by the mathematical evaluator. You should avoid invoking them with arguments that are themselves results of assignments or self-operations. For instance, 'foo(x) = x + x; z = 0; foo(++z)' returns **'4'** rather than expected value **'2'**.
* When substituted, macro arguments are placed inside parentheses, except if a number sign '#' is located just before or after the argument name. For instance, expression 'foo(x,y) = x*y; foo(1+2,3)' returns **'9'** (being substituted as '(1+2)*(3)'), while expression 'foo(x,y) = x#*y#; foo(1+2,3)' returns **'7'** (being substituted as '1+2*3').
* Number signs appearing between macro arguments function actually count for 'empty' separators. They may be used to force the substitution of macro arguments in unusual places, e.g. as in 'str(N) = ['I like N#'];'.

– **Multi-threaded** and **in-place** evaluation:

* If your image data are large enough and you have several CPUs available, it is likely that the math expression passed to a '`fill`' or '`input`' command is evaluated in parallel, using multiple computation threads.
* Starting an expression with '`:`' or '`*`' forces the evaluations required for an image to be run in parallel, even if the amount of data to process is small (beware, it may be slower to evaluate in this case!). Specify '`:`' (instead of '`*`') to avoid possible image copy done before evaluating the expression (this saves memory, but do this only if you are sure this step is not required!)
* If the specified expression starts with '>' or '<', the pixel access operators '`i()`', '`i[]`', '`j()`' and '`j[]`' return values of the image being currently modified, in forward ('>') or backward ('<') order. The multi-threading evaluation of the expression is also disabled in this case.
* Function '`critical(operands)`' forces the execution of the given operands in a single thread at a time.

– Expressions '`i(_#ind,x,_y,_z,_c)=value`', '`j(_#ind,x,_y,_z,_c)=value`', '`i[_#ind,offset]=value`' and '`j[_#ind,offset]=value`' set a pixel value at a different location than the running one in the image **[ind]** (or in the associated image if argument '`#ind`' is omitted), either with global coordinates/offsets (with '`i(...)`' and '`i[...]`'), or relatively to the current position **(x,y,z,c)** (with '`j(...)`' and '`j[...]`'). These expressions always return '`value`'.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Expression / `expression` | String | i | G'MIC/CImg expression, see the plugin description/help, or http://gmic.eu/reference.shtml#section9 |
| Help… / `help` | Button | | Display help for writing GMIC expressions. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.18 Glow node

*This documentation is for version 1.0 of Glow (fr.inria.Glow).*

### Description

A glow effect based on the bloom filter node. The mask input limits the area where the glowing elements are. It does not cut off the shine produced by the glow.

For more interesting looks there are some additional features like stretch, rotation and postgrade.

Written by PostPollux

### Inputs

| Input | Description | Optional |
|---|---|---|
| 1 | | No |
| mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| Isolate Highlights / `isolateHighlights` | Double | 0.25 | "Isolate Highlights" controls on which parts of the image the glow is applied.<br><br>high value -> only bright areas |
| Isolate Hue / `isolateHue` | Boolean | Off | If checked, the picked hue will additionally limit the areas of the glow. |
| pick Hue / `HSVTool1srcColor` | Color | r: 0 g: 0 b: 0 | Pick a color in the viewport to isolate it's hue.<br><br>The glow will only be applied to those areas, if 'Isolate Hue' is checked. |
| GlowMap Preview / `preview` | Boolean | Off | When checked, the output will be the glowmap. Use this as a preview to adjust the highlight and hue isolation. |
| Size / `size` | Double | 3 | This will change the size of the glow. |
| Ratio / `BloombloomRatio` | Double | 2 | |
| Iterations / `iterations` | Integer | 7 | Number of blur kernels of the bloom filter. The original implementation uses a value of 5. Higher values give a wider of heavier tail (the size of the largest blur kernel is 2**bloomCount*size). A count of 1 is just the original blur. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `Bloomfilter` | Choice | Quasi-Gaussian | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>Quadratic might also look a bit better, but it is slower, too.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| Stretch / `stretch` | Double | 0 | Stretch the glow!<br><br>0 -> uniform proportions<br>1 -> blur only in one direction |
| Rotate / `rotate` | Double | 0 | This will rotate your stretched glow. If "Stretch" is 0 it won't have any effect. |
| Gain / `PostGradeMasterGain` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Gamma / `PostGradeMasterGamma` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Saturation / `PostGradeMasterSaturation` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Screen / `screen` | Boolean | Off | If checked, the bloomed image will be screened on top of the input image. This helps to preserve the highlights in your image.<br><br>By default it is added on top of the imput image. (plus) |
| Add Input / `addInput` | Boolean | Off | Add the input image to the bloomed one. |
| Glow Only / `glowOnly` | Boolean | Off | The output will only be the glow effect itself.<br><br>You can add it on top of your source with a plus-merge or a screen-merge, later. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| expand RoD / `expRoD` | Boolean | Off | By default the Region of Definition (RoD) will be cropped to the input RoD.<br>Use this option, if you want the glow effect to be available even outside your input format, and thus being not cropped.<br>As the blur sizes of the bloom node can get very big, this may lead to a very big RoD! Especially, if you use a lot of iterations. |
| apply on alpha / `alpha` | Boolean | Off | Controls if the glow is applied to the alpha channel, too. |

### 2.8.19 GodRays node

*This documentation is for version 1.0 of GodRays (net.sf.openfx.GodRays).*

#### Description

Average an image over a range of transforms.

This can be used to create crepuscular rays (also called God rays) by setting the scale and center parameters: scale governs the length of rays, and center should be set to the Sun or light position (which may be outside of the image).

Setting toColor to black and gamma to 1 causes an exponential decay which is very similar to the real crepuscular rays.

This can also be used to create directional blur using a fixed number of samples (as opposed to DirBlur, which uses an adaptive sampling method).

This plugin concatenates transforms upstream.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Rotate / `rotate` | Double | 0 | Rotation angle in degrees around the Center. Can also be adjusted by clicking and dragging the rotation bar in the Viewer. |
| Scale / `scale` | Double | x: 1 y: 1 | Scale factor along the x and y axes. Can also be adjusted by clicking and dragging the outer circle or the diameter handles in the Viewer. |
| Uniform / `uniform` | Boolean | Off | Use the X scale for both directions |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Skew X / `skewX` | Double | 0 | Skew along the x axis. Can also be adjusted by clicking and dragging the skew bar in the Viewer. |
| Skew Y / `skewY` | Double | 0 | Skew along the y axis. |
| Skew Order / `skewOrder` | Choice | XY | The order in which skew transforms are applied: X then Y, or Y then X.<br>**XY**<br>**YX** |
| Amount / `transformAmount` | Double | 1 | Amount of transform to apply. 0 means the transform is identity, 1 means to apply the full transform. |
| Center / `center` | Double | x: 0.5 y: 0.5 | Center of rotation and scale. |
| Reset Center / `resetCenter` | Button | | Reset the position of the center to the center of the input region of definition |
| Interactive Update / `interactive` | Boolean | On | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Invert / `invert` | Boolean | Off | Invert the transform. |
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | Off | Fill the area outside the source image with black |
| From Color / `fromColor` | Color | r: 1 g: 1 b: 1 a: 1 | Color by which the initial image is multiplied. |
| To Color / `toColor` | Color | r: 1 g: 1 b: 1 a: 1 | Color by which the final image is multiplied. |
| Gamma / `gamma` | Color | r: 1 g: 1 b: 1 a: 1 | Gamma space in which the colors are interpolated. Higher values yield brighter intermediate images. |

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Table 117 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Steps / `steps` | Integer | 5 | The number of intermediate images is 2^steps, i.e. 32 for steps=5. |
| Max / `max` | Boolean | Off | Output the brightest value at each pixel rather than the average. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.20 Inpaint node

*This documentation is for version 1.0 of Inpaint (eu.cimg.Inpaint).*

#### Description

Inpaint (a.k.a. content-aware fill) the areas indicated by the Mask input using patch-based inpainting.

Be aware that this filter may produce different results on each frame of a video, even if there is little change in the video content. To inpaint areas with lots of details, it may be better to inpaint on a single frame and paste the inpainted area on other frames (if a transform is also required to match the other frames, it may be computed by tracking).

A tutorial on using this filter can be found at http://blog.patdavid.net/2014/02/getting-around-in-gimp-gmic-inpainting.html

The algorithm is described in the two following publications:

"A Smarter Examplar-based Inpainting Algorithm using Local and Global Heuristics for more Geometric Coherence." (M. Daisy, P. Buyssens, D. Tschumperlé, O. Lezoray). IEEE International Conference on Image Processing (ICIP'14), Paris/France, Oct. 2014

and

"A Fast Spatial Patch Blending Algorithm for Artefact Reduction in Pattern-based Image Inpainting." (M. Daisy, D. Tschumperlé, O. Lezoray). SIGGRAPH Asia 2013 Technical Briefs, Hong-Kong, November 2013.

Uses the 'inpaint' plugin from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu). The 'inpaint' CImg plugin is distributed under the CeCILL (compatible with the GNU GPL) license.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Patch Size / `patchSize` | Integer | 7 | |
| Lookup Size / `lookupSize` | Double | 16 | |
| Lookup Factor / `lookupFactor` | Double | 0.1 | |
| Blend Size / `blendSize` | Double | 1.2 | |
| Blend Threshold / `blendThreshold` | Double | 0 | |
| Blend Decay / `blendDecay` | Double | 0.05 | |
| Blend Scales / `blendScales` | Integer | 10 | |
| Allow Outer Blending / `isBlendOuter` | Boolean | On | |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.21 Laplacian node



*This documentation is for version 4.0 of Laplacian (net.sf.cimg.CImgLaplacian).*

### Description

Blur input stream, and subtract the result from the input image. This is not a mathematically correct Laplacian (which would be the sum of second derivatives over X and Y).

Uses the 'vanvliet' and 'deriche' functions from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Double | x: 3 y: 3 | Size (diameter) of the filter kernel, in pixel units (>=0). The standard deviation of the corresponding Gaussian is size/2.4. No blur is applied if size < 0.24 (Gaussian and quasi-Gaussian) or <= 1 (box, triangle and quadratic). |
| Uniform / `uniform` | Boolean | Off | Apply the same amount of blur on X and Y. |
| Filter / `filter` | Choice | Gaussian | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.22 Matrix3x3 node

*This documentation is for version 1.0 of Matrix3x3 (eu.cimg.CImgMatrix3x3).*

### Description

Compute the convolution of the input image with the specified matrix.

This works by multiplying each surrounding pixel of the input image with the corresponding matrix coefficient (the current pixel is at the center of the matrix), and summing up the results.

For example [-1 -1 -1] [-1 8 -1] [-1 -1 -1] produces an edge detection filter (which is an approximation of the Laplacian filter) by multiplying the center pixel by 8 and the surrounding pixels by -1, and then adding the nine values together to calculate the new value of the center pixel.

Uses the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| / `matrix31` | Double | 0 | Matrix coefficient. |
| / `matrix32` | Double | 0 | Matrix coefficient. |
| / `matrix33` | Double | 0 | Matrix coefficient. |
| / `matrix21` | Double | 0 | Matrix coefficient. |
| / `matrix22` | Double | 0 | Matrix coefficient. |
| / `matrix23` | Double | 0 | Matrix coefficient. |
| / `matrix11` | Double | 0 | Matrix coefficient. |
| / `matrix12` | Double | 0 | Matrix coefficient. |
| / `matrix13` | Double | 0 | Matrix coefficient. |
| Normalize / `normalize` | Boolean | Off | Normalize the matrix coefficients so that their sum is 1. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.23 Matrix5x5 node

*This documentation is for version 1.0 of Matrix5x5 (eu.cimg.CImgMatrix5x5).*

#### Description

Compute the convolution of the input image with the specified matrix.

This works by multiplying each surrounding pixel of the input image with the corresponding matrix coefficient (the current pixel is at the center of the matrix), and summing up the results.

For example [-1 -1 -1] [-1 8 -1] [-1 -1 -1] produces an edge detection filter (which is an approximation of the Laplacian filter) by multiplying the center pixel by 8 and the surrounding pixels by -1, and then adding the nine values together to calculate the new value of the center pixel.

Uses the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| / `matrix51` | Double | 0 | Matrix coefficient. |
| / `matrix52` | Double | 0 | Matrix coefficient. |
| / `matrix53` | Double | 0 | Matrix coefficient. |
| / `matrix54` | Double | 0 | Matrix coefficient. |
| / `matrix55` | Double | 0 | Matrix coefficient. |
| / `matrix41` | Double | 0 | Matrix coefficient. |
| / `matrix42` | Double | 0 | Matrix coefficient. |
| / `matrix43` | Double | 0 | Matrix coefficient. |
| / `matrix44` | Double | 0 | Matrix coefficient. |
| / `matrix45` | Double | 0 | Matrix coefficient. |
| / `matrix31` | Double | 0 | Matrix coefficient. |
| / `matrix32` | Double | 0 | Matrix coefficient. |

continues on next page

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| / matrix33 | Double | 0 | Matrix coefficient. |
| / matrix34 | Double | 0 | Matrix coefficient. |
| / matrix35 | Double | 0 | Matrix coefficient. |
| / matrix21 | Double | 0 | Matrix coefficient. |
| / matrix22 | Double | 0 | Matrix coefficient. |
| / matrix23 | Double | 0 | Matrix coefficient. |
| / matrix24 | Double | 0 | Matrix coefficient. |
| / matrix25 | Double | 0 | Matrix coefficient. |
| / matrix11 | Double | 0 | Matrix coefficient. |
| / matrix12 | Double | 0 | Matrix coefficient. |
| / matrix13 | Double | 0 | Matrix coefficient. |
| / matrix14 | Double | 0 | Matrix coefficient. |
| / matrix15 | Double | 0 | Matrix coefficient. |
| Normalize / normalize | Boolean | Off | Normalize the matrix coefficients so that their sum is 1. |
| (Un)premult / premult | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / maskInvert | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / mix | Double | 1 | Mix factor between the original and the transformed image. |

### 2.8.24 Median node

*This documentation is for version 2.0 of Median (net.sf.cimg.CImgMedian).*

#### Description

Apply a median filter to input images. Pixel values within a square box of the given size around the current pixel are sorted, and the median value is output if it does not differ from the current value by more than the given. Median filtering is performed per-channel.

Uses the 'blur_median' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Integer | 1 | Width and height of the structuring element is 2*size+1, in pixel units (>=0). |
| Threshold / `threshold` | Double | 0 | Threshold used to discard pixels too far from the current pixel value in the median computation. A threshold value of zero disables the threshold. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.25 Shadertoy node

*This documentation is for version 1.0 of Shadertoy (net.sf.openfx.Shadertoy).*

### Description

Apply a Shadertoy fragment shader.

This plugin implements Shadertoy 0.8.8, but multipass shaders and sound are not supported. Some multipass shaders can still be implemented by chaining several Shadertoy nodes, one for each pass.

Shadertoy 0.8.8 uses WebGL 1.0 (a.k.a. GLSL ES 1.0 from GLES 2.0), based on GLSL 1.20

Note that the more recent Shadertoy 0.9.1 uses WebGL 2.0 (a.k.a. GLSL ES 3.0 from GLES 3.0), based on GLSL 3.3

This help only covers the parts of GLSL ES that are relevant for Shadertoy. For the complete specification please have a look at GLSL ES 1.0 specification or pages 3 and 4 of the OpenGL ES 2.0 quick reference card. See also the Shadertoy/GLSL tutorial.

### Image shaders

Image shaders implement the `mainImage()` function in order to generate the procedural images by computing a color for each pixel. This function is expected to be called once per pixel, and it is responsibility of the host application to provide the right inputs to it and get the output color from it and assign it to the screen pixel. The prototype is:

```
void mainImage( out vec4 fragColor, in vec2 fragCoord );
```

where `fragCoord` contains the pixel coordinates for which the shader needs to compute a color. The coordinates are in pixel units, ranging from 0.5 to resolution-0.5, over the rendering surface, where the resolution is passed to the shader through the `iResolution` uniform (see below).

The resulting color is gathered in `fragColor` as a four component vector.

### Language:

- **Preprocessor:** `# #define #undef #if #ifdef #ifndef #else #elif #endif #error #pragma #extension #version #line`
- **Operators:** `()` + - ! * / % < > <= >= == != && | |
- **Comments:** `//` `/* */`
- **Types:** void bool int float vec2 vec3 vec4 bvec2 bvec3 bvec4 ivec2 ivec3 ivec4 mat2 mat3 mat4 sampler2D
- **Function Parameter Qualifiers:** [STRIKEOUT:none], in, out, inout
- **Global Variable Qualifiers:** const
- **Vector Components:** .xyzw .rgba .stpq
- **Flow Control:** if else for return break continue
- **Output:** vec4 fragColor
- **Input:** vec2 fragCoord

### Built-in Functions (details)

### Angle and Trigonometry Functions

- *type* radians (*type* degrees)
- *type* degrees (*type* radians)
- *type* sin (*type* angle)
- *type* cos (*type* angle)
- *type* tan (*type* angle)
- *type* asin (*type* x)
- *type* acos (*type* x)
- *type* atan (*type* y, *type* x)
- *type* atan (*type* y_over_x)

### Exponential Functions

- *type* pow (*type* x, *type* y)
- *type* exp (*type* x)
- *type* log (*type* x)
- *type* exp2 (*type* x)
- *type* log2 (*type* x)
- *type* sqrt (*type* x)
- *type* inversesqrt (*type* x)

### Common Functions

- *type* abs (*type* x)
- *type* sign (*type* x)
- *type* floor (*type* x)
- *type* ceil (*type* x)
- *type* fract (*type* x)
- *type* mod (*type* x, float y)
- *type* mod (*type* x, *type* y)
- *type* min (*type* x, *type* y)
- *type* min (*type* x, float y)
- *type* max (*type* x, *type* y)
- *type* max (*type* x, float y)
- *type* clamp (*type* x, *type* minV, *type* maxV)
- *type* clamp (*type* x, float minV, float maxV)
- *type* mix (*type* x, *type* y, *type* a)
- *type* mix (*type* x, *type* y, float a)
- *type* step (*type* edge, *type* x)
- *type* step (float edge, *type* x)
- *type* smoothstep (*type* a, *type* b, *type* x)
- *type* smoothstep (float a, float b, *type* x)

### Geometric Functions

- float length (*type* x)
- float distance (*type* p0, *type* p1)
- float dot (*type* x, *type* y)
- vec3 cross (vec3 x, vec3 y)
- *type* normalize (*type* x)
- *type* faceforward (*type* N, *type* I, *type* Nref)
- *type* reflect (*type* I, *type* N)

- *type* refract (*type* I, *type* N,float eta)

### Matrix Functions

- mat matrixCompMult (mat x, mat y)

### Vector Relational Functions

- bvec lessThan(vec x, vec y)
- bvec lessThan(ivec x, ivec y)
- bvec lessThanEqual(vec x, vec y)
- bvec lessThanEqual(ivec x, ivec y)
- bvec greaterThan(vec x, vec y)
- bvec greaterThan(ivec x, ivec y)
- bvec greaterThanEqual(vec x, vec y)
- bvec greaterThanEqual(ivec x, ivec y)
- bvec equal(vec x, vec y)
- bvec equal(ivec x, ivec y)
- bvec equal(bvec x, bvec y)
- bvec notEqual(vec x, vec y)
- bvec notEqual(ivec x, ivec y)
- bvec notEqual(bvec x, bvec y)
- bool any(bvec x)
- bool all(bvec x)
- bvec not(bvec x)

### Texture Lookup Functions

- vec4 texture2D(sampler2D sampler, vec2 coord )
- vec4 texture2D(sampler2D sampler, vec2 coord, float bias)
- vec4 textureCube(samplerCube sampler, vec3 coord)
- vec4 texture2DProj(sampler2D sampler, vec3 coord )
- vec4 texture2DProj(sampler2D sampler, vec3 coord, float bias)
- vec4 texture2DProj(sampler2D sampler, vec4 coord)
- vec4 texture2DProj(sampler2D sampler, vec4 coord, float bias)
- vec4 texture2DLodEXT(sampler2D sampler, vec2 coord, float lod)
- vec4 texture2DProjLodEXT(sampler2D sampler, vec3 coord, float lod)
- vec4 texture2DProjLodEXT(sampler2D sampler, vec4 coord, float lod)
- vec4 textureCubeLodEXT(samplerCube sampler, vec3 coord, float lod)
- vec4 texture2DGradEXT(sampler2D sampler, vec2 P, vec2 dPdx, vec2 dPdy)
- vec4 texture2DProjGradEXT(sampler2D sampler, vec3 P, vec2 dPdx, vec2 dPdy)

- vec4 texture2DProjGradEXT(sampler2D sampler, vec4 P, vec2 dPdx, vec2 dPdy)
- vec4 textureCubeGradEXT(samplerCube sampler, vec3 P, vec3 dPdx, vec3 dPdy)

### Function Derivatives

- *type* dFdx( *type* x ), dFdy( *type* x )
- *type* fwidth( *type* p )

### How-to

- **Use structs:** `struct myDataType { float occlusion; vec3 color; }; myDataType myData = myDataType(0.7, vec3(1.0, 2.0, 3.0));`
- **Initialize arrays:** arrays cannot be initialized in WebGL.
- **Do conversions:** `int a = 3; float b = float(a);`
- **Do component swizzling:** `vec4 a = vec4(1.0,2.0,3.0,4.0); vec4 b = a.zyyw;`
- **Access matrix components:** `mat4 m; m[1] = vec4(2.0); m[0][0] = 1.0; m[2][3] = 2.0;`

### Be careful!

- **the f suffix for floating point numbers:** 1.0f is illegal in GLSL. You must use 1.0
- **saturate():** saturate(x) doesn't exist in GLSL. Use clamp(x,0.0,1.0) instead
- **pow/sqrt:** please don't feed sqrt() and pow() with negative numbers. Add an abs() or max(0.0,) to the argument
- **mod:** please don't do mod(x,0.0). This is undefined in some platforms
- **variables:** initialize your variables! Don't assume they'll be set to zero by default
- **functions:** don't call your functions the same as some of your variables

### Shadertoy Inputs

| Type | Name | Function | Description |
|---|---|---|---|
| vec3 | iResolution | image | The viewport resolution (z is pixel aspect ratio, usually 1.0) |
| float | iTime | image/sound | Current time in seconds |
| float | iTimeDelta | image | Time it takes to render a frame, in seconds |
| int | iFrame | image | Current frame |
| float | iFrameRate | image | Number of frames rendered per second |
| float | iChannelTime[4] | image | Time for channel (if video or sound), in seconds |
| vec3 | iChannelResolution[4] | image/sound | Input texture resolution for each channel |
| vec2 | iChannelOffset[4] | image | Input texture offset in pixel coords for each channel |
| vec4 | iMouse | image | xy = current pixel coords (if LMB is down). zw = click pixel |
| sampler2D | iChannel{i} | image/sound | Sampler for input textures i |
| vec4 | iDate | image/sound | Year, month, day, time in seconds in .xyzw |
| float | iSampleRate | image/sound | The sound sample rate (typically 44100) |
| vec2 | iRenderScale | image | The OpenFX render scale (e.g. 0.5,0.5 when rendering half-size) [OFX plugin only] |

### Shadertoy Outputs

For image shaders, fragColor is used as output channel. It is not, for now, mandatory but recommended to leave the alpha channel to 1.0.

For sound shaders, the mainSound() function returns a vec2 containing the left and right (stereo) sound channel wave data.

### OpenFX extensions to Shadertoy

Shadertoy was extended to:

- Expose shader parameters as uniforms, which are presented as OpenFX parameters.
- Provide the description and help for these parameters directly in the GLSL code.
- Add a default uniform containing the render scale. In OpenFX, a render scale of 1 means that the image is rendered at full resolution, 0.5 at half resolution, etc. This can be used to scale parameter values so that the final aspect does not depend on the render scale. For example, a blur size parameter given in pixels at full resolution would have to be multiplied by the render scale.
- Add a default uniform containing the offset of the processed texture with respect to the position of the origin.

The extensions are:

- The pre-defined `iRenderScale` uniform contains the current render scale. Basically all pixel sizes must be multiplied by the renderscale to get a scale-independent effect. For compatibility with Shadertoy, the first line that starts with `const vec2 iRenderScale` is ignored (the full line should be `const vec2 iRenderScale = vec2(1.,1.);`).
- The pre-defined `iChannelOffset` uniform contains the texture offset for each channel relative to channel 0. For compatibility with Shadertoy, the first line that starts with `const vec2 iChannelOffset` is ignored (the full line should be `const vec2 iChannelOffset[4] = vec2[4]( vec2(0.,0.), vec2(0.,0.), vec2(0.,0.), vec2(0.,0.) );`).

- The shader may define additional uniforms, which should have a default value, as in `uniform vec2 blurSize = vec2(5., 5.);`. These uniforms can be made available as OpenFX parameters using settings in the 'Extra parameters' group, which can be set automatically using the 'Auto. Params' button (automatic parameters are only updated if the node is connected to a Viewer). A parameter label and help string can be given in the comment on the same line. The help string must be in parenthesis. `uniform vec2 blurSize = vec2(5., 5.); // Blur Size (The blur size in pixels.)` min/max values can also be given after a comma. The strings must be exactly `min=` and `max=`, without additional spaces, separated by a comma, and the values must have the same dimension as the uniform: `uniform vec2 blurSize = vec2(5., 5.); // Blur Size (The blur size in pixels.), min=(0.,0.), max=(1000.,1000.)`
- The following comment line placed in the shader gives a label and help string to input 1 (the comment must be the only thing on the line): `// iChannel1: Noise (A noise texture to be used for random number calculations. The texture should not be frame-varying.)`
- This one also sets the filter and wrap parameters: `// iChannel0: Source (Source image.), filter=linear, wrap=clamp`
- And this one sets the output bounding box (possible values are Default, Union, Intersection, and iChannel0 to iChannel3): `// BBox: iChannel0`

### Converting a Shadertoy for use in OpenFX

To better understand how to modify a Shadertoy for OpenFX, let use take the simple Gaussian blur example, which is also available as a preset in the Shadertoy node.

In Natron, create a new project, create a Shadertoy node, connect the input 1 of the Viewer to the output of the Shadertoy node. This should give you a blurry color image that corresponds to the default Shadertoy source code. The Shadertoy node should have four inputs, named "iChannel0" to "iChannel3".

In the Shadertoy node parameters, open the "Image Shader" group. You should see the GLSL source code. Now in the "Load from Preset" choice, select "Blur/Gaussian Blur". The viewer should display a black image, but you should also notice that the Shadertoy node now has two visible inputs: "Source" and "Modulate" (in Nuke, these inputs are still called iChannel0 and iChannel1). Create a Read node that reads a still image or a video, and connect it to the "Source" input. A blurred version of the image should now appear in the viewer. You should also notice that two parameters appeared at the top of the parameters for the Shadertoy node: "Size" and "Modulate". Play with the "Size" parameter and see how it affects the blur size (you may have to zoom on the image to see precisely the effect).

Now let us examine the modifications that were brought to the original GLSL code:

These three comment lines describe the label, filter, and wrap parameters for each input, as well as the size of the output bounding box (also called "region of definition"):

```
// iChannel0: Source, filter=linear, wrap=clamp
// iChannel1: Modulate (Image containing a factor to be applied to the Blur size in␣
↪the first channel), filter=linear, wrap=clamp
// BBox: iChannel0
```

Two constant global variables were added, which are ignored by the Shadertoy plugin, so that you can still copy-and-paste the source code in Shadertoy 0.8.8 and it still works (unfortunately, it does not work anymore with later versions of Shadertoy). You can safely ignore these:

```
const vec2 iRenderScale = vec2(1.,1.);
const vec2 iChannel0offset[4] = vec2[4]( vec2(0.,0.), vec2(0.,0.), vec2(0.,0.), vec2(0.
↪,0.) );
```

Then the uniform section gives the list of what will appear as OpenFX parameters, together with their default value, label, help string, and default range. Note that in the original Shadertoy code, the blur size was a constant hidden inside the code. Finding out the parameters of a Shadertoy requires precise code inspection. If you modify this part of the code, pressing the "Auto. Params" button will apply these changes to the OpenFX parameters:

```
uniform float size = 10.; // Size (Size of the filter kernel in pixel units. The␣
↪standard deviation of the corresponding Gaussian is size/2.4.), min=0., max=21.
uniform bool perpixel_size = false; // Modulate (Modulate the blur size by␣
↪multiplying it by the first channel of the Modulate input)
```

In the `mainImage` function, which does the processing, we compute the `mSize` and `kSize` variables, which are the kernel size and mask size for that particular algorithm, from the "Size" parameter, multiplied by the render scale to get a scale-invariant effect. If the "Modulate" check box is on, we also multiply the size by the value found in the first channel (which is red, not alpha) of the "Modulate" input, which is in the iChannel1 texture according to the comments at the beginning of the source code. This can be use to modulate the blur size depending on the position in the image. The "Modulate" input may be for example connected to the output of a Roto node (with the "R" checkbox checked in the Roto node). Since the Roto output may not have the same size and origin as the Source image, we take care of these by using the iChannelOffset and iChannelResolution values for input 1.

```
float fSize = size * iRenderScale.x;
if (perpixel_size) {
  fSize *= texture2D(iChannel1, (fragCoord.xy-iChannelOffset[1].xy)/
↪iChannelResolution[1].xy).x;
}
int kSize = int(min(int((fSize-1)/2), KSIZE_MAX));
int mSize = kSize*2+1;
```

In the rest of the code, the only difference is that the blur size is not constant and equal to 7, but comes from the fSize variable:

```
float sigma = fSize / 2.4;
```

### Issues with Gamma correction

OpenGL processing supposes all textures are linear, i.e. not gamma-compressed. This for example about bilinear interpolation on textures: this only works if the intensities are represented linearly. So a proper OpenGL rendering pipe should in principle:

1. Convert all textures to a linear representation (many 8-bit textures are gamma-compressed)
2. Render with OpenGL
3. Gamma-compress the linear framebuffer for display

When processing floating-point buffers in OpenFX, the color representation is usually linear, which means that the OpenFX host usually performs steps 1 and 3 anyway (that includes Natron and Nuke): the images given to an OpenFX plugins are in linear color space, and their output is also supposed to be linear.

However, many OpenGL applications, including Shadertoy and most games, skip steps 1 and 3 (mainly for performance issue): they process gamma-compressed textures as if they were linear, and sometimes have to boost their output by gamma compression so that it looks nice on a standard display (which usually accepts a sRGB-compressed framebuffer).

This is why many shaders from Shadertoy convert their output from linear to sRGB or gamma=2.2, see for example the `srgb2lin` and `lin2srgb` functions in https://www.shadertoy.com/view/XsfXzf . These conversions *must* be removed when using the shader in OpenFX.

An alternative solution would be to convert all Shadertoy inputs from linear to sRGB, and convert back all outputs to linear, either inside the Shadertoy node, or using external conversion nodes (such as OCIOColorSpace). But this is a bad option, because this adds useless processing. Removing the srgb2lin and lin2srgb conversions from the shader source is a much better option (these functions may have different names, or there may simply be operations line `pow(c,vec3(2.2))` and/or `pow(c,vec3(1./2.2))` in the GLSL code).

As an example, take a look at the changes made to the Barrel Blur Chroma Shadertoy: the OpenFX version is available as a preset in the Shadertoy node as "Effects/Barrel Blur Chroma". When it was converted to OpenFX, all gamma compression and decompression operations were identified and removed.

### Multipass shaders

Most multipass shaders (those using BufA, BufB, BufC, or BufD) can be implemented using the Shadertoy plugin.

The shader sources for two sample multipass shadertoys are available as Natron PyPlugs (but the shader sources are also available separately next to the PyPlugs if you want to use these in another OpenFX host:

- a 3-pass circular bokeh blur (available as Community/GLSL/BokehCircular_GL in natron-plugins)
- a 4-pass octagonal bokeh blur (available as Community/GLSL/BokehOctagon_GL in natron-plugins)

The principle is very simple: since multipass cannot be done using a single Shadertoy, use several Shadertoy nodes, route the textures between them, and link the parameters. You can learn from these two examples. To figure out the route between textures, click on the tab for each shader in shadertoy.com, and check which shader output is connected to the input textures (iChannel0, etc.) for this shader. The connections between nodes should follow these rules.

The only multipass effects that can not be implemented are the shaders that read back the content of a buffer to compute that same buffer, because compositing graphs cannot have loops (the execution of such a graph would cause an infinite recursion). One example is this progressive lightmap render, where BufB from the previous render is read back as iChannel1 in the BufB shader.

### Default textures and videos

The default shadertoy textures and videos are available from the Shadertoy web site. In order to mimic the behavior of each shader, download the corresponding textures or videos and connect them to the proper input.

- Textures: tex00, tex01, tex02, tex03, tex04, tex05, tex06, tex07, tex08, tex09, tex10, tex11, tex12, tex14, tex15, tex16, tex17, tex18, tex19, tex20, tex21.
- Videos: vid00, vid01, vid02, vid03.
- Cubemaps: cube00_0, cube01_0, cube02_0, cube03_0, cube04_0, cube05

### Inputs

| Input | Description | Optional |
|---|---|---|
| iChannel0 | | Yes |
| iChannel1 | | Yes |
| iChannel2 | | Yes |
| iChannel3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mouse Pos. / `mousePosition` | Double | x: 0 y: 0 | Mouse position, in pixels. Gets mapped to the xy components of the iMouse input. Note that in the web version of Shadertoy, the y coordinate goes from 1 to height. |
| Click Pos. / `mouseClick` | Double | x: 1 y: 1 | Mouse click position, in pixels. The zw components of the iMouse input contain mouseClick if mousePressed is checked, else -mouseClick. The default is (1.,1.) |
| Mouse Pressed / `mousePressed` | Boolean | Off | When checked, the zw components of the iMouse input contain mouseClick, else they contain -mouseClick. If the host does not support animating this parameter, use negative values for mouseClick to emulate a released mouse button. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value0 / paramValueBool0 | Boolean | Off | Value of the parameter. |
| Value0 / paramValueInt0 | Integer | 0 | Value of the parameter. |
| Value0 / paramValueFloat0 | Double | 0 | Value of the parameter. |
| Value0 / paramValueVec20 | Double | x: 0 y: 0 | Value of the parameter. |
| Value0 / paramValueVec30 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value0 / paramValueVec40 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value1 / paramValueBool1 | Boolean | Off | Value of the parameter. |
| Value1 / paramValueInt1 | Integer | 0 | Value of the parameter. |
| Value1 / paramValueFloat1 | Double | 0 | Value of the parameter. |
| Value1 / paramValueVec21 | Double | x: 0 y: 0 | Value of the parameter. |
| Value1 / paramValueVec31 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value1 / paramValueVec41 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value2 / paramValueBool2 | Boolean | Off | Value of the parameter. |
| Value2 / paramValueInt2 | Integer | 0 | Value of the parameter. |
| Value2 / paramValueFloat2 | Double | 0 | Value of the parameter. |
| Value2 / paramValueVec22 | Double | x: 0 y: 0 | Value of the parameter. |
| Value2 / paramValueVec32 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value2 / paramValueVec42 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value3 / paramValueBool3 | Boolean | Off | Value of the parameter. |
| Value3 / paramValueInt3 | Integer | 0 | Value of the parameter. |
| Value3 / paramValueFloat3 | Double | 0 | Value of the parameter. |
| Value3 / paramValueVec23 | Double | x: 0 y: 0 | Value of the parameter. |
| Value3 / paramValueVec33 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value3 / paramValueVec43 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value4 / paramValueBool4 | Boolean | Off | Value of the parameter. |
| Value4 / paramValueInt4 | Integer | 0 | Value of the parameter. |
| Value4 / paramValueFloat4 | Double | 0 | Value of the parameter. |
| Value4 / paramValueVec24 | Double | x: 0 y: 0 | Value of the parameter. |
| Value4 / paramValueVec34 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value4 / paramValueVec44 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value5 / paramValueBool5 | Boolean | Off | Value of the parameter. |
| Value5 / paramValueInt5 | Integer | 0 | Value of the parameter. |
| Value5 / paramValueFloat5 | Double | 0 | Value of the parameter. |
| Value5 / paramValueVec25 | Double | x: 0 y: 0 | Value of the parameter. |
| Value5 / paramValueVec35 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value5 / paramValueVec45 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value6 / paramValueBool6 | Boolean | Off | Value of the parameter. |
| Value6 / paramValueInt6 | Integer | 0 | Value of the parameter. |
| Value6 / paramValueFloat6 | Double | 0 | Value of the parameter. |
| Value6 / paramValueVec26 | Double | x: 0 y: 0 | Value of the parameter. |
| Value6 / paramValueVec36 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value6 / paramValueVec46 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value7 / paramValueBool7 | Boolean | Off | Value of the parameter. |
| Value7 / paramValueInt7 | Integer | 0 | Value of the parameter. |
| Value7 / paramValueFloat7 | Double | 0 | Value of the parameter. |
| Value7 / paramValueVec27 | Double | x: 0 y: 0 | Value of the parameter. |
| Value7 / paramValueVec37 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value7 / paramValueVec47 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value8 / paramValueBool8 | Boolean | Off | Value of the parameter. |
| Value8 / paramValueInt8 | Integer | 0 | Value of the parameter. |
| Value8 / paramValueFloat8 | Double | 0 | Value of the parameter. |
| Value8 / paramValueVec28 | Double | x: 0 y: 0 | Value of the parameter. |
| Value8 / paramValueVec38 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value8 / paramValueVec48 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value9 / paramValueBool9 | Boolean | Off | Value of the parameter. |
| Value9 / paramValueInt9 | Integer | 0 | Value of the parameter. |
| Value9 / paramValueFloat9 | Double | 0 | Value of the parameter. |
| Value9 / paramValueVec29 | Double | x: 0 y: 0 | Value of the parameter. |
| Value9 / paramValueVec39 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value9 / paramValueVec49 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value10 / paramValueBool10 | Boolean | Off | Value of the parameter. |
| Value10 / paramValueInt10 | Integer | 0 | Value of the parameter. |
| Value10 / paramValueFloat10 | Double | 0 | Value of the parameter. |
| Value10 / paramValueVec210 | Double | x: 0 y: 0 | Value of the parameter. |
| Value10 / paramValueVec310 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value10 / paramValueVec410 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value11 / paramValueBool11 | Boolean | Off | Value of the parameter. |
| Value11 / paramValueInt11 | Integer | 0 | Value of the parameter. |
| Value11 / paramValueFloat11 | Double | 0 | Value of the parameter. |
| Value11 / paramValueVec211 | Double | x: 0 y: 0 | Value of the parameter. |
| Value11 / paramValueVec311 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value11 / paramValueVec411 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value12 / paramValueBool12 | Boolean | Off | Value of the parameter. |
| Value12 / paramValueInt12 | Integer | 0 | Value of the parameter. |
| Value12 / paramValueFloat12 | Double | 0 | Value of the parameter. |
| Value12 / paramValueVec212 | Double | x: 0 y: 0 | Value of the parameter. |
| Value12 / paramValueVec312 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value12 / paramValueVec412 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value13 / paramValueBool13 | Boolean | Off | Value of the parameter. |
| Value13 / paramValueInt13 | Integer | 0 | Value of the parameter. |
| Value13 / paramValueFloat13 | Double | 0 | Value of the parameter. |
| Value13 / paramValueVec213 | Double | x: 0 y: 0 | Value of the parameter. |
| Value13 / paramValueVec313 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value13 / paramValueVec413 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value14 / paramValueBool14 | Boolean | Off | Value of the parameter. |
| Value14 / paramValueInt14 | Integer | 0 | Value of the parameter. |
| Value14 / paramValueFloat14 | Double | 0 | Value of the parameter. |
| Value14 / paramValueVec214 | Double | x: 0 y: 0 | Value of the parameter. |
| Value14 / paramValueVec314 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value14 / paramValueVec414 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value15 / paramValueBool15 | Boolean | Off | Value of the parameter. |
| Value15 / paramValueInt15 | Integer | 0 | Value of the parameter. |
| Value15 / paramValueFloat15 | Double | 0 | Value of the parameter. |
| Value15 / paramValueVec215 | Double | x: 0 y: 0 | Value of the parameter. |
| Value15 / paramValueVec315 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value15 / paramValueVec415 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value16 / paramValueBool16 | Boolean | Off | Value of the parameter. |
| Value16 / paramValueInt16 | Integer | 0 | Value of the parameter. |
| Value16 / paramValueFloat16 | Double | 0 | Value of the parameter. |
| Value16 / paramValueVec216 | Double | x: 0 y: 0 | Value of the parameter. |
| Value16 / paramValueVec316 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value16 / paramValueVec416 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value17 / paramValueBool17 | Boolean | Off | Value of the parameter. |
| Value17 / paramValueInt17 | Integer | 0 | Value of the parameter. |
| Value17 / paramValueFloat17 | Double | 0 | Value of the parameter. |
| Value17 / paramValueVec217 | Double | x: 0 y: 0 | Value of the parameter. |
| Value17 / paramValueVec317 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value17 / paramValueVec417 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value18 / paramValueBool18 | Boolean | Off | Value of the parameter. |
| Value18 / paramValueInt18 | Integer | 0 | Value of the parameter. |
| Value18 / paramValueFloat18 | Double | 0 | Value of the parameter. |
| Value18 / paramValueVec218 | Double | x: 0 y: 0 | Value of the parameter. |
| Value18 / paramValueVec318 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value18 / paramValueVec418 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |
| Value19 / paramValueBool19 | Boolean | Off | Value of the parameter. |
| Value19 / paramValueInt19 | Integer | 0 | Value of the parameter. |
| Value19 / paramValueFloat19 | Double | 0 | Value of the parameter. |
| Value19 / paramValueVec219 | Double | x: 0 y: 0 | Value of the parameter. |
| Value19 / paramValueVec319 | Color | r: 0 g: 0 b: 0 | Value of the parameter. |
| Value19 / paramValueVec419 | Color | r: 0 g: 0 b: 0 a: 0 | Value of the parameter. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Load from File / `imageShaderFileName` | N/A | | Load the source from the given file. The file contents is only loaded once. Press the "Reload" button to load again the same file. |
| Reload / `imageShaderReload` | Button | | Reload the source from the given file. |
| Presets Directory / `imageShaderPresetDir` | N/A | | The directory where presets are located. There must be a "Shadertoy.txt" file in this directory to give the list of presets (see the default presets directory for an example). The default textures are located in "/Applications/Natron.app/Contents/Plugins/OFX/Natron/Shadertoy.ofx.bundle/Contents/Res |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Load from Preset / `imageShaderPreset` | Choice | No preset | Load<br>the source from the preset. The default textures are located in "/Applications/Natron.app/Contents/Plugins/OFX/Natron/Shadertoy.ofx.bundle/Contents/Res and more presets can be added by editing "Shadertoy.txt" in the Presets Directory.<br>**No preset**<br>**Blur/Bilateral**<br>**Blur/Bloom**<br>**Blur/Bokeh Disc**<br>**Blur/Circular Blur**<br>**Blur/Fast Blur**<br>**Blur/Gaussian Blur**<br>**Blur/HDR Bloom**<br>**Blur/Mipmap Blur**<br>**Blur/Monte-Carlo Blur**<br>**Blur/Poisson Disc**<br>**Blur/Simple Radial Blur**<br>**Effect/Anaglyphic**<br>**Effect/Ball**<br>**Effect/Barrel Blur Chroma**<br>**Effect/Bloom Paint**<br>**Effect/C64**<br>**Effect/Chromatic Aberration**<br>**Effect/CMYK Halftone**<br>**Effect/CRT**<br>**Effect/DawnBringer 4bit**<br>**Effect/Film Grain**<br>**Effect/Fisheye**<br>**Effect/Glitch 01**<br>**Effect/Glitch 02**<br>**Effect/Glitch A**<br>**Effect/Glitch B**<br>**Effect/Image Cel Shade**<br>**Effect/Kaleidoscope**<br>**Effect/Median Filter**<br>**Effect/Money Filter**<br>**Effect/Noisy Distortion**<br>**Effect/Old Video**<br>**Effect/Quad Mirror**<br>**Effect/Postprocessing**<br>**Effect/Q*Bert-ify**<br>**Effect/Sharpen**<br>**Effect/Stripes**<br>**Effect/TV Snow**<br>**Effect/Van Gogh**<br>**Effect/Vignette**<br>**Merge/MergeOver**<br>**Merge/MergePlus**<br>**Merge/MergeMatte**<br>**Merge/MergeMultiply**<br>**Merge/MergeIn**<br>**Merge/MergeOut**<br>**Merge/MergeMax** |

Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Source / `imageShaderSource` | String | // iChannel0: Source (Source image.), filter=linear, wrap=clamp<br>// BBox: iChannel0<br><br>const vec2 iRenderScale = vec2(1.,1.);<br>// Render Scale (The size of a full-resolution pixel).<br><br>uniform float amplitude = 0.5; // Amplitude (The amplitude of the xy sine wave), min=0., max=1.<br><br>uniform float size = 50.; // Size (The period of the xy sine wave), min = 0., max = 200. | Image shader.<br><br>Shader Inputs:<br>uniform vec3 iResolution; // viewport resolution (in pixels)<br>uniform float iTime; // shader playback time (in seconds)<br>uniform float iTimeDelta; // render time (in seconds)<br>uniform int iFrame; // shader playback frame<br>uniform float iChannelTime[4]; // channel playback time (in seconds)<br>uniform vec3 iChannelResolution[4]; // channel resolution (in pixels)<br>uniform vec2 iChannelOffset[4]; // channel texture offset relative to iChannel0 (in pixels)<br>uniform vec4 iMouse; // mouse pixel coords. xy: current (if MLB down), zw: click<br>uniform samplerXX iChannel0..3; // input channel. XX = 2D/Cube<br>uniform vec4 iDate; // (year, month, day, time in seconds)<br>uniform float iSampleRate; // sound sample rate (i.e., 44100) |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Compile / `imageShaderCompile` | Button | | Compile the image shader. |
| Auto. Params / `autoParams` | Button | | Automatically set the parameters from the shader source next time image is rendered. May require clicking twice, depending on the OpenFX host. Also reset these parameters to their default value. |
| Reset Params Values / `resetParams` | Button | | Set all the extra parameters to their default values, as set automatically by the "Auto. Params", or in the "Extra Parameters" group. |
| Enable / `inputEnable0` | Boolean | On | Enable this input. |
| Filter / `mipmap0` | Choice | Mipmap | Texture filter for this input.<br>**Nearest (nearest)**: MIN/MAG = GL_NEAREST/GL_NEAREST<br>**Linear (linear)**: MIN/MAG = GL_LINEAR/GL_LINEAR<br>**Mipmap (mipmap)**: MIN/MAG = GL_LINEAR_MIPMAP_LINEAR/GL_LINEAR<br>**Anisotropic (anisotropic)**: Mipmap with anisotropic filtering. Available with GPU if supported (check for the presence of the GL_EXT_texture_filter_anisotropic extension in the Renderer Info) and with "softpipe" CPU driver. |
| Wrap / `wrap0` | Choice | Repeat | Texture wrap parameter for this input.<br>**Repeat (repeat)**: WRAP_S/T = GL_REPEAT<br>**Clamp (clamp)**: WRAP_S/T = GL_CLAMP_TO_EDGE<br>**Mirror (mirror)**: WRAP_S/T = GL_MIRRORED_REPEAT |
| Label / `inputLabel0` | String | | Label for this input in the user interface. |
| Hint / `inputHint0` | String | | |
| Enable / `inputEnable1` | Boolean | On | Enable this input. |
| Filter / `mipmap1` | Choice | Mipmap | Texture filter for this input.<br>**Nearest (nearest)**: MIN/MAG = GL_NEAREST/GL_NEAREST<br>**Linear (linear)**: MIN/MAG = GL_LINEAR/GL_LINEAR<br>**Mipmap (mipmap)**: MIN/MAG = GL_LINEAR_MIPMAP_LINEAR/GL_LINEAR<br>**Anisotropic (anisotropic)**: Mipmap with anisotropic filtering. Available with GPU if supported (check for the presence of the GL_EXT_texture_filter_anisotropic extension in the Renderer Info) and with "softpipe" CPU driver. |
| Wrap / `wrap1` | Choice | Repeat | Texture wrap parameter for this input.<br>**Repeat (repeat)**: WRAP_S/T = GL_REPEAT<br>**Clamp (clamp)**: WRAP_S/T = GL_CLAMP_TO_EDGE<br>**Mirror (mirror)**: WRAP_S/T = GL_MIRRORED_REPEAT |
| Label / `inputLabel1` | String | | Label for this input in the user interface. |
| Hint / `inputHint1` | String | | |
| Enable / `inputEnable2` | Boolean | On | Enable this input. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `mipmap2` | Choice | Mipmap | Texture filter for this input.<br>**Nearest (nearest)**: MIN/MAG = GL_NEAREST/GL_NEAREST<br>**Linear (linear)**: MIN/MAG = GL_LINEAR/GL_LINEAR<br>**Mipmap (mipmap)**: MIN/MAG = GL_LINEAR_MIPMAP_LINEAR/GL_LINEAR<br>**Anisotropic (anisotropic)**: Mipmap with anisotropic filtering. Available with GPU if supported (check for the presence of the GL_EXT_texture_filter_anisotropic extension in the Renderer Info) and with "softpipe" CPU driver. |
| Wrap / `wrap2` | Choice | Repeat | Texture wrap parameter for this input.<br>**Repeat (repeat)**: WRAP_S/T = GL_REPEAT<br>**Clamp (clamp)**: WRAP_S/T = GL_CLAMP_TO_EDGE<br>**Mirror (mirror)**: WRAP_S/T = GL_MIRRORED_REPEAT |
| Label / `inputLabel2` | String | | Label for this input in the user interface. |
| Hint / `inputHint2` | String | | |
| Enable / `inputEnable3` | Boolean | On | Enable this input. |
| Filter / `mipmap3` | Choice | Mipmap | Texture filter for this input.<br>**Nearest (nearest)**: MIN/MAG = GL_NEAREST/GL_NEAREST<br>**Linear (linear)**: MIN/MAG = GL_LINEAR/GL_LINEAR<br>**Mipmap (mipmap)**: MIN/MAG = GL_LINEAR_MIPMAP_LINEAR/GL_LINEAR<br>**Anisotropic (anisotropic)**: Mipmap with anisotropic filtering. Available with GPU if supported (check for the presence of the GL_EXT_texture_filter_anisotropic extension in the Renderer Info) and with "softpipe" CPU driver. |
| Wrap / `wrap3` | Choice | Repeat | Texture wrap parameter for this input.<br>**Repeat (repeat)**: WRAP_S/T = GL_REPEAT<br>**Clamp (clamp)**: WRAP_S/T = GL_CLAMP_TO_EDGE<br>**Mirror (mirror)**: WRAP_S/T = GL_MIRRORED_REPEAT |
| Label / `inputLabel3` | String | | Label for this input in the user interface. |
| Hint / `inputHint3` | String | | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Bounding Box / bbox | Choice | Default | What to use to produce the output image's bounding box. If no selected input is connected, use the project size.<br>**Default (default)**: Default bounding box (project size).<br>**Format (format)**: Use a pre-defined image format.<br>**Union (union)**: Union of all connected inputs.<br>**Intersect (intersection)**: Intersection of all connected inputs.<br>**iChannel0**: Bounding box of iChannel0.<br>**iChannel1**: Bounding box of iChannel1.<br>**iChannel2**: Bounding box of iChannel2.<br>**iChannel3**: Bounding box of iChannel3. |
| Format / NatronParamFormatChoice | Choice | HD 1920x1080 | The output format.<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Mouse Params. / mouseParams | Boolean | On | Enable mouse parameters. |
| Start Date / startDate | Color | y: 1970 m: 0 d: 1 s: 0 | The date (yyyy,mm,dd,s) corresponding to frame 0. The month starts at 0 for january, the day starts at 1, and the seconds start from 0 at midnight and should be at most 24*60*60=86400. December 28, 1895 at 10:30 would thus the be (1895,11,28,37800). |
| No. of Params / paramCount | Integer | 0 | Number of extra parameters. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType0` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName0` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel0` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint0` | String | | Help for the parameter. |
| Default0 / `paramDefaultBool0` | Boolean | Off | Default value of the parameter. |
| Default0 / `paramDefaultInt0` | Integer | 0 | Default value of the parameter. |
| Min0 / `paramMinInt0` | Integer | -2147483648 | Min value of the parameter. |
| Max0 / `paramMaxInt0` | Integer | 2147483647 | Max value of the parameter. |
| Default0 / `paramDefaultFloat0` | Double | 0 | Default value of the parameter. |
| Min0 / `paramMinFloat0` | Double | -1.79769e+308 | Min value of the parameter. |
| Max0 / `paramMaxFloat0` | Double | 1.79769e+308 | Max value of the parameter. |
| Default0 / `paramDefaultVec20` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min0 / `paramMinVec20` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max0 / `paramMaxVec20` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default0 / `paramDefaultVec30` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default0 / `paramDefaultVec40` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType1` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName1` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel1` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint1` | String | | Help for the parameter. |
| Default1 / `paramDefaultBool1` | Boolean | Off | Default value of the parameter. |
| Default1 / `paramDefaultInt1` | Integer | 0 | Default value of the parameter. |
| Min1 / `paramMinInt1` | Integer | -2147483648 | Min value of the parameter. |
| Max1 / `paramMaxInt1` | Integer | 2147483647 | Max value of the parameter. |
| Default1 / `paramDefaultFloat1` | Double | 0 | Default value of the parameter. |
| Min1 / `paramMinFloat1` | Double | -1.79769e+308 | Min value of the parameter. |
| Max1 / `paramMaxFloat1` | Double | 1.79769e+308 | Max value of the parameter. |
| Default1 / `paramDefaultVec21` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min1 / `paramMinVec21` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max1 / `paramMaxVec21` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default1 / `paramDefaultVec31` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default1 / `paramDefaultVec41` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType2` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName2` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel2` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint2` | String | | Help for the parameter. |
| Default2 / `paramDefaultBool2` | Boolean | Off | Default value of the parameter. |
| Default2 / `paramDefaultInt2` | Integer | 0 | Default value of the parameter. |
| Min2 / `paramMinInt2` | Integer | -2147483648 | Min value of the parameter. |
| Max2 / `paramMaxInt2` | Integer | 2147483647 | Max value of the parameter. |
| Default2 / `paramDefaultFloat2` | Double | 0 | Default value of the parameter. |
| Min2 / `paramMinFloat2` | Double | -1.79769e+308 | Min value of the parameter. |
| Max2 / `paramMaxFloat2` | Double | 1.79769e+308 | Max value of the parameter. |
| Default2 / `paramDefaultVec22` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min2 / `paramMinVec22` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max2 / `paramMaxVec22` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default2 / `paramDefaultVec32` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default2 / `paramDefaultVec42` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType3` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName3` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel3` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint3` | String | | Help for the parameter. |
| Default3 / `paramDefaultBool3` | Boolean | Off | Default value of the parameter. |
| Default3 / `paramDefaultInt3` | Integer | 0 | Default value of the parameter. |
| Min3 / `paramMinInt3` | Integer | -2147483648 | Min value of the parameter. |
| Max3 / `paramMaxInt3` | Integer | 2147483647 | Max value of the parameter. |
| Default3 / `paramDefaultFloat3` | Double | 0 | Default value of the parameter. |
| Min3 / `paramMinFloat3` | Double | -1.79769e+308 | Min value of the parameter. |
| Max3 / `paramMaxFloat3` | Double | 1.79769e+308 | Max value of the parameter. |
| Default3 / `paramDefaultVec23` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min3 / `paramMinVec23` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max3 / `paramMaxVec23` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default3 / `paramDefaultVec33` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default3 / `paramDefaultVec43` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType4` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName4` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel4` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint4` | String | | Help for the parameter. |
| Default4 / `paramDefaultBool4` | Boolean | Off | Default value of the parameter. |
| Default4 / `paramDefaultInt4` | Integer | 0 | Default value of the parameter. |
| Min4 / `paramMinInt4` | Integer | -2147483648 | Min value of the parameter. |
| Max4 / `paramMaxInt4` | Integer | 2147483647 | Max value of the parameter. |
| Default4 / `paramDefaultFloat4` | Double | 0 | Default value of the parameter. |
| Min4 / `paramMinFloat4` | Double | -1.79769e+308 | Min value of the parameter. |
| Max4 / `paramMaxFloat4` | Double | 1.79769e+308 | Max value of the parameter. |
| Default4 / `paramDefaultVec24` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min4 / `paramMinVec24` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max4 / `paramMaxVec24` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default4 / `paramDefaultVec34` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default4 / `paramDefaultVec44` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType5` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName5` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel5` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint5` | String | | Help for the parameter. |
| Default5 / `paramDefaultBool5` | Boolean | Off | Default value of the parameter. |
| Default5 / `paramDefaultInt5` | Integer | 0 | Default value of the parameter. |
| Min5 / `paramMinInt5` | Integer | -2147483648 | Min value of the parameter. |
| Max5 / `paramMaxInt5` | Integer | 2147483647 | Max value of the parameter. |
| Default5 / `paramDefaultFloat5` | Double | 0 | Default value of the parameter. |
| Min5 / `paramMinFloat5` | Double | -1.79769e+308 | Min value of the parameter. |
| Max5 / `paramMaxFloat5` | Double | 1.79769e+308 | Max value of the parameter. |
| Default5 / `paramDefaultVec25` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min5 / `paramMinVec25` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max5 / `paramMaxVec25` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default5 / `paramDefaultVec35` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default5 / `paramDefaultVec45` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType6` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName6` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel6` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint6` | String | | Help for the parameter. |
| Default6 / `paramDefaultBool6` | Boolean | Off | Default value of the parameter. |
| Default6 / `paramDefaultInt6` | Integer | 0 | Default value of the parameter. |
| Min6 / `paramMinInt6` | Integer | -2147483648 | Min value of the parameter. |
| Max6 / `paramMaxInt6` | Integer | 2147483647 | Max value of the parameter. |
| Default6 / `paramDefaultFloat6` | Double | 0 | Default value of the parameter. |
| Min6 / `paramMinFloat6` | Double | -1.79769e+308 | Min value of the parameter. |
| Max6 / `paramMaxFloat6` | Double | 1.79769e+308 | Max value of the parameter. |
| Default6 / `paramDefaultVec26` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min6 / `paramMinVec26` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max6 / `paramMaxVec26` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default6 / `paramDefaultVec36` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default6 / `paramDefaultVec46` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType7` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName7` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel7` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint7` | String | | Help for the parameter. |
| Default7 / `paramDefaultBool7` | Boolean | Off | Default value of the parameter. |
| Default7 / `paramDefaultInt7` | Integer | 0 | Default value of the parameter. |
| Min7 / `paramMinInt7` | Integer | -2147483648 | Min value of the parameter. |
| Max7 / `paramMaxInt7` | Integer | 2147483647 | Max value of the parameter. |
| Default7 / `paramDefaultFloat7` | Double | 0 | Default value of the parameter. |
| Min7 / `paramMinFloat7` | Double | -1.79769e+308 | Min value of the parameter. |
| Max7 / `paramMaxFloat7` | Double | 1.79769e+308 | Max value of the parameter. |
| Default7 / `paramDefaultVec27` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min7 / `paramMinVec27` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max7 / `paramMaxVec27` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default7 / `paramDefaultVec37` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default7 / `paramDefaultVec47` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / paramType8 | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / paramName8 | String | | Name of the parameter, as used in the shader. |
| Label / paramLabel8 | String | | Label of the parameter, as displayed in the user interface. |
| Hint / paramHint8 | String | | Help for the parameter. |
| Default8 / paramDefaultBool8 | Boolean | Off | Default value of the parameter. |
| Default8 / paramDefaultInt8 | Integer | 0 | Default value of the parameter. |
| Min8 / paramMinInt8 | Integer | -2147483648 | Min value of the parameter. |
| Max8 / paramMaxInt8 | Integer | 2147483647 | Max value of the parameter. |
| Default8 / paramDefaultFloat8 | Double | 0 | Default value of the parameter. |
| Min8 / paramMinFloat8 | Double | -1.79769e+308 | Min value of the parameter. |
| Max8 / paramMaxFloat8 | Double | 1.79769e+308 | Max value of the parameter. |
| Default8 / paramDefaultVec28 | Double | x: 0 y: 0 | Default value of the parameter. |
| Min8 / paramMinVec28 | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max8 / paramMaxVec28 | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default8 / paramDefaultVec38 | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default8 / paramDefaultVec48 | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType9` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName9` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel9` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint9` | String | | Help for the parameter. |
| Default9 / `paramDefaultBool9` | Boolean | Off | Default value of the parameter. |
| Default9 / `paramDefaultInt9` | Integer | 0 | Default value of the parameter. |
| Min9 / `paramMinInt9` | Integer | -2147483648 | Min value of the parameter. |
| Max9 / `paramMaxInt9` | Integer | 2147483647 | Max value of the parameter. |
| Default9 / `paramDefaultFloat9` | Double | 0 | Default value of the parameter. |
| Min9 / `paramMinFloat9` | Double | -1.79769e+308 | Min value of the parameter. |
| Max9 / `paramMaxFloat9` | Double | 1.79769e+308 | Max value of the parameter. |
| Default9 / `paramDefaultVec29` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min9 / `paramMinVec29` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max9 / `paramMaxVec29` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default9 / `paramDefaultVec39` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default9 / `paramDefaultVec49` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / paramType10 | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / paramName10 | String | | Name of the parameter, as used in the shader. |
| Label / paramLabel10 | String | | Label of the parameter, as displayed in the user interface. |
| Hint / paramHint10 | String | | Help for the parameter. |
| Default10 / paramDefaultBool10 | Boolean | Off | Default value of the parameter. |
| Default10 / paramDefaultInt10 | Integer | 0 | Default value of the parameter. |
| Min10 / paramMinInt10 | Integer | -2147483648 | Min value of the parameter. |
| Max10 / paramMaxInt10 | Integer | 2147483647 | Max value of the parameter. |
| Default10 / paramDefaultFloat10 | Double | 0 | Default value of the parameter. |
| Min10 / paramMinFloat10 | Double | -1.79769e+308 | Min value of the parameter. |
| Max10 / paramMaxFloat10 | Double | 1.79769e+308 | Max value of the parameter. |
| Default10 / paramDefaultVec210 | Double | x: 0 y: 0 | Default value of the parameter. |
| Min10 / paramMinVec210 | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max10 / paramMaxVec210 | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default10 / paramDefaultVec310 | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default10 / paramDefaultVec410 | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType11` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName11` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel11` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint11` | String | | Help for the parameter. |
| Default11 / `paramDefaultBool11` | Boolean | Off | Default value of the parameter. |
| Default11 / `paramDefaultInt11` | Integer | 0 | Default value of the parameter. |
| Min11 / `paramMinInt11` | Integer | -2147483648 | Min value of the parameter. |
| Max11 / `paramMaxInt11` | Integer | 2147483647 | Max value of the parameter. |
| Default11 / `paramDefaultFloat11` | Double | 0 | Default value of the parameter. |
| Min11 / `paramMinFloat11` | Double | -1.79769e+308 | Min value of the parameter. |
| Max11 / `paramMaxFloat11` | Double | 1.79769e+308 | Max value of the parameter. |
| Default11 / `paramDefaultVec211` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min11 / `paramMinVec211` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max11 / `paramMaxVec211` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default11 / `paramDefaultVec311` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default11 / `paramDefaultVec411` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / paramType12 | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / paramName12 | String | | Name of the parameter, as used in the shader. |
| Label / paramLabel12 | String | | Label of the parameter, as displayed in the user interface. |
| Hint / paramHint12 | String | | Help for the parameter. |
| Default12 / paramDefaultBool12 | Boolean | Off | Default value of the parameter. |
| Default12 / paramDefaultInt12 | Integer | 0 | Default value of the parameter. |
| Min12 / paramMinInt12 | Integer | -2147483648 | Min value of the parameter. |
| Max12 / paramMaxInt12 | Integer | 2147483647 | Max value of the parameter. |
| Default12 / paramDefaultFloat12 | Double | 0 | Default value of the parameter. |
| Min12 / paramMinFloat12 | Double | -1.79769e+308 | Min value of the parameter. |
| Max12 / paramMaxFloat12 | Double | 1.79769e+308 | Max value of the parameter. |
| Default12 / paramDefaultVec212 | Double | x: 0 y: 0 | Default value of the parameter. |
| Min12 / paramMinVec212 | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max12 / paramMaxVec212 | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default12 / paramDefaultVec312 | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default12 / paramDefaultVec412 | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType13` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName13` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel13` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint13` | String | | Help for the parameter. |
| Default13 / `paramDefaultBool13` | Boolean | Off | Default value of the parameter. |
| Default13 / `paramDefaultInt13` | Integer | 0 | Default value of the parameter. |
| Min13 / `paramMinInt13` | Integer | -2147483648 | Min value of the parameter. |
| Max13 / `paramMaxInt13` | Integer | 2147483647 | Max value of the parameter. |
| Default13 / `paramDefaultFloat13` | Double | 0 | Default value of the parameter. |
| Min13 / `paramMinFloat13` | Double | -1.79769e+308 | Min value of the parameter. |
| Max13 / `paramMaxFloat13` | Double | 1.79769e+308 | Max value of the parameter. |
| Default13 / `paramDefaultVec213` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min13 / `paramMinVec213` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max13 / `paramMaxVec213` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default13 / `paramDefaultVec313` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default13 / `paramDefaultVec413` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / paramType14 | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / paramName14 | String | | Name of the parameter, as used in the shader. |
| Label / paramLabel14 | String | | Label of the parameter, as displayed in the user interface. |
| Hint / paramHint14 | String | | Help for the parameter. |
| Default14 / paramDefaultBool14 | Boolean | Off | Default value of the parameter. |
| Default14 / paramDefaultInt14 | Integer | 0 | Default value of the parameter. |
| Min14 / paramMinInt14 | Integer | -2147483648 | Min value of the parameter. |
| Max14 / paramMaxInt14 | Integer | 2147483647 | Max value of the parameter. |
| Default14 / paramDefaultFloat14 | Double | 0 | Default value of the parameter. |
| Min14 / paramMinFloat14 | Double | -1.79769e+308 | Min value of the parameter. |
| Max14 / paramMaxFloat14 | Double | 1.79769e+308 | Max value of the parameter. |
| Default14 / paramDefaultVec214 | Double | x: 0 y: 0 | Default value of the parameter. |
| Min14 / paramMinVec214 | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max14 / paramMaxVec214 | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default14 / paramDefaultVec314 | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default14 / paramDefaultVec414 | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / paramType15 | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / paramName15 | String | | Name of the parameter, as used in the shader. |
| Label / paramLabel15 | String | | Label of the parameter, as displayed in the user interface. |
| Hint / paramHint15 | String | | Help for the parameter. |
| Default15 / paramDefaultBool15 | Boolean | Off | Default value of the parameter. |
| Default15 / paramDefaultInt15 | Integer | 0 | Default value of the parameter. |
| Min15 / paramMinInt15 | Integer | -2147483648 | Min value of the parameter. |
| Max15 / paramMaxInt15 | Integer | 2147483647 | Max value of the parameter. |
| Default15 / paramDefaultFloat15 | Double | 0 | Default value of the parameter. |
| Min15 / paramMinFloat15 | Double | -1.79769e+308 | Min value of the parameter. |
| Max15 / paramMaxFloat15 | Double | 1.79769e+308 | Max value of the parameter. |
| Default15 / paramDefaultVec215 | Double | x: 0 y: 0 | Default value of the parameter. |
| Min15 / paramMinVec215 | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max15 / paramMaxVec215 | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default15 / paramDefaultVec315 | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default15 / paramDefaultVec415 | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / paramType16 | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / paramName16 | String | | Name of the parameter, as used in the shader. |
| Label / paramLabel16 | String | | Label of the parameter, as displayed in the user interface. |
| Hint / paramHint16 | String | | Help for the parameter. |
| Default16 / paramDefaultBool16 | Boolean | Off | Default value of the parameter. |
| Default16 / paramDefaultInt16 | Integer | 0 | Default value of the parameter. |
| Min16 / paramMinInt16 | Integer | -2147483648 | Min value of the parameter. |
| Max16 / paramMaxInt16 | Integer | 2147483647 | Max value of the parameter. |
| Default16 / paramDefaultFloat16 | Double | 0 | Default value of the parameter. |
| Min16 / paramMinFloat16 | Double | -1.79769e+308 | Min value of the parameter. |
| Max16 / paramMaxFloat16 | Double | 1.79769e+308 | Max value of the parameter. |
| Default16 / paramDefaultVec216 | Double | x: 0 y: 0 | Default value of the parameter. |
| Min16 / paramMinVec216 | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max16 / paramMaxVec216 | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default16 / paramDefaultVec316 | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default16 / paramDefaultVec416 | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `paramType17` | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / `paramName17` | String | | Name of the parameter, as used in the shader. |
| Label / `paramLabel17` | String | | Label of the parameter, as displayed in the user interface. |
| Hint / `paramHint17` | String | | Help for the parameter. |
| Default17 / `paramDefaultBool17` | Boolean | Off | Default value of the parameter. |
| Default17 / `paramDefaultInt17` | Integer | 0 | Default value of the parameter. |
| Min17 / `paramMinInt17` | Integer | -2147483648 | Min value of the parameter. |
| Max17 / `paramMaxInt17` | Integer | 2147483647 | Max value of the parameter. |
| Default17 / `paramDefaultFloat17` | Double | 0 | Default value of the parameter. |
| Min17 / `paramMinFloat17` | Double | -1.79769e+308 | Min value of the parameter. |
| Max17 / `paramMaxFloat17` | Double | 1.79769e+308 | Max value of the parameter. |
| Default17 / `paramDefaultVec217` | Double | x: 0 y: 0 | Default value of the parameter. |
| Min17 / `paramMinVec217` | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max17 / `paramMaxVec217` | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default17 / `paramDefaultVec317` | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default17 / `paramDefaultVec417` | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / paramType18 | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / paramName18 | String | | Name of the parameter, as used in the shader. |
| Label / paramLabel18 | String | | Label of the parameter, as displayed in the user interface. |
| Hint / paramHint18 | String | | Help for the parameter. |
| Default18 / paramDefaultBool18 | Boolean | Off | Default value of the parameter. |
| Default18 / paramDefaultInt18 | Integer | 0 | Default value of the parameter. |
| Min18 / paramMinInt18 | Integer | -2147483648 | Min value of the parameter. |
| Max18 / paramMaxInt18 | Integer | 2147483647 | Max value of the parameter. |
| Default18 / paramDefaultFloat18 | Double | 0 | Default value of the parameter. |
| Min18 / paramMinFloat18 | Double | -1.79769e+308 | Min value of the parameter. |
| Max18 / paramMaxFloat18 | Double | 1.79769e+308 | Max value of the parameter. |
| Default18 / paramDefaultVec218 | Double | x: 0 y: 0 | Default value of the parameter. |
| Min18 / paramMinVec218 | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max18 / paramMaxVec218 | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default18 / paramDefaultVec318 | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default18 / paramDefaultVec418 | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / paramType19 | Choice | none | Type of the parameter.<br>**none**: No parameter.<br>**bool**: Boolean parameter (checkbox).<br>**int**: Integer parameter.<br>**float**: Floating-point parameter.<br>**vec2**: 2D floating-point parameter (e.g. position).<br>**vec3**: 3D floating-point parameter (e.g. 3D position or RGB color).<br>**vec4**: 4D floating-point parameter (e.g. RGBA color). |
| Name / paramName19 | String | | Name of the parameter, as used in the shader. |
| Label / paramLabel19 | String | | Label of the parameter, as displayed in the user interface. |
| Hint / paramHint19 | String | | Help for the parameter. |
| Default19 / paramDefaultBool19 | Boolean | Off | Default value of the parameter. |
| Default19 / paramDefaultInt19 | Integer | 0 | Default value of the parameter. |
| Min19 / paramMinInt19 | Integer | -2147483648 | Min value of the parameter. |
| Max19 / paramMaxInt19 | Integer | 2147483647 | Max value of the parameter. |
| Default19 / paramDefaultFloat19 | Double | 0 | Default value of the parameter. |
| Min19 / paramMinFloat19 | Double | -1.79769e+308 | Min value of the parameter. |
| Max19 / paramMaxFloat19 | Double | 1.79769e+308 | Max value of the parameter. |
| Default19 / paramDefaultVec219 | Double | x: 0 y: 0 | Default value of the parameter. |
| Min19 / paramMinVec219 | Double | x: -1.79769e+308 y: -1.79769e+308 | Min value of the parameter. |
| Max19 / paramMaxVec219 | Double | x: 1.79769e+308 y: 1.79769e+308 | Max value of the parameter. |
| Default19 / paramDefaultVec319 | Color | r: 0 g: 0 b: 0 | Default value of the parameter. |
| Default19 / paramDefaultVec419 | Color | r: 0 g: 0 b: 0 a: 0 | Default value of the parameter. |
| Enable GPU Render / enableGPU | Boolean | On | Enable GPU-based OpenGL render.<br>If the checkbox is checked but is not enabled (i.e. it cannot be unchecked), GPU render can not be enabled or disabled from the plugin and is probably part of the host options.<br>If the checkbox is not checked and is not enabled (i.e. it cannot be checked), GPU render is not available on this host. |

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Table 123 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| CPU Driver / `cpuDriver` | Choice | llvmpipe | Driver for CPU rendering. May be “softpipe” , “llvmpipe” or “swr” (OpenSWR, not always available).<br>**softpipe**: Gallium softpipe driver from Mesa. A reference signle-threaded driver (slower, has GL_EXT_texture_filter_anisotropic GL_ARB_texture_query_lod GL_ARB_pipeline_statistics_query).<br>**llvmpipe**: Gallium llvmpipe driver from Mesa, if available. Uses LLVM for x86 JIT code generation and is multi-threaded (faster, has GL_ARB_buffer_storage GL_EXT_polygon_offset_clamp).<br>**swr**: OpenSWR driver from Mesa, if available. Fully utilizes modern instruction sets like AVX and AVX2 to achieve high rendering performance. |
| Renderer Info… / `rendererInfo` | Button | | Retrieve information about the current OpenGL renderer. |
| Help… / `helpButton` | Button | | Display help about using Shadertoy. |

### 2.8.26 Sharpen node



*This documentation is for version 4.0 of Sharpen (net.sf.cimg.CImgSharpen).*

#### Description

Sharpen the input stream by enhancing its Laplacian.

The effects adds the Laplacian (as computed by the Laplacian plugin) times the ‘Amount’ parameter to the input stream.

Uses the ‘vanvliet’ and ‘deriche’ functions from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amount / `amount` | Double | 1 | Amount of sharpening to apply. |
| Size / `size` | Double | x: 3 y: 3 | Size (diameter) of the filter kernel, in pixel units (>=0). The standard deviation of the corresponding Gaussian is size/2.4. No blur is applied if size < 0.24 (Gaussian and quasi-Gaussian) or <= 1 (box, triangle and quadratic). |
| Uniform / `uniform` | Boolean | Off | Apply the same amount of blur on X and Y. |
| Filter / `filter` | Choice | Gaussian | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.27 SharpenInvDiff node

*This documentation is for version 2.0 of SharpenInvDiff (net.sf.cimg.CImgSharpenInvDiff).*

### Description

Sharpen selected images by inverse diffusion.

Uses 'sharpen' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `amplitude` | Double | 0.2 | Standard deviation of the spatial kernel, in pixel units (>=0). Details smaller than this size are filtered out. |
| Iterations / `iterations` | Integer | 2 | Number of iterations. A reasonable value is 2. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.28 SharpenShock node

*This documentation is for version 2.0 of SharpenShock (net.sf.cimg.CImgSharpenShock).*

### Description

Sharpen selected images by shock filters.

Uses 'sharpen' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `amplitude` | Double | 0.6 | Standard deviation of the spatial kernel, in pixel units (>=0). Details smaller than this size are filtered out. |
| Edge Threshold / `edgeThreshold` | Double | 0.1 | Edge threshold. |
| Gradient Smoothness / `alpha` | Double | 0.8 | Gradient smoothness (in pixels). |
| Tensor Smoothness / `sigma` | Double | 1.1 | Tensor smoothness (in pixels). |
| Iterations / `iterations` | Integer | 1 | Number of iterations. A reasonable value is 1. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.29 SmoothAnisotropic node

*This documentation is for version 2.0 of SmoothAnisotropic (net.sf.cimg.CImgSmooth).*

### Description

Smooth/Denoise input stream using anisotropic PDE-based smoothing.

Uses the 'blur_anisotropic' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `amplitude` | Double | 60 | Amplitude of the smoothing, in pixel units (>=0). This is the maximum length of streamlines used to smooth the data. |
| Sharpness / `sharpness` | Double | 0.7 | |
| Anisotropy / `anisotropy` | Double | 0.3 | Smoothing anisotropy (0<=a<=1) |
| Gradient Smoothness / `alpha` | Double | 0.6 | |
| Tensor Smoothness / `sigma` | Double | 1.1 | Geometry regularity, in pixels units (>=0) |
| Spatial Precision / `dl` | Double | 0.8 | Spatial discretization, in pixel units (0<=dl<=1) |
| Angular Precision / `da` | Double | 30 | Angular integration step, in degrees (0<=da<=90). If da=0, Iterated oriented Laplacians is used instead of LIC-based smoothing. |
| Value Precision / `prec` | Double | 2 | Precision of the diffusion process (>0). |
| Interpolation / `interpolation` | Choice | Nearest-neighbor | Interpolation type<br>**Nearest-neighbor (nearest)**: Nearest-neighbor.<br>**Linear (linear)**: Linear interpolation.<br>**Runge-Kutta (rungekutta)**: Runge-Kutta interpolation. |
| Fast Approximation / `is_fast_approximation` | Boolean | On | Tells if a fast approximation of the gaussian function is used or not |
| Iterations / `iterations` | Integer | 1 | Number of iterations. |
| Set Thin Brush Defaults / `thinBrush` | Button | | Set the defaults to the value of the Thin Brush filter by PhotoComiX, as featured in the G'MIC Gimp plugin. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.30 SmoothBilateral node

*This documentation is for version 2.0 of SmoothBilateral (net.sf.cimg.CImgBilateral).*

### Description

Blur input stream by bilateral filtering.

Uses the 'blur_bilateral' function from the CImg library.

See also: http://opticalenquiry.com/nuke/index.php?title=Bilateral

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spatial Std Dev / `sigma_s` | Double | 10 | Standard deviation of the spatial kernel (positional sigma), in pixel units (>=0). A reasonable value is 1/16 of the image dimension. Small values (1 pixel and below) will slow down filtering. |
| Value Std Dev / `sigma_r` | Double | 0.3 | Standard deviation of the range kernel (color sigma), in intensity units (>=0). A reasonable value is 1/10 of the intensity range. In the context of denoising, Liu et al. ("Noise estimation from a single image", CVPR2006) recommend a value of 1.95*sigma_n, where sigma_n is the local image noise. Small values (1/256 of the intensity range and below) will slow down filtering. |
| Iterations / `iterations` | Integer | 2 | Number of iterations. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.31 SmoothBilateralGuided node

*This documentation is for version 2.0 of SmoothBilateralGuided (net.sf.cimg.CImgBilateralGuided).*

### Description

Apply joint/cross bilateral filtering on image A, guided by the intensity differences of image B. Uses the 'blur_bilateral' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Guide | The guide image indicates where similar pixels are located in each neighborhood. The neighborhood of a pixel consists of pixels that are within a neighborhood of side sigma_s, which have an intensity/value in the Guide image that is within a range of size sigma_r around the intensity of the considered pixel. | No |
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spatial Std Dev / `sigma_s` | Double | 10 | Standard deviation of the spatial kernel (positional sigma), in pixel units (>=0). A reasonable value is 1/16 of the image dimension. Small values (1 pixel and below) will slow down filtering. |
| Value Std Dev / `sigma_r` | Double | 0.3 | Standard deviation of the range kernel (color sigma), in intensity units (>=0). A reasonable value is 1/10 of the intensity range. In the context of denoising, Liu et al. ("Noise estimation from a single image", CVPR2006) recommend a value of 1.95*sigma_n, where sigma_n is the local image noise. Small values (1/256 of the intensity range and below) will slow down filtering. |
| Iterations / `iterations` | Integer | 2 | Number of iterations. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.32 SmoothGuided node

*This documentation is for version 2.0 of SmoothGuided (net.sf.cimg.CImgGuided).*

### Description

Blur image, with the Guided Image filter.

The algorithm is described in: He et al., "Guided Image Filtering," http://research.microsoft.com/en-us/um/people/kahe/publications/pami12guidedfilter.pdf

Uses the 'blur_guided' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `radius` | Integer | 5 | Radius of the spatial kernel (positional sigma), in pixel units (>=0). |
| Smoothness / `epsilon` | Double | 0.2 | Regularization parameter. The actual guided filter parameter is epsilon^2). |
| Iterations / `iterations` | Integer | 1 | Number of iterations. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.33 SmoothPatchBased node

*This documentation is for version 2.0 of SmoothPatchBased (net.sf.cimg.CImgDenoise).*

### Description

Denoise selected images by non-local patch averaging.

This uses the method described in: Non-Local Image Smoothing by Applying Anisotropic Diffusion PDE's in the Space of Patches (D. Tschumperlé, L. Brun), ICIP'09 (https://tschumperle.users.greyc.fr/publications/tschumperle_icip09.pdf).

Uses the 'blur_patch' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spatial Std Dev / `sigma_s` | Double | 10 | Standard deviation of the spatial kernel, in pixel units (>=0). |
| Value Std Dev / `sigma_r` | Double | 0.05 | Standard deviation of the range kernel, in intensity units (>=0). In the context of denoising, Liu et al. ("Noise estimation from a single image", CVPR2006) recommend a value of 1.95*sigma_n, where sigma_n is the local image noise. |
| Patch Size / `psize` | Integer | 5 | Size of the patchs, in pixels (>=0). |
| Lookup Size / `lsize` | Integer | 6 | Size of the window to search similar patchs, in pixels (>=0). |
| Smoothness / `smoothness` | Double | 1 | Smoothness for the patch comparison, in pixels (>=0). |
| fast Approximation / `is_fast_approximation` | Boolean | On | Tells if a fast approximation of the gaussian function is used or not |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.34 SmoothRollingGuidance node

*This documentation is for version 2.0 of SmoothRollingGuidance (net.sf.cimg.CImgRollingGuidance).*

### Description

Filter out details under a given scale using the Rolling Guidance filter.

Rolling Guidance is described fully in http://www.cse.cuhk.edu.hk/~leojia/projects/rollguidance/

Iterates the 'blur_bilateral' function from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spatial Std Dev / `sigma_s` | Double | 10 | Standard deviation of the spatial kernel, in pixel units (>=0). Details smaller than this size are filtered out. |
| Value Std Dev / `sigma_r` | Double | 0.1 | Standard deviation of the range kernel, in intensity units (>=0). A reasonable value is 1/10 of the intensity range. In the context of denoising, Liu et al. ("Noise estimation from a single image", CVPR2006) recommend a value of 1.95*sigma_n, where sigma_n is the local image noise. |
| Iterations / `iterations` | Integer | 4 | Number of iterations of the rolling guidance filter. 1 corresponds to Gaussian smoothing. A reasonable value is 4. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.35 Soften node

*This documentation is for version 4.0 of Soften (net.sf.cimg.CImgSoften).*

### Description

Soften the input stream by reducing its Laplacian.

The effects subtracts the Laplacian (as computed by the Laplacian plugin) times the 'Amount' parameter from the input stream.

Uses the 'vanvliet' and 'deriche' functions from the CImg library.

CImg is a free, open-source library distributed under the CeCILL-C (close to the GNU LGPL) or CeCILL (compatible with the GNU GPL) licenses. It can be used in commercial applications (see http://cimg.eu).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amount / `amount` | Double | 0.5 | Amount of softening to apply. |
| Size / `size` | Double | x: 3 y: 3 | Size (diameter) of the filter kernel, in pixel units (>=0). The standard deviation of the corresponding Gaussian is size/2.4. No blur is applied if size < 0.24 (Gaussian and quasi-Gaussian) or <= 1 (box, triangle and quadratic). |
| Uniform / `uniform` | Boolean | Off | Apply the same amount of blur on X and Y. |
| Filter / `filter` | Choice | Gaussian | Bluring filter. The quasi-Gaussian filter should be appropriate in most cases. The Gaussian filter is more isotropic (its impulse response has rotational symmetry), but slower.<br>**Quasi-Gaussian (quasigaussian)**: Quasi-Gaussian filter (0-order recursive Deriche filter, faster) - IIR (infinite support / impulsional response).<br>**Gaussian (gaussian)**: Gaussian filter (Van Vliet recursive Gaussian filter, more isotropic, slower) - IIR (infinite support / impulsional response).<br>**Box (box)**: Box filter - FIR (finite support / impulsional response).<br>**Triangle (triangle)**: Triangle/tent filter - FIR (finite support / impulsional response).<br>**Quadratic (quadratic)**: Quadratic filter - FIR (finite support / impulsional response). |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.8.36 ZMask node

*This documentation is for version 1.0 of ZMask (fr.inria.ZMask).*

### Description

Creates a mask from a depth buffer by specifying the center value and the amplitude of the range around it with the tightness parameter

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| Z picking / `zPicking` | Boolean | Off | |
| Center Value / `centerValue` | Color | r: 1 g: 1 b: 1 | |
| Tightness / `tightness` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Contrast / `contrast` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Offset / `offset` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Gamma / `gamma` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Invert Gradient / `invertGradient` | Boolean | Off | |
| Source Layer / `Source_channels` | Choice | | **None** |
| Output Layer / `channels` | Choice | DisparityLeft.Disparity | **Color.RGBA (uk.co.thefoundry.OfxImagePlaneColour)**<br>**DisparityLeft.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityLeft)**<br>**DisparityRight.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityRight)**<br>**Backward.Motion (uk.co.thefoundry.OfxImagePlaneBackMotionVector)**<br>**Forward.Motion (uk.co.thefoundry.OfxImagePlaneForwardMotionVector)** |

## 2.8.37 ZRemap node

*This documentation is for version 1.0 of ZRemap (fr.inria.ZRemap).*

### Description

Remap Z-Depth pass according to a close limit value and a far limit

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| Z Picking mode / `zPicking` | Boolean | Off | |
| Close Limit / `closeLimit` | Color | r: 0 g: 0 b: 0 a: 0 | Define the Z value remapped to white. |
| Far Limit / `farLimit` | Color | r: 100 g: 100 b: 100 a: 100 | Define the Z value remapped to black. |
| Gamma / `gamma` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Invert Gradient / `invertGradient` | Boolean | Off | |
| Source Layer / `Source_channels` | Choice | | **None** |
| Output Layer / `channels` | Choice | DisparityLeft.Disparity | **Color.RGBA (uk.co.thefoundry.OfxImagePlaneColour)**<br>**DisparityLeft.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityLeft)**<br>**DisparityRight.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityRight)**<br>**Backward.Motion (uk.co.thefoundry.OfxImagePlaneBackMotionVector)**<br>**Forward.Motion (uk.co.thefoundry.OfxImagePlaneForwardMotionVector)** |

## 2.9 Keyer nodes

The following sections contain documentation about every node in the Keyer group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.9.1 ChromaKeyer node

*This documentation is for version 1.1 of ChromaKeyer (net.sf.openfx.ChromaKeyerPlugin).*

#### Description

Simple chroma Keyer.

Algorithm description:

Keith Jack, "Video Demystified", Independent Pub Group (Computer), 1996, pp. 214-222, http://www.ee-techs.com/circuit/video-demy5.pdf

A simplified version is described in:

[2] High Quality Chroma Key, Michael Ashikhmin, http://www.cs.utah.edu/~michael/chroma/

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | The foreground image to key. | No |
| InM | The Inside Mask, or holdout matte, or core matte, used to confirm areas that are definitely foreground. | Yes |
| OutM | The Outside Mask, or garbage matte, used to remove unwanted objects (lighting rigs, and so on) from the foreground. The Outside Mask has priority over the Inside Mask, so that areas where both are one are considered to be outside. | Yes |
| Bg | The background image to replace the blue/green screen in the foreground. | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Key Color / `keyColor` | Color | r: 0 g: 0 b: 0 | Foreground key color; foreground areas containing the key color are replaced with the background image. |
| YCbCr Colorspace / `colorspace` | Choice | Rec. 709 | Formula used to compute YCbCr from RGB values.<br>**CCIR 601 (ccir601)**: Use CCIR 601 (SD footage).<br>**Rec. 709 (rec709)**: Use Rec. 709 (HD footage).<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 (UltraHD/4K footage). |
| Linear Processing / `linearProcessing` | Boolean | Off | Do not delinearize RGB values to compute the key value. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Acceptance Angle / `acceptanceAngle` | Double | 120 | Foreground colors are only suppressed inside the acceptance angle (alpha). |
| Suppression Angle / `suppressionAngle` | Double | 40 | The chrominance of foreground colors inside the suppression angle (beta) is set to zero on output, to deal with noise. Use no more than one third of acceptance angle. This has no effect on the alpha channel, or if the output is in Intermediate mode. |
| Key Lift / `keyLift` | Double | 0 | Raise it so that less pixels are classified as background. Makes a sharper transition between foreground and background. Defaults to 0. |
| Key Gain / `keyGain` | Double | 1 | Lower it to classify more colors as background. Defaults to 1. |
| Output Mode / `show` | Choice | Composite | What image to output.<br>**Intermediate (intermediate)**: Color is the source color. Alpha is the foreground key. Use for multi-pass keying.<br>**Premultiplied (premultiplied)**: Color is the Source color after key color suppression, multiplied by alpha. Alpha is the foreground key.<br>**Unpremultiplied (unpremultiplied)**: Color is the Source color after key color suppression. Alpha is the foreground key.<br>**Composite (composite)**: Color is the composite of Source and Bg. Alpha is the foreground key. |
| Source Alpha / `sourceAlphaHandling` | Choice | Ignore | How the alpha embedded in the Source input should be used<br>**Ignore (ignore)**: Ignore the source alpha.<br>**Add to Inside Mask (insidemask)**: Source alpha is added to the inside mask. Use for multi-pass keying.<br>**Normal (normal)**: Foreground key is multiplied by source alpha when compositing. |

### 2.9.2 Despill node

*This documentation is for version 1.0 of Despill (net.sf.openfx.Despill).*

#### Description

Remove the unwanted color contamination of the foreground (spill) caused by the reflected color of the bluescreen/greenscreen.

While a despill operation often only removes green (for greenscreens) this despill also enables adding red and blue to the spill area. A lot of Keyers already have implemented their own despill methods. However, in a lot of cases it is useful to separate the keying process in 2 tasks to get more control over the final result. Normally these tasks are the generation of the alpha mask and the spill correction. The generated alpha Mask (Key) is then used to merge the despilled forground over the new background.

This effect is based on the unspill operations described in section 4.5 of "Digital Compositing for Film and Video" by Steve Wright (Focal Press).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Screen Type / `screenType` | Choice | Green-screen | Select the screen type according to your footage<br>**Greenscreen (green)**: The background screen has a green tint.<br>**Bluescreen (blue)**: The background screen has a blue tint. |
| Spillmap Mix / `spillmapMix` | Dou-ble | 0.5 | This value controls the generation of the spillmap.<br>The spillmap decides in which areas the spill will be removed.<br>To calculate this map the two none screen colors are combined according to this value and then subtracted from the screen color.<br>Greenscreen:<br>0: limit green by blue<br>0,5: limit green by the average of red and blue<br>1: limit green by red<br>Bluescreen:<br>0: limit blue by green<br>0,5: limit blue by the average of red and green<br>1: limit blue by red |
| Expand Spillmap / `expandSpillmap` | Dou-ble | 0 | This will expand the spillmap to get rid of still remaining spill.<br>It works by lowering the values that will be subtracted from green or blue. |
| Spillmap to Alpha / `outputSpillMap` | Boolean | Off | If checked, this will output the spillmap in the alpha channel. |
| Red Scale / `scaleRed` | Dou-ble | 0 | Controls the amount of Red in the spill area |
| Green Scale / `scaleGreen` | Dou-ble | -1 | Controls the amount of Green in the spill area.<br>This value should be negative for greenscreen footage. |
| Blue Scale / `scaleBlue` | Dou-ble | 0 | Controls the amount of Blue in the spill area.<br>This value should be negative for bluescreen footage. |
| Brightness / `brightness` | Dou-ble | 0 | Controls the brightness of the spill while trying to preserve the colors. |
| Clamp Black / `clampBlack` | Boolean | On | All colors below 0 on output are set to 0. |
| Clamp White / `clampWhite` | Boolean | Off | All colors above 1 on output are set to 1. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.9.3 Difference node

*This documentation is for version 1.0 of Difference (net.sf.openfx.DifferencePlugin).*

#### Description

Produce a rough matte from the difference of two input images.

A is the background without the subject (clean plate). B is the subject with the background. RGB is copied from B, the difference is output to alpha, after applying offset and gain.

See also: https://web.archive.org/web/20220524000628/http://www.opticalenquiry.com/nuke/index.php?title=The_Keyer_Nodes#Difference and https://web.archive.org/web/20211023071843/http://opticalenquiry.com/nuke/index.php?title=Keying_Tips

#### Inputs

| Input | Description | Optional |
|---|---|---|
| B | The subject with the background. | No |
| A | The background without the subject (a clean plate). | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Offset / `offset` | Double | 0 | Value subtracted to each pixel of the output |
| Gain / `gain` | Double | 1 | Multiply each pixel of the output by this value |

### 2.9.4 HueKeyer node

*This documentation is for version 2.0 of HueKeyer (net.sf.openfx.HueKeyer).*

#### Description

Compute a key depending on hue value.

Hue and saturation are computed from the the source RGB values. Depending on the hue value, the various adjustment values are computed, and then applied:

amount: output transparency for the given hue (amount=1 means alpha=0).

sat_thrsh: if source saturation is below this value, the output transparency is gradually decreased.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Hue Curves / hue | Para-metric | amount: sat_thrsh: | Hue-dependent alpha lookup curves:<br>amount: transparency (1-alpha) amount for the given hue<br>sat_thrsh: if source saturation is below this value, transparency is decreased progressively. |

### 2.9.5 Keyer node

*This documentation is for version 1.0 of Keyer (net.sf.openfx.KeyerPlugin).*

### Description

A collection of simple keyers. These work by computing a foreground key from the RGB values of the input image (see the keyerMode parameter).

This foreground key is is a scalar from 0 to 1. From the foreground key, a background key (or transparency) is computed.

The function that maps the foreground key to the background key is piecewise linear:

- it is 0 below A = (center+toleranceLower+softnessLower)
- it is linear between A = (center+toleranceLower+softnessLower) and B = (center+toleranceLower)

-it is 1 between B = (center+toleranceLower) and C = (center+toleranceUpper)

- it is linear between C = (center+toleranceUpper) and D = (center+toleranceUpper+softnessUpper)
- it is 0 above D = (center+toleranceUpper+softnessUpper)

Keyer can pull mattes that correspond to the RGB channels, the luminance and the red, green and blue colors. One very useful application for a luminance mask is to mask out a sky (almost always it is the brightest thing in a landscape).

Conversion from A, B, C, D to Keyer parameters is:

softnessLower = (A-B)

toleranceLower = (B-C)/2

center = (B+C)/2

toleranceUpper = (C-B)/2

softnessUpper = (D-C)

See also:

- https://web.archive.org/web/20220524000628/http://www.opticalenquiry.com/nuke/index.php?title=The_Keyer_Nodes#Keyer
- http://opticalenquiry.com/nuke/index.php?title=Green_Screen
- https://web.archive.org/web/20211023071843/http://opticalenquiry.com/nuke/index.php?title=Keying_Tips

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | The foreground image to key. | No |
| InM | The Inside Mask, or holdout matte, or core matte, used to confirm areas that are definitely foreground. | Yes |
| OutM | The Outside Mask, or garbage matte, used to remove unwanted objects (lighting rigs, and so on) from the foreground. The Outside Mask has priority over the Inside Mask, so that areas where both are one are considered to be outside. | Yes |
| Bg | The background image to replace the blue/green screen in the foreground. | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Key Color / `keyColor` | Color | r: 0 g: 0 b: 0 | Foreground key color. foreground areas containing the key color are replaced with the background image. |
| Keyer Mode / `mode` | Choice | Luminance | The operation used to compute the foreground key.<br>**Luminance (luminance)**: Use the luminance for keying. The foreground key value is in luminance.<br>**Color (color)**: Use the color for keying. If the key color is pure green, this corresponds a green keyer, etc.<br>**Screen (screen)**: Use the color minus the other components for keying. If the key color is pure green, this corresponds a greenscreen, etc. When in screen mode, the upper tolerance should be set to 1.<br>**None (none)**: No keying, just despill color values. You can control despill areas using either set the inside mask, or use with 'Source Alpha' set to 'Add to Inside Mask'. If 'Output Mode' is set to 'Unpremultiplied', this despills the image even if no mask is present. |
| Luminance Math / `luminanceMath` | Choice | Rec. 709 | Formula used to compute luminance from RGB values.<br>**Rec. 709 (rec709)**: Use Rec. 709 (0.2126r + 0.7152g + 0.0722b).<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 (0.2627r + 0.6780g + 0.0593b).<br>**ACES AP0 (acesap0)**: Use ACES AP0 (0.3439664498r + 0.7281660966g + -0.0721325464b).<br>**ACES AP1 (acesap1)**: Use ACES AP1 (0.2722287168r + 0.6740817658g + 0.0536895174b).<br>**CCIR 601 (ccir601)**: Use CCIR 601 (0.2989r + 0.5866g + 0.1145b).<br>**Average (average)**: Use average of r, g, b.<br>**Max (max)**: Use max or r, g, b. |
| Softness (lower) / `softnessLower` | Double | -0.5 | Width of the lower softness range [key-tolerance-softness,key-tolerance]. Background key value goes from 0 to 1 when foreground key is over this range. |
| Tolerance (lower) / `toleranceLower` | Double | 0 | Width of the lower tolerance range [key-tolerance,key]. Background key value is 1 when foreground key is over this range. |
| Center / `center` | Double | 1 | Foreground key value forresponding to the key color, where the background key should be 1. |
| Tolerance (upper) / `toleranceUpper` | Double | 0 | Width of the upper tolerance range [key,key+tolerance]. Background key value is 1 when foreground key is over this range. Ignored in Screen keyer mode. |
| Softness (upper) / `softnessUpper` | Double | 0.5 | Width of the upper softness range [key+tolerance,key+tolerance+softness]. Background key value goes from 1 to 0 when foreground key is over this range. Ignored in Screen keyer mode. |
| Despill / `despill` | Double | 1 | Reduces color spill on the foreground object (Screen mode only). Between 0 and 1, only mixed foreground/background regions are despilled. Above 1, foreground regions are despilled too. |
| Despill Angle / `despillAngle` | Double | 120 | Opening of the cone centered around the keyColor where colors are despilled. A larger angle means that more colors are modified. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Mode / `show` | Choice | Intermediate | What image to output.<br>**Intermediate (intermediate)**: Color is the source color. Alpha is the foreground key. Use for multi-pass keying.<br>**Premultiplied (premultiplied)**: Color is the Source color after key color suppression, multiplied by alpha. Alpha is the foreground key.<br>**Unpremultiplied (unpremultiplied)**: Color is the Source color after key color suppression. Alpha is the foreground key.<br>**Composite (composite)**: Color is the composite of Source and Bg. Alpha is the foreground key. |
| Source Alpha / `sourceAlphaHandling` | Choice | Ignore | How the alpha embedded in the Source input should be used<br>**Ignore (ignore)**: Ignore the source alpha.<br>**Add to Inside Mask (inside)**: Source alpha is added to the inside mask. Use for multi-pass keying.<br>**Normal (normal)**: Foreground key is multiplied by source alpha when compositing. |

### 2.9.6 MatteMonitor node

*This documentation is for version 1.0 of MatteMonitor (net.sf.openfx.MatteMonitorPlugin).*

#### Description

A Matte Monitor: make alpha values that are strictly between 0 and 1 more visible.

After applying a Keyer, a scaling operation is usually applied to clean the matte. However, it is difficult to visualize on the output values that are very close to 0 or 1, but not equal. This plugin can be used to better visualize these values: connect it to the output of the scaling operator, then to a viewer, and visualize the alpha channel.

Alpha values lower or equal to 0 and greater or equal to 1 are leaved untouched, and alpha values in between are stretched towards 0.5 (using the slope parameter), making them more visible.

The output of this plugin should not be used for firther processing, but only for viewing.

The Matte Monitor is described in "Digital Compositing for Film and Video" by Steve Wright (Sec. 3.1).

See also the video at http://www.vfxio.com/images/movies/Comp_Tip_2.mov

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Slope / `slope` | Double | 0.5 | Slope applied to alpha values striuctly between 0 and 1. |

## 2.9.7 PIK node

*This documentation is for version 1.0 of PIK (net.sf.openfx.PIK).*

### Description

A keyer that works by generating a clean plate from the green/blue screen sequences. Inspired by Nuke's IBK by Paul Lambert and Fusion's KAK by Pieter Van Houte.

There are 2 options to pull a key with PIK. One is to use PIKColor to automatically extract a clean plate from the foreground image and use it as the the C input, and the other is to pick a color which best represents the area you are trying to key.

The blue- or greenscreen image should be used as the Fg input, which is used to compute the output color. If that image contains significant noise, a denoised version should be used as the PFg input, which is used to pull the key. The C input should either be a clean plate or the output of PIKColor, and is used as the screen color if the 'Screen Type' is not 'Pick'. The Bg image is used in calculating fine edge detail when either 'Use Bg Luminance' or 'Use Bg Chroma' is checked. Optionally, an inside mask (a.k.a. holdout matte or core matte) and an outside mask (a.k.a. garbage matte) can be connected to inputs InM and OutM. Note that the outside mask takes precedence over the inside mask.

If PIKcolor is used to build the clean plate, the PIKColor Source input should be the same as the PFg input to PIK, e.g. the denoised footage, and the inside mask of PIK can also be fed into the InM input of PIKColor.

The color weights deal with the hardness of the matte. When viewing the output (with screen subtraction checked), one may notice areas where edges have a slight discoloration due to the background not being fully removed from the original plate. This is not spill but a result of the matte being too strong. Lowering one of the weights will correct that particular edge. For example, if it is a red foreground image with an edge problem, lower the red weight. This may affect other edges so the use of multiple PIKs with different weights, split with KeyMixes, is recommended.

The Alpha Bias setting may be used either if there is a strong global color cast on the scene (e.g. the green or blue screen color is not pure), or if parts of the foreground are transparent in the output. This color is considered by the algorithm as being a grey reference: all colors from the PFg input are first normalized by this color before computation.

If the Alpha Bias is set, but the screen subtraction has a strong color bias (e.g. the despilled areas show the screen color), uncheck 'Use Alpha for Despill' and set the Despill Bias to the color of the foreground elements that are most affected by the color bias.

'Screen Subtraction' (a.k.a. despill) removes the background color from the output via a subtraction process (1-alpha times the screen color is subtracted at each pixel). When unchecked, the output is simply the original Fg premultiplied with the generated matte.

'Use Bkg Luminance' and 'Use Bkg Chroma' affect the output color by the new background. This feature can also sometimes really help with screens that exhibit some form of fringing artifact - usually a darkening or lightening of an edge on one of the color channels on the screen. The effect can be offset by grading the Bg input up or down

with a grade node just before input. If it is just an area which needs help then just rotoscope that area and locally grade the Bg input up or down to remove the artifact.

The output of PIK is controlled by the "Output Mode" option. For example, if the output is "Premultiplied", it should be composited with the background using a Merge-over operation.

The basic equation used to extract the key in PIK is (in the case of "green" keying):

alpha = 0 if (Ag-Ar*rw-Ab*gbw) is negative, else 1-(Ag-Ar*rw-Ab*gbw)/(Bg-Br*rw-Bb*gbw)

A is input PFg and B is input C, rw is the value of "Red Weight" and gbw is the value of "Green/Blue Weight".

See also:

- https://web.archive.org/web/20220524000628/http://www.opticalenquiry.com/nuke/index.php?title=The_Keyer_Nodes#IBK
- https://compositingmentor.com/2014/07/19/advanced-keying-breakdown-alpha-1-4-ibk-stacked-technique/

### Inputs

| Input | Description | Optional |
|---|---|---|
| Fg | The blue- or greenscreen image. Used to compute the output color. | No |
| PFg | (optional) The preprocessed/denoised blue- or greenscreen image. Used to compute the output key (alpha). A denoised image usually gives a less noisy key. If not connected, the Fg input is used instead. | Yes |
| C | (optional) A clean plate if available, or the output of PIKColor to generate the clean plate at each frame. | Yes |
| Bg | (optional) The background image. This is used in calculating fine edge detail when the 'Use Bg Luminance' or 'Use Bg Chroma' options are checked. | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Screen Type / `screenType` | Choice | C-Blue | The type of background screen used for the key.<br>**C-Green (green)**: Background screen with a green tint.<br>**C-Blue (blue)**: Background screen with a blue tint.<br>**Pick (pick)**: The background screen color is selected by the "color" parameter, and the type of screen (green or blue) is set automatically from this color. |
| Color / `color` | Color | r: 0 g: 0 b: 1 | The screen color in case 'Pick' was chosen as the 'Screen Type'. |
| No Key / `noKey` | Boolean | Off | Apply despill, background luminance and chroma to Fg rgba input using the Fg alpha channel as the key - no key is pulled, but Inside Mask and Outside Mask are applied if connected. |
| Red Weight / `redWeight` | Double | 0.5 | Determines how the red channel and complement channel (blue for a green screen, green for a blue screen) are weighted in the keying calculation. |
| Blue/Green Weight / `blueGreenWeight` | Double | 0.5 | Determines how the red channel and complement channel (blue for a green screen, green for a blue screen) are weighted in the keying calculation. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Alpha Bias / `alphaBias` | Color | r: 0.5<br>g: 0.5<br>b: 0.5 | Divide C and PFg colors by this color before computing alpha. This may be used when the whole scene, including the background, has a strong color cast. |
| Despill Bias / `despillBias` | Color | r: 0.5<br>g: 0.5<br>b: 0.5 | Divide C color by this color before despill. |
| Use Alpha Bias for Despill / `despillBiasIsAlphaBias` | Boolean | On | Use alpha bias color for despill instead of despill bias color. |
| Screen Subtraction / `ss` | Boolean | On | Have the keyer subtract the foreground or just premult. |
| Clamp / `clampAlpha` | Boolean | On | Clamp matte to 0-1. |
| Clip Black / `screenClipMin` | Double | 0 | Any alpha below this value is set to 0. |
| Clip White / `screenClipMax` | Double | 1 | Any alpha above this value is set to 1. |
| Screen Replace / `screenReplace` | Choice | Soft Color | What to do with the color of the pixels for which alpha was modified by the screen matte settings.<br>**None (none)**: Subtracted image is not affected by alpha modifications.<br>**Source (source)**: When alpha is modified, a corresponding amount of the Fg color is added.<br>**Hard Color (hardcolor)**: When alpha is modified, a corresponding amount of the replace color is added.<br>**Soft Color (softcolor)**: When alpha is modified, a corresponding amount of the replace color is added, but the resulting luminance is matched with Fg. |
| Screen Replace Color / `screenReplaceColor` | Color | r: 0.5<br>g: 0.5<br>b: 0.5 | The color to use when the Screen Replace parameter is set to Soft or Hard Color. |
| Source Alpha / `sourceAlphaHandling` | Choice | Ignore | How the alpha embedded in the Source input should be used<br>**Ignore (ignore)**: Ignore the source alpha.<br>**Add to Inside Mask (inside)**: Source alpha is added to the inside mask. Use for multi-pass keying. |
| Inside Replace / `insideReplace` | Choice | Soft Color | What to do with the color of the pixels for which alpha was modified by the inside mask.<br>**None (none)**: Subtracted image is not affected by alpha modifications.<br>**Source (source)**: When alpha is modified, a corresponding amount of the Fg color is added.<br>**Hard Color (hardcolor)**: When alpha is modified, a corresponding amount of the replace color is added.<br>**Soft Color (softcolor)**: When alpha is modified, a corresponding amount of the replace color is added, but the resulting luminance is matched with Fg. |
| Inside Replace Color / `insideReplaceColor` | Color | r: 0.5<br>g: 0.5<br>b: 0.5 | The color to use when the Inside Replace parameter is set to Soft or Hard Color. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Use Bg Luminance / `ubl` | Boolean | Off | Have the output RGB be biased by the difference between the Bg luminance and the C luminance). Luminance is computed using the given Colorspace. |
| Use Bg Chroma / `ubc` | Boolean | Off | Have the output RGB be biased by the Bg chroma. Chroma is computed using the given Colorspace |
| Colorspace / `colorspace` | Choice | Rec. 709 | Formula used to compute luminance and chrominance from RGB values for the "Use Bg Luminance" and "Use Bg Choma" options.<br>**Rec. 709 (rec709)**: Use Rec. 709 with D65 illuminant.<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 with D65 illuminant.<br>**ACES AP0 (acesap0)**: Use ACES AP0 with ACES (approx. D60) illuminant.<br>**ACES AP1 (acesap1)**: Use ACES AP1 with ACES (approx. D60) illuminant. |
| Output Mode / `show` | Choice | Pre-multiplied | What image to output.<br>**Source (source)**: The PFg input (or Fg input, if PFg is not connected).<br>**Source Alpha (sourcealpha)**: The Alpha channel from the PFg input (or Fg input, if PFg is not connected), displayed as luminance.<br>**Clean Plate (cleanplate)**: The clean plate from the C input (or the screen color, if C is not connected).<br>**Screen Matte (screenmatte)**: The screen matte after keying and screen matte processing, but before applying the inside and outside mask, displayed as luminance.<br>**Inside Mask (insidemask)**: The inside mask, displayed as luminance.<br>**Outside Mask (outsidemask)**: The outside mask, displayed as luminance.<br>**Combined Matte (matte)**: The final matte, after applying inside and outside mask, displayed as luminance.<br>**Status (status)**: An image showing which pixels are pure background (black), pure foreground (white), partially transparent (grey), affected by Screen Replace (green), affected by Inside Replace (blue), or affected by Outside Mask (red).<br>**Intermediate (intermediate)**: Color is the source color. Alpha is the foreground key. Use for multi-pass keying.<br>**Premultiplied (premultiplied)**: Color is the Source color after key color suppression, multiplied by alpha. Alpha is the foreground key.<br>**Unpremultiplied (unpremultiplied)**: Color is the Source color after key color suppression. Alpha is the foreground key.<br>**Composite (composite)**: Color is the composite of Source and Bg. Alpha is the foreground key. |

### 2.9.8 PIKColor node

*This documentation is for version 1.0 of PIKColor (fr.inria.PIKColor).*

#### Description

This node provides the PIK per-pixel keyer a pseudo clean-plate to be used as color reference.

The idea is to remove the foreground image and only leave the shades and hues of the original blue/greenscreen.

Attach the output of this node to the 'C' input of a PIK node. Attach the input of this node and the 'PFg' input of PIK to the original screen, or preferably the denoised screen.

Pick which color your screen type is in both nodes and then while viewing the alpha output from PIK lower the darks.b (if a bluescreen - adjust darks.g if a greenscreen) in this node until you see a change in the garbage area of the matte. Once you see a change then you have gone too far -back off a step. If you are still left with discolored edges you can use the other colors in the lights and darks to eliminate them. Remember the idea is to be left with the original shades of the screen and the foreground blacked out. While swapping between viewing the matte from the PIK and the rgb output of PIKColor adjust the other colors until you see a change in the garbage area of the matte. Simple rule of thumb - if you have a light red discolored area increase the lights.r - if you have a dark green discolored area increase darks.g. If your screen does not have a very saturated hue you may still be left with areas of discoloration after the above process. The 'erode' slider can help with this - while viewing the rgb output adjust the erode until those areas disappear.

The 'Patch Black' slider allows you to fill in the black areas with screen color. This is not always necessary but if you see blue squares in your composite increase this value and it'll fix it.

The optional 'InM' input can be used to provide an inside mask (a.k.a. core matte or holdout matte), which is excluded from the clean plate. If an inside mask is fed into the Keyer (PIK or another Keyer), the same inside mask should be fed inside PIKColor.

The above is the only real workflow for this node - working from the top parameter to the bottom parameter- going back to tweak darks/lights with 'erode' and 'patch black' activated is not really going to work.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| InM | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |
| Screen Type / `screenType` | Choice | Blue | **Green**<br>**Blue** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `size` | Double | 10 | Size of color expansion. |
| Darks / `off` | Color | r: 0 g: 0 b: 0 | adjust the color values to get the best separation between black and the screen type color.<br>You want to be left with only shades of the screen color and black.<br>If a green screen is selected start by bringing down darks->green<br>If a blue screen is selected start by bringing down darks->blue |
| Lights / `mult` | Color | r: 1 g: 1 b: 1 | adjust the color values to get the best separation between black and the screen type color.<br>You want to be left with only shades of the screen color and black.<br>If a green screen is selected start by bringing down darks->green<br>If a blue screen is selected start by bringing down darks->blue |
| Erode / `erode` | Double | 0 | increase this value if you still see traces of the foreground edge color in the output |
| Patch Black / `multi` | Double | 0 | Increase this to optionally remove the black from the output.<br>This should only be used once the the above darks/lights have been set. |
| Filter / `filt` | Boolean | On | |
| Level / `level` | Double | 1 | multiply the rgb output. Helps remove noise from main key |

## 2.10 Merge nodes

The following sections contain documentation about every node in the Merge group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.10.1 Absminus node

The *Absminus* node is a convenience node identical to the *Merge node*, except that the operator is set to *difference (a.k.a. absminus)* by default.

### 2.10.2 ContactSheet node

*This documentation is for version 1.0 of ContactSheet (net.sf.openfx.ContactSheetOFX).*

#### Description

Make a contact sheet from several inputs or frames.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| 0 | | Yes |
| 1 | | Yes |
| 2 | | Yes |
| 3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution / `resolution` | Integer | x: 3072 y: 2048 | Resolution of the output image, in pixels. |
| Rows/Columns / `rowsColumns` | Integer | x: 3 y: 4 | How many rows and columns in the grid where the input images or frames are arranged. |
| Gap / `gap` | Integer | 0 | Gap in pixels around each input or frame. |
| Center / `center` | Boolean | Off | Center each input/frame within its cell. |
| Row Order / `rowOrder` | Choice | BottomTop | How image rows are populated.<br>**TopBottom (topbottom)**: From top to bottom row.<br>**BottomTop (bottomtop)**: From bottom to top row. |
| Column Order / `colOrder` | Choice | LeftRight | How image columns are populated.<br>**LeftRight**: From left to right column.<br>**RightLeft**: From right to left column. |
| Frame Range / `frameRange` | Integer | x: 0 y: 0 | Frames that are taken from each input. For example, if there are 4 inputs, 'frameRange' is 0-1, and 'absolute' is not checked, the current frame and the next frame is taken from each input, and the contact sheet will contain 8 frames in total. |
| Absolute / `frameRangeAbsolute` | Boolean | Off | If checked, the 'frameRange' parameter contains absolute frame numbers. |
| Enable Selection / `selection` | Boolean | Off | If checked, the mouse can be used to select an input or frame, and 'selectionInput' and 'selectionFrame' are set to the selected frame. At at least one keyframe to 'selectionInput' and 'selectionFrame' to enable time-varying selection. |
| Selection Input / `selectionInput` | Integer | 0 | The selected input. Can be used as the 'which' parameter of a Switch effect. At at least one keyframe to this parameter to enable time-varying selection. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Selection Frame / `selectionFrame` | Integer | 0 | The selected frame (if frameRangeAbsolute is checked, this is an absolute frame number). Can be used as the 'firstFrame' parameter of a FrameHold effect. At at least one keyframe to this parameter to enable time-varying selection. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |

### 2.10.3 CopyRectangle node

*This documentation is for version 2.0 of CopyRectangle (net.sf.openfx.CopyRectanglePlugin).*

#### Description

Copies a rectangle from the input A to the input B in output.

It can be used to limit an effect to a rectangle of the original image by plugging the original image into the input B.

See also https://web.archive.org/web/20220807200909/http://www.opticalenquiry.com/nuke/index.php?title=CopyRectange

#### Inputs

| Input | Description | Optional |
|---|---|---|
| B | The image from which the rectangle is copied. | No |
| A | The image from which the rectangle is copied. | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the rectangle |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the rectangle |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Softness / `softness` | Double | 0 | Size of the fade around edges of the rectangle to apply |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.10.4 Dissolve node

*This documentation is for version 1.0 of Dissolve (net.sf.openfx.DissolvePlugin).*

#### Description

Weighted average of two inputs.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| 0 | | Yes |
| 1 | | Yes |
| Mask | | Yes |
| 2 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Which / `which` | Double | 0 | Mix factor between the inputs. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |

### 2.10.5 In node

The *In* node is a convenience node identical to the *Merge node*, except that the operator is set to *in* by default.

### 2.10.6 KeyMix node

*This documentation is for version 1.0 of KeyMix (net.sf.openfx.KeyMix).*

#### Description

KeyMix takes two images and layers them together according to a third input. It can be used to lay a foreground over a background using the output of a keyer. The only disadvantage to this method is that it outputs an image with no alpha.

It copies the pixel from A to B only where the Mask is non-zero. It is the same as the Matte operation, but alpha for input A is taken from an external mask, and the output alpha is mixed between A and B. The output bounding box is the union of A and B.

As well as functioning as a layering node, it can also be used to integrate two color operations with one mask. This guards against 'recycled masks', where two consecutive color filters are masked using the same mask, which may generate strange artifacts.

See also: https://web.archive.org/web/20220120144948/opticalenquiry.com/nuke/index.php?title=KeyMix

### Inputs

| Input | Description | Optional |
|---|---|---|
| B | The main input. This input is passed through when the KeyMix node is disabled. | Yes |
| A | The image sequence to mix with input B. | Yes |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.10.7 LayerContactSheet node

*This documentation is for version 1.0 of LayerContactSheet (net.sf.openfx.LayerContactSheetOFX).*

### Description

Make a contact sheet from all layers.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution / `resolution` | Integer | x: 3072 y: 2048 | Resolution of the output image, in pixels. |
| Rows/Columns / `rowsColumns` | Integer | x: 3 y: 4 | How many rows and columns in the grid where the input images or frames are arranged. |
| Automatic Rows/Columns / `autoDims` | Boolean | On | Automatically sets the number of rows/columns to display all layers. |
| Gap / `gap` | Integer | 0 | Gap in pixels around each input or frame. |
| Center / `center` | Boolean | Off | Center each input/frame within its cell. |
| Row Order / `rowOrder` | Choice | Top-Bottom | How image rows are populated.<br>**TopBottom (topbottom)**: From top to bottom row.<br>**BottomTop (bottomtop)**: From bottom to top row. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Column Order / `colOrder` | Choice | Left-Right | How image columns are populated.<br>**LeftRight (leftright)**: From left to right column.<br>**RightLeft (rightleft)**: From right to left column. |
| Show Layer Names / `showLayerNames` | Boolean | Off | Display the layer name in the bottom left of each frame. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |

### 2.10.8 Matte node

The *Matte* node is a convenience node identical to the *Merge node*, except that the operator is set to *matte* by default.

### 2.10.9 Max node

The *Max* node is a convenience node identical to the *Merge node*, except that the operator is set to *max* by default.

### 2.10.10 Merge node

*This documentation is for version 2.0 of Merge (net.sf.openfx.MergePlugin).*

#### Description

Pixel-by-pixel merge operation between two or more inputs. Input A is first merged with B (or with a black and transparent background if B is not connected), then A2, if connected, is merged with the intermediary result, then A3, etc.

A description of most operators is available in the W3C Compositing and Blending Level 1 Recommendation https://www.w3.org/TR/compositing-1/ and a complete explanation of the Porter-Duff compositing operators can be found in "Compositing Digital Images", by T. Porter and T. Duff (Proc. SIGGRAPH 1984) http://keithp.com/~keithp/porterduff/p253-porter.pdf

Note that if an input with only RGB components is connected to A or B, its alpha channel is considered to be opaque (one) by default, thus the output will be completely opaque if the checkbox for channel A of input B is checked. One reason for this behaviour is that non-zero RGB values with a zero A value are not valid alpha-premultiplied RGBA values. If the user wishes to keep the background fully transparent, it can only be black, which is equivalent to not using the merge operator. Non-black fully transparent pixels should never appear anywhere in a proper compositing graph.

### Operators

The following operators are available.

### Porter-Duff compositing operators

- copy: A (a.k.a. src)
- over: A+B(1-a) (a.k.a. src-over)
- under: A(1-b)+B (a.k.a. dst-over)
- in: Ab (a.k.a. src-in)
- mask: Ba (a.k.a dst-in)
- out: A(1-b) (a.k.a. src-out)
- stencil: B(1-a) (a.k.a. dst-out)
- atop: Ab + B(1 - a) (a.k.a. src-atop)
- xor: A(1-b)+B(1-a)

### Blend modes, see https://en.wikipedia.org/wiki/Blend_modes

### Multiply and Screen

- multiply: AB, A if A < 0 and B < 0
- screen: A+B-AB if A or B <= 1, otherwise max(A, B)
- overlay: multiply(A, 2*B) if B < 0.5, screen(A, 2*B - 1) if B > 0.5
- hard-light: multiply(2*A, B) if A < 0.5, screen(2*A - 1, B) if A > 0.5
- soft-light: burn-in if A < 0.5, lighten if A > 0.5

### Dodge and burn

- color-dodge: brighten B towards A
- color-burn: darken B towards A
- pinlight: if B >= 0.5 then max(A, 2*B - 1), min(A, B * 2) else
- difference: abs(A-B) (a.k.a. absminus)
- exclusion: A+B-2AB
- divide: A/B, 0 if A < 0 and B < 0

### Simple arithmetic blend modes

- divide: A/B, 0 if A < 0 and B < 0
- plus: A+B (a.k.a. add)
- from: B-A (a.k.a. subtract)
- minus: A-B
- difference: abs(A-B) (a.k.a. absminus)
- min: min(A, B) (a.k.a. darken only)
- max: max(A, B) (a.k.a. lighten only)

### Hue, saturation and luminosity

- hue: SetLum(SetSat(A, Sat(B)), Lum(B))
- saturation: SetLum(SetSat(B, Sat(A)), Lum(B))
- color: SetLum(A, Lum(B))
- luminosity: SetLum(B, Lum(A))

### Other

- average: (A + B) / 2
- conjoint-over: A + B(1-a)/b, A if a > b
- disjoint-over: A+B(1-a)/b, A+B if a+b < 1
- freeze: 1-sqrt(1-A)/B
- geometric: 2AB/(A+B)
- grain-extract: B - A + 0.5
- grain-merge: B + A - 0.5
- hypot: sqrt(A*A+B*B)
- matte: Aa + B(1-a) (unpremultiplied over)
- reflect: A*A / (1 - B)

See also:

- "Digital Image Compositing" by Marc Levoy https://graphics.stanford.edu/courses/cs248-06/comp/comp.html
- "Compositing and Blending Level 1" https://www.w3.org/TR/compositing-1/
- "SVG Compositing Specification" https://www.w3.org/TR/SVGCompositing/
- "ISO 32000-1:2008: Portable Document Format (July 2008)", Sec. 11.3 "Basic Compositing Operations" http://www.adobe.com/devnet/pdf/pdf_reference.html
- "Merge" by Martin Constable https://web.archive.org/web/20220627015903/http://www.opticalenquiry.com/nuke/index.php?title=Merge
- "Merge Blend Modes" by Martin Constable https://web.archive.org/web/20220807185657/http://www.opticalenquiry.com/nuke/index.php?title=Merge_Blend_Modes
- "Primacy of the B Feed" by Martin Constable https://web.archive.org/web/20220807185551/http://www.opticalenquiry.com/nuke/index.php?title=Primacy_of_the_B_Feed

- grain-extract and grain-merge are described in http://docs.gimp.org/en/gimp-concepts-layer-modes.html

### Inputs

| Input | Description | Optional |
|---|---|---|
| B | The main input. This input is passed through when the merge node is disabled. | Yes |
| A | The image sequence to merge with input B. | Yes |
| Mask | | Yes |
| A2 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Operation / `operation` | Choice | over | The operation used to merge the input A and B images.<br>The operator formula is applied to each component: A and B represent the input component (Red, Green, Blue, or Alpha) of each input, and a and b represent the alpha channel of each input.<br>If Alpha masking is checked, the output alpha is computed using a different formula (a+b - a*b).<br>Alpha masking is always enabled for HSL modes (hue, saturation, color, luminosity).<br>**atop**: Ab + B(1 - a) (a.k.a. src-atop)<br>**average**: (A + B) / 2<br>**color**: SetLum(A, Lum(B))<br>**color-burn**: darken B towards A<br>**color-dodge**: brighten B towards A<br>**conjoint-over**: A + B(1-a)/b, A if a > b<br>**copy**: A (a.k.a. src)<br>**difference**: abs(A-B) (a.k.a. absminus)<br>**disjoint-over**: A+B(1-a)/b, A+B if a+b < 1<br>**divide**: A/B, 0 if A < 0 and B < 0<br>**exclusion**: A+B-2AB<br>**freeze**: 1-sqrt(1-A)/B<br>**from**: B-A (a.k.a. subtract)<br>**geometric**: 2AB/(A+B)<br>**grain-extract**: B - A + 0.5<br>**grain-merge**: B + A - 0.5<br>**hard-light**: multiply(2*A, B) if A < 0.5, screen(2*A - 1, B) if A > 0.5<br>**hue**: SetLum(SetSat(A, Sat(B)), Lum(B))<br>**hypot**: sqrt(A*A+B*B)<br>**in**: Ab (a.k.a. src-in)<br>**luminosity**: SetLum(B, Lum(A))<br>**mask**: Ba (a.k.a dst-in)<br>**matte**: Aa + B(1-a) (unpremultiplied over)<br>**max**: max(A, B) (a.k.a. lighten only)<br>**min**: min(A, B) (a.k.a. darken only)<br>**minus**: A-B<br>**multiply**: AB, A if A < 0 and B < 0<br>**out**: A(1-b) (a.k.a. src-out)<br>**over**: A+B(1-a) (a.k.a. src-over)<br>**overlay**: multiply(A, 2*B) if B < 0.5, screen(A, 2*B - 1) if B > 0.5<br>**pinlight**: if B >= 0.5 then max(A, 2*B - 1), min(A, B * 2) else<br>**plus**: A+B (a.k.a. add)<br>**reflect**: A*A / (1 - B)<br>**saturation**: SetLum(SetSat(B, Sat(A)), Lum(B))<br>**screen**: A+B-AB if A or B <= 1, otherwise max(A, B)<br>**soft-light**: burn-in if A < 0.5, lighten if A > 0.5<br>**stencil**: B(1-a) (a.k.a. dst-out)<br>**under**: A(1-b)+B (a.k.a. dst-over)<br>**xor**: A(1-b)+B(1-a) |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Bounding Box / `bbox` | Choice | Union | What to use to produce the output image's bounding box.<br>**Union (union)**: Union of all connected inputs.<br>**Intersection (intersection)**: Intersection of all connected inputs.<br>**A (a)**: Bounding box of input A.<br>**B (b)**: Bounding box of input B. |
| Alpha masking / `screenAlpha` | Boolean | Off | When enabled, the input images are unchanged where the other image has 0 alpha, and the output alpha is set to a+b - a*b. When disabled the alpha channel is processed as any other channel. Option is disabled for operations where it does not apply or makes no difference. |
| R / `AChannelsR` | Boolean | On | Use red channel from A input(s). |
| G / `AChannelsG` | Boolean | On | Use green channel from A input(s). |
| B / `AChannelsB` | Boolean | On | Use blue channel from A input(s). |
| A / `AChannelsA` | Boolean | On | Use alpha channel from A input(s). |
| R / `BChannelsR` | Boolean | On | Use red channel from B input. |
| G / `BChannelsG` | Boolean | On | Use green channel from B input. |
| B / `BChannelsB` | Boolean | On | Use blue channel from B input. |
| A / `BChannelsA` | Boolean | On | Use alpha channel from B input. |
| R / `OutputChannelsR` | Boolean | On | Write red channel to output. |
| G / `OutputChannelsG` | Boolean | On | Write green channel to output. |
| B / `OutputChannelsB` | Boolean | On | Write blue channel to output. |
| A / `OutputChannelsA` | Boolean | On | Write alpha channel to output. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.10.11 Min node

The *Min* node is a convenience node identical to the *Merge node*, except that the operator is set to *min* by default.

### 2.10.12 Multiply node

The *Multiply* node is a convenience node identical to the *Merge node*, except that the operator is set to *multiply* by default.

### 2.10.13 Out node

The *Out* node is a convenience node identical to the *Merge node*, except that the operator is set to *out* by default.

### 2.10.14 Plus node

The *Plus* node is a convenience node identical to the *Merge node*, except that the operator is set to *plus* by default.

### 2.10.15 Premult node

*This documentation is for version 2.0 of Premult (net.sf.openfx.Premult).*

#### Description

Multiply the selected channels by alpha (or another channel).

If no channel is selected, or the premultChannel is set to None, the image data is left untouched, but its premultiplication state is set to PreMultiplied.

See also: https://web.archive.org/web/20210413043727/http://opticalenquiry.com/nuke/index.php?title=Premultiplication

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Plane / `inputPlane` | Choice | Color.RGBA | The plane channels to premult<br>**Color.RGBA (uk.co.thefoundry.OfxImagePlaneColour)**<br>**DisparityLeft.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityLeft)**<br>**DisparityRight.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityRight)**<br>**Backward.Motion (uk.co.thefoundry.OfxImagePlaneBackMotionVector)**<br>**Forward.Motion (uk.co.thefoundry.OfxImagePlaneForwardMotionVector)** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| By / `premultChannel` | Choice | Color.A | The channel to use for (un)premult.<br>**Color.R (uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input Source<br>**Color.G (uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input Source<br>**Color.B (uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input Source<br>**Color.A (uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input Source<br>**0**: 0 constant channel<br>**1**: 1 constant channel |
| All Planes / `processAllPlanes` | Boolean | Off | When checked all planes in input will be processed and output to the same plane as in input. It is useful for example to apply a Transform effect on all planes. |
| Clip Info… / `clipInfo` | Button | | Display information about the inputs |

### 2.10.16 RotoMerge node

*This documentation is for version 2.0 of RotoMerge (net.sf.openfx.MergeRoto).*

#### Description

Pixel-by-pixel merge operation between two inputs using and external alpha channel for input A. All channels from input A are merged with those from B, using RotoMask as the alpha channel for input A: the alpha channel from A is thus merged onto the alpha channel from B using the RotoMask as the alpha value ("a" in the formulas). This may be useful, for example, to "paint" alpha values from A onto the alpha channel of B using a given operation with an external alpha mask (which may be opaque even where the alpha channel of A is zero).

A description of most operators is available in the W3C Compositing and Blending Level 1 Recommendation https://www.w3.org/TR/compositing-1/ and a complete explanation of the Porter-Duff compositing operators can be found in "Compositing Digital Images", by T. Porter and T. Duff (Proc. SIGGRAPH 1984) http://keithp.com/~keithp/porterduff/p253-porter.pdf

Note that if an input with only RGB components is connected to A or B, its alpha channel is considered to be opaque (one) by default, thus the output will be completely opaque if the checkbox for channel A of input B is checked. One reason for this behaviour is that non-zero RGB values with a zero A value are not valid alpha-premultiplied RGBA values. If the user wishes to keep the background fully transparent, it can only be black, which is equivalent to not using the merge operator. Non-black fully transparent pixels should never appear anywhere in a proper compositing graph.

### Operators

The following operators are available.

### Porter-Duff compositing operators

- copy: A (a.k.a. src)
- over: A+B(1-a) (a.k.a. src-over)
- under: A(1-b)+B (a.k.a. dst-over)
- in: Ab (a.k.a. src-in)
- mask: Ba (a.k.a dst-in)
- out: A(1-b) (a.k.a. src-out)
- stencil: B(1-a) (a.k.a. dst-out)
- atop: Ab + B(1 - a) (a.k.a. src-atop)
- xor: A(1-b)+B(1-a)

### Blend modes, see https://en.wikipedia.org/wiki/Blend_modes

### Multiply and Screen

- multiply: AB, A if A < 0 and B < 0
- screen: A+B-AB if A or B <= 1, otherwise max(A, B)
- overlay: multiply(A, 2*B) if B < 0.5, screen(A, 2*B - 1) if B > 0.5
- hard-light: multiply(2*A, B) if A < 0.5, screen(2*A - 1, B) if A > 0.5
- soft-light: burn-in if A < 0.5, lighten if A > 0.5

### Dodge and burn

- color-dodge: brighten B towards A
- color-burn: darken B towards A
- pinlight: if B >= 0.5 then max(A, 2*B - 1), min(A, B * 2) else
- difference: abs(A-B) (a.k.a. absminus)
- exclusion: A+B-2AB
- divide: A/B, 0 if A < 0 and B < 0

### Simple arithmetic blend modes

- divide: A/B, 0 if A < 0 and B < 0
- plus: A+B (a.k.a. add)
- from: B-A (a.k.a. subtract)
- minus: A-B
- difference: abs(A-B) (a.k.a. absminus)
- min: min(A, B) (a.k.a. darken only)
- max: max(A, B) (a.k.a. lighten only)

### Hue, saturation and luminosity

- hue: SetLum(SetSat(A, Sat(B)), Lum(B))
- saturation: SetLum(SetSat(B, Sat(A)), Lum(B))
- color: SetLum(A, Lum(B))
- luminosity: SetLum(B, Lum(A))

### Other

- average: (A + B) / 2
- conjoint-over: A + B(1-a)/b, A if a > b
- disjoint-over: A+B(1-a)/b, A+B if a+b < 1
- freeze: 1-sqrt(1-A)/B
- geometric: 2AB/(A+B)
- grain-extract: B - A + 0.5
- grain-merge: B + A - 0.5
- hypot: sqrt(A*A+B*B)
- matte: Aa + B(1-a) (unpremultiplied over)
- reflect: A*A / (1 - B)

See also:

- "Digital Image Compositing" by Marc Levoy https://graphics.stanford.edu/courses/cs248-06/comp/comp.html
- "Compositing and Blending Level 1" https://www.w3.org/TR/compositing-1/
- "SVG Compositing Specification" https://www.w3.org/TR/SVGCompositing/
- "ISO 32000-1:2008: Portable Document Format (July 2008)", Sec. 11.3 "Basic Compositing Operations" http://www.adobe.com/devnet/pdf/pdf_reference.html
- "Merge" by Martin Constable https://web.archive.org/web/20220627015903/http://www.opticalenquiry.com/nuke/index.php?title=Merge
- "Merge Blend Modes" by Martin Constable https://web.archive.org/web/20220807185657/http://www.opticalenquiry.com/nuke/index.php?title=Merge_Blend_Modes
- "Primacy of the B Feed" by Martin Constable https://web.archive.org/web/20220807185551/http://www.opticalenquiry.com/nuke/index.php?title=Primacy_of_the_B_Feed

- grain-extract and grain-merge are described in http://docs.gimp.org/en/gimp-concepts-layer-modes.html

### Inputs

| Input | Description | Optional |
|---|---|---|
| B | The main input. This input is passed through when the merge node is disabled. | Yes |
| A | The image sequence to merge with input B. | Yes |
| Mask | | Yes |
| A2 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Operation / `operation` | Choice | over | The operation used to merge the input A and B images.<br>The operator formula is applied to each component: A and B represent the input component (Red, Green, Blue, or Alpha) of each input, and a and b represent the alpha channel of each input.<br>If Alpha masking is checked, the output alpha is computed using a different formula (a+b - a*b).<br>Alpha masking is always enabled for HSL modes (hue, saturation, color, luminosity).<br>**atop**: Ab + B(1 - a) (a.k.a. src-atop)<br>**average**: (A + B) / 2<br>**color**: SetLum(A, Lum(B))<br>**color-burn**: darken B towards A<br>**color-dodge**: brighten B towards A<br>**conjoint-over**: A + B(1-a)/b, A if a > b<br>**copy**: A (a.k.a. src)<br>**difference**: abs(A-B) (a.k.a. absminus)<br>**disjoint-over**: A+B(1-a)/b, A+B if a+b < 1<br>**divide**: A/B, 0 if A < 0 and B < 0<br>**exclusion**: A+B-2AB<br>**freeze**: 1-sqrt(1-A)/B<br>**from**: B-A (a.k.a. subtract)<br>**geometric**: 2AB/(A+B)<br>**grain-extract**: B - A + 0.5<br>**grain-merge**: B + A - 0.5<br>**hard-light**: multiply(2*A, B) if A < 0.5, screen(2*A - 1, B) if A > 0.5<br>**hue**: SetLum(SetSat(A, Sat(B)), Lum(B))<br>**hypot**: sqrt(A*A+B*B)<br>**in**: Ab (a.k.a. src-in)<br>**luminosity**: SetLum(B, Lum(A))<br>**mask**: Ba (a.k.a dst-in)<br>**matte**: Aa + B(1-a) (unpremultiplied over)<br>**max**: max(A, B) (a.k.a. lighten only)<br>**min**: min(A, B) (a.k.a. darken only)<br>**minus**: A-B<br>**multiply**: AB, A if A < 0 and B < 0<br>**out**: A(1-b) (a.k.a. src-out)<br>**over**: A+B(1-a) (a.k.a. src-over)<br>**overlay**: multiply(A, 2*B) if B < 0.5, screen(A, 2*B - 1) if B > 0.5<br>**pinlight**: if B >= 0.5 then max(A, 2*B - 1), min(A, B * 2) else<br>**plus**: A+B (a.k.a. add)<br>**reflect**: A*A / (1 - B)<br>**saturation**: SetLum(SetSat(B, Sat(A)), Lum(B))<br>**screen**: A+B-AB if A or B <= 1, otherwise max(A, B)<br>**soft-light**: burn-in if A < 0.5, lighten if A > 0.5<br>**stencil**: B(1-a) (a.k.a. dst-out)<br>**under**: A(1-b)+B (a.k.a. dst-over)<br>**xor**: A(1-b)+B(1-a) |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Bounding Box / `bbox` | Choice | Union | What to use to produce the output image's bounding box.<br>**Union (union)**: Union of all connected inputs.<br>**Intersection (intersection)**: Intersection of all connected inputs.<br>**A (a)**: Bounding box of input A.<br>**B (b)**: Bounding box of input B. |
| Alpha masking / `screenAlpha` | Boolean | Off | When enabled, the input images are unchanged where the other image has 0 alpha, and the output alpha is set to a+b - a*b. When disabled the alpha channel is processed as any other channel. Option is disabled for operations where it does not apply or makes no difference. |
| R / `AChannelsR` | Boolean | On | Use red channel from A input(s). |
| G / `AChannelsG` | Boolean | On | Use green channel from A input(s). |
| B / `AChannelsB` | Boolean | On | Use blue channel from A input(s). |
| A / `AChannelsA` | Boolean | On | Use alpha channel from A input(s). |
| R / `BChannelsR` | Boolean | On | Use red channel from B input. |
| G / `BChannelsG` | Boolean | On | Use green channel from B input. |
| B / `BChannelsB` | Boolean | On | Use blue channel from B input. |
| A / `BChannelsA` | Boolean | On | Use alpha channel from B input. |
| R / `OutputChannelsR` | Boolean | On | Write red channel to output. |
| G / `OutputChannelsG` | Boolean | On | Write green channel to output. |
| B / `OutputChannelsB` | Boolean | On | Write blue channel to output. |
| A / `OutputChannelsA` | Boolean | On | Write alpha channel to output. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.10.17 Screen node

The *Screen* node is a convenience node identical to the *Merge node*, except that the operator is set to *screen* by default.

### 2.10.18 SeExpr node

*This documentation is for version 2.0 of SeExpr (fr.inria.openfx.SeExpr).*

#### Description

Use the SeExpr expression language (by Walt Disney Animation Studios) to process images.

#### What is SeExpr?

SeExpr is a very simple mathematical expression language used in graphics software (RenderMan, Maya, Mudbox, Yeti).

See the SeExpr Home Page and SeExpr Language Documentation for more information.

SeExpr is licensed under the Apache License, Version 2.0, and is Copyright Disney Enterprises, Inc.

#### SeExpr vs. SeExprSimple

The SeExpr plugin comes in two versions:

- *SeExpr* has a single vector expression for the color channels, and a scalar expression for the alpha channel. The source color is accessed through the `Cs`vector, and alpha through the `As` scalar, as specified in the original SeExpr language.
- *SeExprSimple* has one scalar expression per channel, and the source channels may also be accessed through scalars (`r`, `g`, `b`, `a`).

#### SeExpr extensions

A few pre-defined variables and functions were added to the language for filtering and blending several input images.

The following pre-defined variables can be used in the script:

- `x`: X coordinate (in pixel units) of the pixel to render.
- `y`: Y coordinate (in pixel units) of the pixel to render.
- `u`: X coordinate (normalized in the [0,1] range) of the output pixel to render.
- `v`: Y coordinate (normalized in the [0,1] range) of the output pixel to render.
- `sx`, `sy`: Scale at which the image is being rendered. Depending on the zoom level of the viewer, the image might be rendered at a lower scale than usual. This parameter is useful when producing spatial effects that need to be invariant to the pixel scale, especially when using X and Y coordinates. (0.5,0.5) means that the image is being rendered at half of its original size.
- `par`: The pixel aspect ratio.
- `cx`, `cy`: Shortcuts for `(x + 0.5)/par/sx` and `(y + 0.5)/sy`, i.e. the canonical coordinates of the current pixel.
- `frame`: Current frame being rendered
- `Cs`, `As`: Color (RGB vector) and alpha (scalar) of the image from input 1.

- `CsN`, `AsN`: Color (RGB vector) and alpha (scalar) of the image from input N, e.g. `Cs2` and `As2` for input 2.
- `output_width`, `output_height`: Dimensions of the output image being rendered.
- `input_width`, `input_height`: Dimensions of image from input 1, in pixels.
- `input_widthN`, `input_heightN`: Dimensions of image from input N, e.g. `input_width2` and `input_height2` for input 2.

The following additional functions are available:

- `color cpixel(int i, int f, float x, float y, int interp = 0)`: interpolates the color from input i at the pixel position (x,y) in the image, at frame f.
- `float apixel(int i, int f, float x, float y, int interp = 0)`: interpolates the alpha from input i at the pixel position (x,y) in the image, at frame f.

The pixel position of the center of the bottom-left pixel is (0., 0.).

The first input has index i=1.

`interp` controls the interpolation filter, and can take one of the following values:

- 0: impulse - (nearest neighbor / box) Use original values
- 1: bilinear - (tent / triangle) Bilinear interpolation between original values
- 2: cubic - (cubic spline) Some smoothing
- 3: Keys - (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*)
- 4: Simon - Some smoothing, plus medium sharpening (*)
- 5: Rifman - Some smoothing, plus significant sharpening (*)
- 6: Mitchell - Some smoothing, plus blurring to hide pixelation (*)(+)
- 7: Parzen - (cubic B-spline) Greatest smoothing of all filters (+)
- 8: notch - Flat smoothing (which tends to hide moire' patterns) (+)

Some filters may produce values outside of the initial range (*) or modify the values even at integer positions (+).

### Sample scripts

#### Add green channel to red, keep green, and apply a 50% gain on blue

*SeExprSimple:*

```
r+g
g
0.5*b
```

*SeExpr:*

```
[Cs[0]+Cs[1], Cs[1], 0.5*Cs[2]]
```

### "Multiply" merge operator on inputs 1 and 2

*SeExprSimple:*

```
r*r2
g*g2
b*b2
a+a2-a*a2
```

*SeExpr:*

```
Cs * Cs2
As + As2 - As * As2
```

### "Over" merge operator on inputs 1 and 2

*SeExprSimple:*

```
r+r2*(1-a)
g+g2*(1-a)
b+b2*(1-a)
a+a2-a*a2
```

*SeExpr:*

```
Cs + Cs2 * (1 -  As)
As + As2 - As * As2
```

### Generating a time-varying colored Perlin noise with size x1

```
cnoise([cx/x1,cy/x1,frame])
```

### Average pixels over the previous, current and next frame

*SeExpr:*

```
prev = cpixel(1,frame - 1,x,y);
cur = Cs;
next = cpixel(1,frame + 1,x,y);
(prev + cur + next) / 3;
```

### "Wave" - displace columns of pixels vertically according to a sine wave function

*SeExpr:*

```
cpixel(1,frame,x,y+x2*sy*sin(2*3.1416*(x/sx - x3)/x1),2)
```

Set the No. of scalar params to 3.

- x1 is the horizontal wavelength in pixels.
- x2 is the vertical amplitude in pixels.
- x3 is the horizontal shift in pixels.

### Custom parameters

To use custom variables that are pre-defined in the plug-in (scalars, positions and colors) you must reference them using their script-name in the expression. For example, the parameter x1 can be referenced using x1 in the script:

```
Cs + x1
```

### Multi-instruction expressions

If an expression spans multiple instructions (usually written one per line), each instruction must end with a semi-colon (';'). The last instruction of the expression is considered as the final value of the pixel (a RGB vector or an Alpha scalar, depending on the script), and must not be terminated by a semicolon. More documentation is available on the SeExpr website.

### Accessing pixel values from other frames

The input frame range used to render a given output frame is computed automatically if the following conditions hold:

- The `frame` parameter to cpixel/apixel must not depend on the color or alpha of a pixel, nor on the result of another call to cpixel/apixel
- A call to cpixel/apixel must not depend on the color or alpha of a pixel, as in the following:

  if (As > 0.1) { src = cpixel(1,frame,x,y); } else { src = [0,0,0]; }

If one of these conditions does not hold, all frames from the specified input frame range are asked for.

### Inputs

| Input | Description | Optional |
|---|---|---|
| 1 | | Yes |
| 2 | | Yes |
| 3 | | Yes |
| 4 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Region of Definition / `rod` | Choice | Union | Region of definition (extent) of the output.<br>**Union (union)**: The output region is the union of the regions of definition of all connected inputs.<br>**Intersection (intersection)**: The output region is the intersection the regions of definition of all connected inputs.<br>**Size (size)**: The output region is the size of the rectangle overlay.<br>**Format (format)**: The output region is the specified format.<br>**Project (project)**: The output region is the size of the project.<br>**Input1 (input1)**: The output region is the region of definition of input 1<br>**Input2 (input2)**: The output region is the region of definition of input 2<br>**Input3 (input3)**: The output region is the region of definition of input 3<br>**Input4 (input4)**: The output region is the region of definition of input 4<br>**Input5 (input5)**: The output region is the region of definition of input 5<br>**Input6 (input6)**: The output region is the region of definition of input 6<br>**Input7 (input7)**: The output region is the region of definition of input 7<br>**Input8 (input8)**: The output region is the region of definition of input 8<br>**Input9 (input9)**: The output region is the region of definition of input 9<br>**Input10 (input10)**: The output region is the region of definition of input 10 |
| Output components / `outputComponents` | Choice | RGBA | Specify what components to output. In RGB only, the alpha script will not be executed. Similarly, in alpha only, the RGB script will not be executed.<br>**RGBA**<br>**RGB**<br>**Alpha** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `format` | Choice | PC_Video 640x480 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x1720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super35(full-ap) 1024x778 (1K_Super35(full-ap))**<br>**1K_Cinemascope 914x778 2 (1K_Cinemascope)**<br>**2K_Super35(full-ap) 2048x1556 (2K_Super35(full-ap))**<br>**2K_Cinemascope 1828x1556 2 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super35(full-ap) 4096x3112 (4K_Super35(full-ap))**<br>**4K_Cinemascope 3656x3112 2 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 w: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| No. of Scalar Params / `doubleParamsNb` | Integer | 0 | Use this to control how many scalar parameters should be exposed to the SeExpr expression. |
| x1 / `x1` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x1 |
| x2 / `x2` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x2 |
| x3 / `x3` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x3 |
| x4 / `x4` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x4 |
| x5 / `x5` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x5 |
| x6 / `x6` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x6 |
| x7 / `x7` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x7 |
| x8 / `x8` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x8 |
| x9 / `x9` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x9 |
| x10 / `x10` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x10 |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| No. of 2D Params / double2DParamsNb | Integer | 0 | Use this to control how many 2D (position) parameters should be exposed to the SeExpr expression. |
| pos1 / pos1 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos1 |
| pos2 / pos2 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos2 |
| pos3 / pos3 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos3 |
| pos4 / pos4 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos4 |
| pos5 / pos5 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos5 |
| pos6 / pos6 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos6 |
| pos7 / pos7 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos7 |
| pos8 / pos8 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos8 |
| pos9 / pos9 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos9 |
| pos10 / pos10 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos10 |
| No. of Color Params / colorParamsNb | Integer | 0 | Use this to control how many color parameters should be exposed to the SeExpr expression. |
| color1 / color1 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color1 |
| color2 / color2 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color2 |
| color3 / color3 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color3 |
| color4 / color4 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color4 |
| color5 / color5 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color5 |
| color6 / color6 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color6 |
| color7 / color7 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color7 |
| color8 / color8 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color8 |
| color9 / color9 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color9 |
| color10 / color10 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color10 |
| Input Frame Range / frameRange | Integer | min: 0 max: 0 | Default input frame range to fetch images from (may be relative or absolute, depending on the "frameRangeAbsolute" parameter). Only used if the frame range cannot be statically computed from the expression. This parameter can be animated. |
| Absolute Frame Range / frameRangeAbsolute | Boolean | Off | If checked, the frame range is given as absolute frame numbers, else it is relative to the current frame. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| RGB Script / `script` | String | | Contents of the SeExpr expression. This expression should output the RGB components as a SeExpr vector. See the description of the plug-in and http://www.disneyanimation.com/technology/seexpr.html for documentation. |
| Alpha Script / `alphaScript` | String | | Contents of the SeExpr expression. This expression should output the alpha component only as a scalar. See the description of the plug-in and http://www.disneyanimation.com/technology/seexpr.html for documentation. |
| Help… / `helpButton` | Button | | Display help about using SeExpr. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.10.19 SeExprSimple node

*This documentation is for version 2.0 of SeExprSimple (fr.inria.openfx.SeExprSimple).*

### Description

Use the SeExpr expression language (by Walt Disney Animation Studios) to process images.

### What is SeExpr?

SeExpr is a very simple mathematical expression language used in graphics software (RenderMan, Maya, Mudbox, Yeti).

See the SeExpr Home Page and SeExpr Language Documentation for more information.

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### SeExpr vs. SeExprSimple

The SeExpr plugin comes in two versions:

- *SeExpr* has a single vector expression for the color channels, and a scalar expression for the alpha channel. The source color is accessed through the `Cs`vector, and alpha through the `As` scalar, as specified in the original SeExpr language.
- *SeExprSimple* has one scalar expression per channel, and the source channels may also be accessed through scalars (`r`, `g`, `b`, `a`).

### SeExpr extensions

A few pre-defined variables and functions were added to the language for filtering and blending several input images.

The following pre-defined variables can be used in the script:

- `x`: X coordinate (in pixel units) of the pixel to render.
- `y`: Y coordinate (in pixel units) of the pixel to render.
- `u`: X coordinate (normalized in the [0,1] range) of the output pixel to render.
- `v`: Y coordinate (normalized in the [0,1] range) of the output pixel to render.
- `sx`, `sy`: Scale at which the image is being rendered. Depending on the zoom level of the viewer, the image might be rendered at a lower scale than usual. This parameter is useful when producing spatial effects that need to be invariant to the pixel scale, especially when using X and Y coordinates. (0.5,0.5) means that the image is being rendered at half of its original size.
- `par`: The pixel aspect ratio.
- `cx`, `cy`: Shortcuts for `(x + 0.5)/par/sx` and `(y + 0.5)/sy`, i.e. the canonical coordinates of the current pixel.
- `frame`: Current frame being rendered
- *SeExprSimple only:* `r`, `g`, `b`, `a`: RGBA channels (scalar) of the image from input 1.
- *SeExprSimple only:* `rN`, `gN`, `bN`, `aN`: RGBA channels (scalar) of the image from input N, e.g. `r2` and `a2` are red and alpha channels from input 2.
- `Cs`, `As`: Color (RGB vector) and alpha (scalar) of the image from input 1.
- `CsN`, `AsN`: Color (RGB vector) and alpha (scalar) of the image from input N, e.g. `Cs2` and `As2` for input 2.
- `output_width`, `output_height`: Dimensions of the output image being rendered.
- `input_width`, `input_height`: Dimensions of image from input 1, in pixels.
- `input_widthN`, `input_heightN`: Dimensions of image from input N, e.g. `input_width2` and `input_height2` for input 2.

The following additional functions are available:

- `color cpixel(int i, int f, float x, float y, int interp = 0)`: interpolates the color from input i at the pixel position (x,y) in the image, at frame f.
- `float apixel(int i, int f, float x, float y, int interp = 0)`: interpolates the alpha from input i at the pixel position (x,y) in the image, at frame f.

The pixel position of the center of the bottom-left pixel is (0., 0.).

The first input has index i=1.

`interp` controls the interpolation filter, and can take one of the following values:

- 0: impulse - (nearest neighbor / box) Use original values
- 1: bilinear - (tent / triangle) Bilinear interpolation between original values
- 2: cubic - (cubic spline) Some smoothing
- 3: Keys - (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*)
- 4: Simon - Some smoothing, plus medium sharpening (*)
- 5: Rifman - Some smoothing, plus significant sharpening (*)
- 6: Mitchell - Some smoothing, plus blurring to hide pixelation (*)(+)
- 7: Parzen - (cubic B-spline) Greatest smoothing of all filters (+)

- 8: notch - Flat smoothing (which tends to hide moire' patterns) (+)

Some filters may produce values outside of the initial range (*) or modify the values even at integer positions (+).

### Sample scripts

#### Add green channel to red, keep green, and apply a 50% gain on blue

*SeExprSimple:*

```
r+g
g
0.5*b
```

*SeExpr:*

```
[Cs[0]+Cs[1], Cs[1], 0.5*Cs[2]]
```

#### "Multiply" merge operator on inputs 1 and 2

*SeExprSimple:*

```
r*r2
g*g2
b*b2
a+a2-a*a2
```

*SeExpr:*

```
Cs * Cs2
As + As2 - As * As2
```

#### "Over" merge operator on inputs 1 and 2

*SeExprSimple:*

```
r+r2*(1-a)
g+g2*(1-a)
b+b2*(1-a)
a+a2-a*a2
```

*SeExpr:*

```
Cs + Cs2 * (1 -  As)
As + As2 - As * As2
```

### Generating a time-varying colored Perlin noise with size x1

```
cnoise([cx/x1,cy/x1,frame])
```

### Average pixels over the previous, current and next frame

*SeExpr:*

```
prev = cpixel(1,frame - 1,x,y);
cur = Cs;
next = cpixel(1,frame + 1,x,y);
(prev + cur + next) / 3;
```

### "Wave" - displace columns of pixels vertically according to a sine wave function

*SeExpr:*

```
cpixel(1,frame,x,y+x2*sy*sin(2*3.1416*(x/sx - x3)/x1),2)
```

Set the No. of scalar params to 3.

- x1 is the horizontal wavelength in pixels.
- x2 is the vertical amplitude in pixels.
- x3 is the horizontal shift in pixels.

### Custom parameters

To use custom variables that are pre-defined in the plug-in (scalars, positions and colors) you must reference them using their script-name in the expression. For example, the parameter x1 can be referenced using x1 in the script:

```
Cs + x1
```

### Multi-instruction expressions

If an expression spans multiple instructions (usually written one per line), each instruction must end with a semi-colon (';'). The last instruction of the expression is considered as the final value of the pixel (a RGB vector or an Alpha scalar, depending on the script), and must not be terminated by a semicolon. More documentation is available on the SeExpr website.

### Accessing pixel values from other frames

The input frame range used to render a given output frame is computed automatically if the following conditions hold:

- The `frame` parameter to cpixel/apixel must not depend on the color or alpha of a pixel, nor on the result of another call to cpixel/apixel
- A call to cpixel/apixel must not depend on the color or alpha of a pixel, as in the following:

  if (As > 0.1) { src = cpixel(1,frame,x,y); } else { src = [0,0,0]; }

If one of these conditions does not hold, all frames from the specified input frame range are asked for.

### Inputs

| Input | Description | Optional |
|---|---|---|
| 1 | | Yes |
| 2 | | Yes |
| 3 | | Yes |
| 4 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Region of Definition / `rod` | Choice | Union | Region of definition (extent) of the output.<br>**Union (union)**: The output region is the union of the regions of definition of all connected inputs.<br>**Intersection (intersection)**: The output region is the intersection the regions of definition of all connected inputs.<br>**Size (size)**: The output region is the size of the rectangle overlay.<br>**Format (format)**: The output region is the specified format.<br>**Project (project)**: The output region is the size of the project.<br>**Input1 (input1)**: The output region is the region of definition of input 1<br>**Input2 (input2)**: The output region is the region of definition of input 2<br>**Input3 (input3)**: The output region is the region of definition of input 3<br>**Input4 (input4)**: The output region is the region of definition of input 4<br>**Input5 (input5)**: The output region is the region of definition of input 5<br>**Input6 (input6)**: The output region is the region of definition of input 6<br>**Input7 (input7)**: The output region is the region of definition of input 7<br>**Input8 (input8)**: The output region is the region of definition of input 8<br>**Input9 (input9)**: The output region is the region of definition of input 9<br>**Input10 (input10)**: The output region is the region of definition of input 10 |
| Output components / `outputComponents` | Choice | RGBA | Specify what components to output. In RGB only, the alpha script will not be executed. Similarly, in alpha only, the RGB script will not be executed.<br>**RGBA**<br>**RGB**<br>**Alpha** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `format` | Choice | PC_Video 640x480 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x1720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super35(full-ap) 1024x778 (1K_Super35(full-ap))**<br>**1K_Cinemascope 914x778 2 (1K_Cinemascope)**<br>**2K_Super35(full-ap) 2048x1556 (2K_Super35(full-ap))**<br>**2K_Cinemascope 1828x1556 2 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super35(full-ap) 4096x3112 (4K_Super35(full-ap))**<br>**4K_Cinemascope 3656x3112 2 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 w: 1 | Width and height of the size rectangle. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| No. of Scalar Params / `doubleParamsNb` | Integer | 0 | Use this to control how many scalar parameters should be exposed to the SeExpr expression. |
| x1 / `x1` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x1 |
| x2 / `x2` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x2 |
| x3 / `x3` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x3 |
| x4 / `x4` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x4 |
| x5 / `x5` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x5 |
| x6 / `x6` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x6 |
| x7 / `x7` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x7 |
| x8 / `x8` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x8 |
| x9 / `x9` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x9 |
| x10 / `x10` | Double | 0 | A custom 1-dimensional variable that can be referenced in the expression by its script-name, x10 |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| No. of 2D Params / double2DParamsNb | Integer | 0 | Use this to control how many 2D (position) parameters should be exposed to the SeExpr expression. |
| pos1 / pos1 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos1 |
| pos2 / pos2 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos2 |
| pos3 / pos3 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos3 |
| pos4 / pos4 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos4 |
| pos5 / pos5 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos5 |
| pos6 / pos6 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos6 |
| pos7 / pos7 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos7 |
| pos8 / pos8 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos8 |
| pos9 / pos9 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos9 |
| pos10 / pos10 | Double | x: 0 y: 0 | A custom 2-dimensional variable that can be referenced in the expression by its script-name, pos10 |
| No. of Color Params / colorParamsNb | Integer | 0 | Use this to control how many color parameters should be exposed to the SeExpr expression. |
| color1 / color1 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color1 |
| color2 / color2 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color2 |
| color3 / color3 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color3 |
| color4 / color4 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color4 |
| color5 / color5 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color5 |
| color6 / color6 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color6 |
| color7 / color7 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color7 |
| color8 / color8 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color8 |
| color9 / color9 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color9 |
| color10 / color10 | Color | r: 0 g: 0 b: 0 | A custom RGB variable that can be referenced in the expression by its script-name, color10 |
| Input Frame Range / frameRange | Integer | min: 0 max: 0 | Default input frame range to fetch images from (may be relative or absolute, depending on the "frameRangeAbsolute" parameter). Only used if the frame range cannot be statically computed from the expression. This parameter can be animated. |
| Absolute Frame Range / frameRangeAbsolute | Boolean | Off | If checked, the frame range is given as absolute frame numbers, else it is relative to the current frame. |
| R= / rExpr | String | | Expression to compute the output red channel. If empty, the channel is left unchanged. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| G= / `gExpr` | String | | Expression to compute the output green channel. If empty, the channel is left unchanged. |
| B= / `bExpr` | String | | Expression to compute the output blue channel. If empty, the channel is left unchanged. |
| A= / `aExpr` | String | | Expression to compute the output alpha channel. If empty, the channel is left unchanged. |
| Help... / `helpButton` | Button | | Display help about using SeExpr. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.10.20 Switch node

*This documentation is for version 1.0 of Switch (net.sf.openfx.switchPlugin).*

### Description

Lets you switch between any number of inputs.

The selected input number may be manually selected using the "which" parameter, or selected automatically if "automatic" is checked.

Automatic selection works by selecting, at any given time, the first input which is connected and has a non-empty region of definition.

A typical use case is a graph where an edited movie is used as input, then split into shots using one FrameRange plugin per shot (with "before" and "after" set to "Black"), followed by a different processing for each shot (e.g. stabilization, color correction, cropping), and all outputs are gathered into an edited movie using a single "Switch" plug-in in automatic mode. In this graph, no plug-in shifts time, and thus there is no risk of desynchronization, whereas using "AppendClip" instead of "Switch" may shift time if there is an error in one of the FrameRange ranges (a typical error is to use the same frame number as the last frame of shot n and the first frame of shot n+1).

This plugin concatenates transforms.

See also: https://web.archive.org/web/20220120145727/http://opticalenquiry.com/nuke/index.php?title=Switch

### Inputs

| Input | Description | Optional |
|---|---|---|
| 0 | | Yes |
| 1 | | Yes |
| 2 | | Yes |
| 3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Which / `which` | Integer | 0 | The input to display. Each input is displayed at the value corresponding to the number of the input. For example, setting which to 4 displays the image from input 4. |
| Automatic / `automatic` | Boolean | Off | When checked, automatically switch to the first connected input with a non-empty region of definition. This can be used to recompose a single clip from effects applied to different frame ranges. |

## 2.10.21 TimeDissolve node

*This documentation is for version 1.0 of TimeDissolve (net.sf.openfx.TimeDissolvePlugin).*

### Description

Dissolves between two inputs, starting the dissolve at the in frame and ending at the out frame.

You can specify the dissolve curve over time, if the OFX host supports it (else it is a traditional smoothstep).

See also https://web.archive.org/web/20220627033151/http://www.opticalenquiry.com/nuke/index.php?title=TimeDissolve

### Inputs

| Input | Description | Optional |
|---|---|---|
| B | The input you intend to dissolve from. | Yes |
| A | The input you intend to dissolve from. | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| In / `dissolveIn` | Integer | 1 | Start dissolve at this frame number. |
| Out / `dissolveOut` | Integer | 10 | End dissolve at this frame number. |
| Curve / `dissolveCurve` | Parametric | | Shape of the dissolve. Horizontal value is from 0 to 1: 0 is the frame before the In frame and should have a value of 0; 1 is the frame after the Out frame and should have a value of 1. |

## 2.10.22 Unpremult node

*This documentation is for version 2.0 of Unpremult (net.sf.openfx.Unpremult).*

### Description

Divide the selected channels by alpha (or another channel)

If no channel is selected, or the premultChannel is set to None, the image data is left untouched, but its premultiplication state is set to UnPreMultiplied.

See also: https://web.archive.org/web/20210413043727/http://opticalenquiry.com/nuke/index.php?title=Premultiplication

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Plane / `inputPlane` | Choice | Color.RGBA | The plane channels to premult<br>**Color.RGBA (uk.co.thefoundry.OfxImagePlaneColour)**<br>**DisparityLeft.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityLeft)**<br>**DisparityRight.Disparity (uk.co.thefoundry.OfxImagePlaneStereoDisparityRight)**<br>**Backward.Motion (uk.co.thefoundry.OfxImagePlaneBackMotionVector)**<br>**Forward.Motion (uk.co.thefoundry.OfxImagePlaneForwardMotionVector)** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| By / `premultChannel` | Choice | Color.A | The channel to use for (un)premult.<br>**Color.R (uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input Source<br>**Color.G (uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input Source<br>**Color.B (uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input Source<br>**Color.A (uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input Source<br>**0**: 0 constant channel<br>**1**: 1 constant channel |
| All Planes / `processAllPlanes` | Boolean | Off | When checked all planes in input will be processed and output to the same plane as in input. It is useful for example to apply a Transform effect on all planes. |
| Clip Info… / `clipInfo` | Button | | Display information about the inputs |

## 2.11 Transform nodes

The following sections contain documentation about every node in the Transform group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.11.1 AdjustRoD node

*This documentation is for version 1.1 of AdjustRoD (net.sf.openfx.AdjustRoDPlugin).*

#### Description

Enlarges the input image by a given amount of black and transparent pixels.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Add Pixels / `addPixels` | Double | w: 0 h: 0 | How many pixels to add on each side for both dimensions (width/height) |
| Border Conditions / `boundary` | Choice | Nearest | Specifies how pixel values are computed out of the image domain. This mostly affects values at the boundary of the image. If the image represents intensities, Nearest (Neumann) conditions should be used. If the image represents gradients or derivatives, Black (Dirichlet) boundary conditions should be used.<br>**Black (black)**: Dirichlet boundary condition: pixel values out of the image domain are zero.<br>**Nearest (nearest)**: Neumann boundary condition: pixel values out of the image domain are those of the closest pixel location in the image domain. |

## 2.11.2 Card3D node

*This documentation is for version 1.0 of Card3D (net.sf.openfx.Card3D).*

### Description

Card3D.

This effect applies a transform that corresponds to projection the source image onto a 3D card in space. The 3D card is positioned with relative to the Axis position, and the Camera position may also be given. The Axis may be used to apply the same global motion to several cards.

This plugin concatenates transforms.

See also https://web.archive.org/web/20210727235824/opticalenquiry.com/nuke/index.php?title=Card3D

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Import Format / `axisImportFormat` | Choice | chan | The format of the file to import.<br>**chan**: Chan format, each line is FRAME TX TY TZ RX RY RZ VFOV. Can be created using Natron, Nuke, 3D-Equalizer, Maya and other 3D tracking software. Be careful that the rotation order must be exactly the same when exporting and importing the chan file.<br>**Boujou (boujou)**: Boujou text export. In Boujou, after finishing the track and solving, go to Export > Export Camera Solve (Or press F12) > choose where to save the data and give it a name, click he drop down Export Type and make sure it will save as a .txt, then click Save. Each camera line is R(0,0) R(0,1) R(0,2) R(1,0) R(1,1) R(1,2) R(2,0) R(2,1) R(2,2) Tx Ty Tz F(mm). |
| Import / `axisImportFile` | N/A | | Import a chan file created using 3D tracking software, or a txt file created using Boujou. |
| Export / `axisExportChan` | N/A | | Export a .chan file which can be used in Natron, Nuke or 3D tracking software, such as 3D-Equalizer, Maya, or Boujou. Be careful that the rotation order must be exactly the same when exporting and importing the chan file. |
| Transform Order / `axisXformOrder` | Choice | SRT | Order in which scale (S), rotation (R) and translation (T) are applied.<br>**SRT (srt)**: Scale, Rotation, Translation.<br>**STR (str)**: Scale, Translation, Rotation.<br>**RST (rst)**: Rotation, Scale, Translation.<br>**RTS (rts)**: Rotation, Translation, Scale.<br>**TSR (tsr)**: Translation, Scale, Rotation.<br>**TRS (trs)**: Translation, Rotation, Scale. |
| Rotation Order / `axisRotOrder` | Choice | ZXY | Order in which Euler angles are applied in the rotation.<br>**XYZ (xyz)**: Rotation over X axis, then Y and Z.<br>**XZY (xzy)**: Rotation over X axis, then Z and Y.<br>**YXZ (yxz)**: Rotation over Y axis, then X and Z.<br>**YZX (yzx)**: Rotation over Y axis, then Z and X.<br>**ZXY (zxy)**: Rotation over Z axis, then X and Y.<br>**ZYX (zyx)**: Rotation over Z axis, then Y and X. |
| Translate / `axisTranslate` | Double | x: 0 y: 0 z: 0 | Translation component. |
| Rotate / `axisRotate` | Double | x: 0 y: 0 z: 0 | Euler angles (in degrees). |
| Scale / `axisScaling` | Double | x: 1 y: 1 z: 1 | Scale factor over each axis. |
| Uniform Scale / `axisUniformScale` | Double | 1 | Scale factor over all axis. It is multiplied by the scale factor over each axis. |
| Skew / `axisSkew` | Double | x: 0 y: 0 z: 0 | Skew over each axis, in degrees. |
| Pivot / `axisPivot` | Double | x: 0 y: 0 z: 0 | The position of the origin for position, scaling, skewing, and rotation. |
| Specify Matrix / `axisUseMatrix` | Boolean | Off | Check to specify manually all the values for the position matrix. |
| / `axisMatrix11` | Double | 1 | Matrix coefficient. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| / axisMatrix12 | Double | 0 | Matrix coefficient. |
| / axisMatrix13 | Double | 0 | Matrix coefficient. |
| / axisMatrix14 | Double | 0 | Matrix coefficient. |
| / axisMatrix21 | Double | 0 | Matrix coefficient. |
| / axisMatrix22 | Double | 1 | Matrix coefficient. |
| / axisMatrix23 | Double | 0 | Matrix coefficient. |
| / axisMatrix24 | Double | 0 | Matrix coefficient. |
| / axisMatrix31 | Double | 0 | Matrix coefficient. |
| / axisMatrix32 | Double | 0 | Matrix coefficient. |
| / axisMatrix33 | Double | 1 | Matrix coefficient. |
| / axisMatrix34 | Double | -1 | Matrix coefficient. |
| / axisMatrix41 | Double | 0 | Matrix coefficient. |
| / axisMatrix42 | Double | 0 | Matrix coefficient. |
| / axisMatrix43 | Double | 0 | Matrix coefficient. |
| / axisMatrix44 | Double | 1 | Matrix coefficient. |
| Enable Camera / camEnable | Boolean | Off | Enable the camera projection parameters. |
| Cam Import Format / camImportFormat | Choice | chan | The format of the file to import.<br>**chan**: Chan format, each line is FRAME TX TY TZ RX RY RZ VFOV. Can be created using Natron, Nuke, 3D-Equalizer, Maya and other 3D tracking software. Be careful that the rotation order must be exactly the same when exporting and importing the chan file.<br>**Boujou (boujou)**: Boujou text export. In Boujou, after finishing the track and solving, go to Export > Export Camera Solve (Or press F12) > choose where to save the data and give it a name, click he drop down Export Type and make sure it will save as a .txt, then click Save. Each camera line is R(0,0) R(0,1) R(0,2) R(1,0) R(1,1) R(1,2) R(2,0) R(2,1) R(2,2) Tx Ty Tz F(mm). |
| Cam Import / camImportFile | N/A | | Import a chan file created using 3D tracking software, or a txt file created using Boujou. |
| Cam Export / camExportChan | N/A | | Export a .chan file which can be used in Natron, Nuke or 3D tracking software, such as 3D-Equalizer, Maya, or Boujou. Be careful that the rotation order must be exactly the same when exporting and importing the chan file. |

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Table 158 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Cam Transform Order / camXformOrder | Choice | SRT | Order in which scale (S), rotation (R) and translation (T) are applied.<br>**SRT (srt)**: Scale, Rotation, Translation.<br>**STR (str)**: Scale, Translation, Rotation.<br>**RST (rst)**: Rotation, Scale, Translation.<br>**RTS (rts)**: Rotation, Translation, Scale.<br>**TSR (tsr)**: Translation, Scale, Rotation.<br>**TRS (trs)**: Translation, Rotation, Scale. |
| Cam Rotation Order / camRotOrder | Choice | ZXY | Order in which Euler angles are applied in the rotation.<br>**XYZ (xyz)**: Rotation over X axis, then Y and Z.<br>**XZY (xzy)**: Rotation over X axis, then Z and Y.<br>**YXZ (yxz)**: Rotation over Y axis, then X and Z.<br>**YZX (yzx)**: Rotation over Y axis, then Z and X.<br>**ZXY (zxy)**: Rotation over Z axis, then X and Y.<br>**ZYX (zyx)**: Rotation over Z axis, then Y and X. |
| Cam Translate / camTranslate | Double | x: 0 y: 0 z: 0 | Translation component. |
| Cam Rotate / camRotate | Double | x: 0 y: 0 z: 0 | Euler angles (in degrees). |
| Cam Scale / camScaling | Double | x: 1 y: 1 z: 1 | Scale factor over each axis. |
| Cam Uniform Scale / camUniformScale | Double | 1 | Scale factor over all axis. It is multiplied by the scale factor over each axis. |
| Cam Skew / camSkew | Double | x: 0 y: 0 z: 0 | Skew over each axis, in degrees. |
| Cam Pivot / camPivot | Double | x: 0 y: 0 z: 0 | The position of the origin for position, scaling, skewing, and rotation. |
| Cam Specify Matrix / camUseMatrix | Boolean | Off | Check to specify manually all the values for the position matrix. |
| Cam / camMatrix11 | Double | 1 | Matrix coefficient. |
| Cam / camMatrix12 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix13 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix14 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix21 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix22 | Double | 1 | Matrix coefficient. |
| Cam / camMatrix23 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix24 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix31 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix32 | Double | 0 | Matrix coefficient. |

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Table 158 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Cam / camMatrix33 | Double | 1 | Matrix coefficient. |
| Cam / camMatrix34 | Double | -1 | Matrix coefficient. |
| Cam / camMatrix41 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix42 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix43 | Double | 0 | Matrix coefficient. |
| Cam / camMatrix44 | Double | 1 | Matrix coefficient. |
| Projection / camprojection_mode | Choice | Perspective | **Perspective (perspective)**: Perspective projection.<br>**Orthographic (orthographic)**: Orthographic projection |
| Focal Length / camfocal | Double | 50 | The camera focal length, in arbitrary units (usually either millimeters or 35 mm equivalent focal length). haperture and vaperture must be expressed in the same units. |
| Horiz. Aperture / camhaperture | Double | 24.576 | The camera horizontal aperture (or film back width), in the same units as the focal length. In the case of scanned film, this can be obtained as image_width * scanner_pitch. |
| Vert. Aperture / camvaperture | Double | 18.672 | The camera vertical aperture (or film back height), in the same units as the focal length. This does not affect the projection (which is computed from haperture and the image aspect ratio), but it is used to compute the focal length from vertical FOV when importing chan files, using the formula: focal = 0.5 * vaperture / tan(vfov/2). It is thus best set as: haperture = vaperture * image_width/image_height. In the case of scanned film, this can be obtained as image_height * scanner_pitch. |
| Window Translate / camwin_translate | Double | x: 0 y: 0 | The camera window (or film back) is translated by this fraction of the horizontal aperture, without changing the position of the camera center. This can be used to model tilt-shift or perspective-control lens. |
| Window Scale / camwin_scale | Double | x: 1 y: 1 | Scale the camera window (or film back). |
| Window Roll / camwinroll | Double | 0 | Rotation (in degrees) of the camera window (or film back) around the z axis. |
| Import Format / cardImportFormat | Choice | chan | The format of the file to import.<br>**chan**: Chan format, each line is FRAME TX TY TZ RX RY RZ VFOV. Can be created using Natron, Nuke, 3D-Equalizer, Maya and other 3D tracking software. Be careful that the rotation order must be exactly the same when exporting and importing the chan file.<br>**Boujou (boujou)**: Boujou text export. In Boujou, after finishing the track and solving, go to Export > Export Camera Solve (Or press F12) > choose where to save the data and give it a name, click he drop down Export Type and make sure it will save as a .txt, then click Save. Each camera line is R(0,0) R(0,1) R(0,2) R(1,0) R(1,1) R(1,2) R(2,0) R(2,1) R(2,2) Tx Ty Tz F(mm). |
| Import / cardImportFile | N/A | | Import a chan file created using 3D tracking software, or a txt file created using Boujou. |

continues on next page

Table 158 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Export / cardExportChan | N/A | | Export a .chan file which can be used in Natron, Nuke or 3D tracking software, such as 3D-Equalizer, Maya, or Boujou. Be careful that the rotation order must be exactly the same when exporting and importing the chan file. |
| Transform Order / cardXformOrder | Choice | SRT | Order in which scale (S), rotation (R) and translation (T) are applied.<br>**SRT (srt)**: Scale, Rotation, Translation.<br>**STR (str)**: Scale, Translation, Rotation.<br>**RST (rst)**: Rotation, Scale, Translation.<br>**RTS (rts)**: Rotation, Translation, Scale.<br>**TSR (tsr)**: Translation, Scale, Rotation.<br>**TRS (trs)**: Translation, Rotation, Scale. |
| Rotation Order / cardRotOrder | Choice | ZXY | Order in which Euler angles are applied in the rotation.<br>**XYZ (xyz)**: Rotation over X axis, then Y and Z.<br>**XZY (xzy)**: Rotation over X axis, then Z and Y.<br>**YXZ (yxz)**: Rotation over Y axis, then X and Z.<br>**YZX (yzx)**: Rotation over Y axis, then Z and X.<br>**ZXY (zxy)**: Rotation over Z axis, then X and Y.<br>**ZYX (zyx)**: Rotation over Z axis, then Y and X. |
| Translate / cardTranslate | Double | x: 0 y: 0 z: -1 | Translation component. |
| Rotate / cardRotate | Double | x: 0 y: 0 z: 0 | Euler angles (in degrees). |
| Scale / cardScaling | Double | x: 1 y: 1 z: 1 | Scale factor over each axis. |
| Uniform Scale / cardUniformScale | Double | 1 | Scale factor over all axis. It is multiplied by the scale factor over each axis. |
| Skew / cardSkew | Double | x: 0 y: 0 z: 0 | Skew over each axis, in degrees. |
| Pivot / cardPivot | Double | x: 0 y: 0 z: 0 | The position of the origin for position, scaling, skewing, and rotation. |
| Specify Matrix / cardUseMatrix | Boolean | Off | Check to specify manually all the values for the position matrix. |
| / cardMatrix11 | Double | 1 | Matrix coefficient. |
| / cardMatrix12 | Double | 0 | Matrix coefficient. |
| / cardMatrix13 | Double | 0 | Matrix coefficient. |
| / cardMatrix14 | Double | 0 | Matrix coefficient. |
| / cardMatrix21 | Double | 0 | Matrix coefficient. |
| / cardMatrix22 | Double | 1 | Matrix coefficient. |
| / cardMatrix23 | Double | 0 | Matrix coefficient. |
| / cardMatrix24 | Double | 0 | Matrix coefficient. |

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Table 158 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| / cardMatrix31 | Double | 0 | Matrix coefficient. |
| / cardMatrix32 | Double | 0 | Matrix coefficient. |
| / cardMatrix33 | Double | 1 | Matrix coefficient. |
| / cardMatrix34 | Double | -1 | Matrix coefficient. |
| / cardMatrix41 | Double | 0 | Matrix coefficient. |
| / cardMatrix42 | Double | 0 | Matrix coefficient. |
| / cardMatrix43 | Double | 0 | Matrix coefficient. |
| / cardMatrix44 | Double | 1 | Matrix coefficient. |
| Lens-In Focal / lensInFocal | Double | 1 | The focal length of the camera that took the picture on the card. The card is scaled so that at distance 1 (which is the default card Z) it occupies the field of view corresponding to lensInFocal and lensInHAperture. |
| Lens-In H.Aperture / lensInHAperture | Double | 1 | The horizontal aperture (or sensor/film back width) of the camera that took the picture on the card. The card is scaled so that at distance 1 (which is the default card Z) it occupies the field of view corresponding to lensInFocal and lensInHAperture. |
| Output Format / format | Choice | Project | Desired format for the output sequence.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset). |
| Center / recenter | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |

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Table 158 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Invert / `invert` | Boolean | Off | Invert the transform. |
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |

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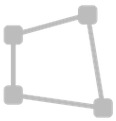
Table 158 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Black outside / `black_outside` | Boolean | On | Fill the area outside the source image with black |
| Motion Blur / `motionBlur` | Double | 0 | Quality of motion blur rendering. 0 disables motion blur, 1 is a good value. Increasing this slows down rendering. |
| Directional Blur Mode / `directionalBlur` | Boolean | Off | Motion blur is computed from the original image to the transformed image, each parameter being interpolated linearly. The motionBlur parameter must be set to a nonzero value, and the blackOutside parameter may have an important effect on the result. |
| Shutter / `shutter` | Double | 0.5 | Controls how long (in frames) the shutter should remain open. |
| Shutter Offset / `shutterOffset` | Choice | Start | Controls when the shutter should be open/closed. Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0).<br>**Centered (centered)**: Centers the shutter around the frame (from t-shutter/2 to t+shutter/2)<br>**Start (start)**: Open the shutter at the frame (from t to t+shutter)<br>**End (end)**: Close the shutter at the frame (from t-shutter to t)<br>**Custom (custom)**: Open the shutter at t+shuttercustomoffset (from t+shuttercustomoffset to t+shuttercustomoffset+shutter) |
| Custom Offset / `shutterCustomOffset` | Double | 0 | When custom is selected, the shutter is open at current time plus this offset (in frames). Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0). |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |

### 2.11.3 CornerPin node



*This documentation is for version 1.0 of CornerPin (net.sf.openfx.CornerPinPlugin).*

#### Description

Allows an image to fit another in translation, rotation and scale.

The resulting transform is a translation if 1 point is enabled, a similarity if 2 are enabled, an affine transform if 3 are enabled, and a homography if they are all enabled.

An effect where an image transitions from a full-frame image to an image placed on a billboard or a screen, or a crash zoom effect, can be obtained by combining the Transform and CornerPin effects and using the Amount parameter on both effects.

Apply a CornerPin followed by a Transform effect (the order is important) and visualize the output superimposed on the target image. While leaving the value of the Amount parameter at 1, tune the Transform parameters (including Scale and Skew) so that the transformed image is as close as possible to the desired target location.

Then, adjust the 'to' points of the CornerPin effect (which should be affected by the Transform) so that the warped image perfectly matches the desired target location. Link the Amount parameter of the Transform and CornerPin effects.

Finally, by animating the Amount parameter of both effects from 0 to 1, the image goes progressively, and with minimal deformations, from full-frame to the target location, creating the desired effect (motion blur can be added on the Transform node, too).

Note that if only the CornerPin effect is used instead of combining CornerPin and Transform, the position of the CornerPin points is linearly interpolated between their 'from' position and their 'to' position, which may result in unrealistic image motion, where the image shrinks and expands, especially when the image rotates.

This plugin concatenates transforms.

See also: https://web.archive.org/web/20220627032200/http://www.opticalenquiry.com/nuke/index.php?title=CornerPin

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| to1 / `to1` | Double | x: 0 y: 0 | |
| enable1 / `enable1` | Boolean | On | Enables the point on the left. |
| to2 / `to2` | Double | x: 1 y: 0 | |
| enable2 / `enable2` | Boolean | On | Enables the point on the left. |
| to3 / `to3` | Double | x: 1 y: 1 | |
| enable3 / `enable3` | Boolean | On | Enables the point on the left. |
| to4 / `to4` | Double | x: 0 y: 1 | |
| enable4 / `enable4` | Boolean | On | Enables the point on the left. |
| Copy "From" / `copyFrom` | Button | | Copy the contents (including animation) of the "from" points to the "to" points. |
| Copy "From" (Single) / `copyFromSingle` | Button | | Copy the current values of the "from" points to the "to" points. |
| from1 / `from1` | Double | x: 0 y: 0 | |
| from2 / `from2` | Double | x: 1 y: 0 | |
| from3 / `from3` | Double | x: 1 y: 1 | |
| from4 / `from4` | Double | x: 0 y: 1 | |
| Set to input rod / `setToInputRod` | Button | | Copy the values from the source region of definition into the "from" points. |
| Copy "To" / `copyTo` | Button | | Copy the contents (including animation) of the "to" points to the "from" points. |
| Copy "To" (Single) / `copyToSingle` | Button | | Copy the current values of the "to" points to the "from" points. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amount / `transformAmount` | Double | 1 | Amount of transform to apply (excluding the extra matrix, which is always applied). 0 means the transform is identity, 1 means to apply the full transform. Intermediate transforms are computed by linear interpolation between the 'from' and the 'to' points. See the plugin description on how to use the amount parameter for a crash zoom effect. |
| Extra Matrix / `transform` | Double | x: 1 y: 0 z: 0 x: 0 y: 1 z: 0 x: 0 y: 0 z: 1 | |
| Overlay Points / `overlayPoints` | Choice | To | Whether to display the "from" or the "to" points in the overlay<br>**To (to)**: Display the "to" points.<br>**From (from)**: Display the "from" points. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Invert / `invert` | Boolean | Off | Invert the transform. |
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | On | Fill the area outside the source image with black |
| Motion Blur / `motionBlur` | Double | 0 | Quality of motion blur rendering. 0 disables motion blur, 1 is a good value. Increasing this slows down rendering. |
| Directional Blur Mode / `directionalBlur` | Boolean | Off | Motion blur is computed from the original image to the transformed image, each parameter being interpolated linearly. The motionBlur parameter must be set to a nonzero value, and the blackOutside parameter may have an important effect on the result. |
| Shutter / `shutter` | Double | 0.5 | Controls how long (in frames) the shutter should remain open. |

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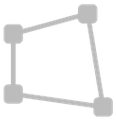
Table 159 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Shutter Offset / `shutterOffset` | Choice | Start | Controls when the shutter should be open/closed. Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0).<br>**Centered (centered)**: Centers the shutter around the frame (from t-shutter/2 to t+shutter/2)<br>**Start (start)**: Open the shutter at the frame (from t to t+shutter)<br>**End (end)**: Close the shutter at the frame (from t-shutter to t)<br>**Custom (custom)**: Open the shutter at t+shuttercustomoffset (from t+shuttercustomoffset to t+shuttercustomoffset+shutter) |
| Custom Offset / `shutterCustomOffset` | Double | 0 | When custom is selected, the shutter is open at current time plus this offset (in frames). Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0). |

### 2.11.4 CornerPinMasked node



*This documentation is for version 1.0 of CornerPinMasked (net.sf.openfx.CornerPinMaskedPlugin).*

#### Description

Allows an image to fit another in translation, rotation and scale.

The resulting transform is a translation if 1 point is enabled, a similarity if 2 are enabled, an affine transform if 3 are enabled, and a homography if they are all enabled.

An effect where an image transitions from a full-frame image to an image placed on a billboard or a screen, or a crash zoom effect, can be obtained by combining the Transform and CornerPin effects and using the Amount parameter on both effects.

Apply a CornerPin followed by a Transform effect (the order is important) and visualize the output superimposed on the target image. While leaving the value of the Amount parameter at 1, tune the Transform parameters (including Scale and Skew) so that the transformed image is as close as possible to the desired target location.

Then, adjust the 'to' points of the CornerPin effect (which should be affected by the Transform) so that the warped image perfectly matches the desired target location. Link the Amount parameter of the Transform and CornerPin effects.

Finally, by animating the Amount parameter of both effects from 0 to 1, the image goes progressively, and with minimal deformations, from full-frame to the target location, creating the desired effect (motion blur can be added on the Transform node, too).

Note that if only the CornerPin effect is used instead of combining CornerPin and Transform, the position of the CornerPin points is linearly interpolated between their 'from' position and their 'to' position, which may result in unrealistic image motion, where the image shrinks and expands, especially when the image rotates.

This plugin concatenates transforms.

See also: https://web.archive.org/web/20220627032200/http://www.opticalenquiry.com/nuke/index.php?title=CornerPin

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| to1 / `to1` | Double | x: 0 y: 0 | |
| enable1 / `enable1` | Boolean | On | Enables the point on the left. |
| to2 / `to2` | Double | x: 1 y: 0 | |
| enable2 / `enable2` | Boolean | On | Enables the point on the left. |
| to3 / `to3` | Double | x: 1 y: 1 | |
| enable3 / `enable3` | Boolean | On | Enables the point on the left. |
| to4 / `to4` | Double | x: 0 y: 1 | |
| enable4 / `enable4` | Boolean | On | Enables the point on the left. |
| Copy “From” / `copyFrom` | Button | | Copy the contents (including animation) of the “from” points to the “to” points. |
| Copy “From” (Single) / `copyFromSingle` | Button | | Copy the current values of the “from” points to the “to” points. |
| from1 / `from1` | Double | x: 0 y: 0 | |
| from2 / `from2` | Double | x: 1 y: 0 | |
| from3 / `from3` | Double | x: 1 y: 1 | |
| from4 / `from4` | Double | x: 0 y: 1 | |
| Set to input rod / `setToInputRod` | Button | | Copy the values from the source region of definition into the “from” points. |
| Copy “To” / `copyTo` | Button | | Copy the contents (including animation) of the “to” points to the “from” points. |
| Copy “To” (Single) / `copyToSingle` | Button | | Copy the current values of the “to” points to the “from” points. |
| Amount / `transformAmount` | Double | 1 | Amount of transform to apply (excluding the extra matrix, which is always applied). 0 means the transform is identity, 1 means to apply the full transform. Intermediate transforms are computed by linear interpolation between the ‘from’ and the ‘to’ points. See the plugin description on how to use the amount parameter for a crash zoom effect. |
| Extra Matrix / `transform` | Double | x: 1 y: 0 z: 0 x: 0 y: 1 z: 0 x: 0 y: 0 z: 1 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Overlay Points / `overlayPoints` | Choice | To | Whether to display the "from" or the "to" points in the overlay<br>**To (to)**: Display the "to" points.<br>**From (from)**: Display the "from" points. |
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Invert / `invert` | Boolean | Off | Invert the transform. |
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | On | Fill the area outside the source image with black |
| Motion Blur / `motionBlur` | Double | 0 | Quality of motion blur rendering. 0 disables motion blur, 1 is a good value. Increasing this slows down rendering. |
| Directional Blur Mode / `directionalBlur` | Boolean | Off | Motion blur is computed from the original image to the transformed image, each parameter being interpolated linearly. The motionBlur parameter must be set to a nonzero value, and the blackOutside parameter may have an important effect on the result. |
| Shutter / `shutter` | Double | 0.5 | Controls how long (in frames) the shutter should remain open. |
| Shutter Offset / `shutterOffset` | Choice | Start | Controls when the shutter should be open/closed. Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0).<br>**Centered (centered)**: Centers the shutter around the frame (from t-shutter/2 to t+shutter/2)<br>**Start (start)**: Open the shutter at the frame (from t to t+shutter)<br>**End (end)**: Close the shutter at the frame (from t-shutter to t)<br>**Custom (custom)**: Open the shutter at t+shuttercustomoffset (from t+shuttercustomoffset to t+shuttercustomoffset+shutter) |

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Table 160 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Custom Offset / `shutterCustomOffset` | Double | 0 | When custom is selected, the shutter is open at current time plus this offset (in frames). Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0). |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.11.5 Crop node

*This documentation is for version 1.0 of Crop (net.sf.openfx.CropPlugin).*

#### Description

Removes everything outside the defined rectangle and optionally adds black edges so everything outside is black.

If the 'Extent' parameter is set to 'Format', and 'Reformat' is checked, the output pixel aspect ratio is also set to this of the format.

This plugin does not concatenate transforms.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Size | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |

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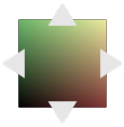
Table 161 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / NatronParamFormatChoice | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / bottomLeft | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / size | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Interactive Update / interactive | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / hidpi | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Frame Range / frameRange | Integer | min: 1 max: 1 | Time domain. |
| Softness / softness | Double | 0 | Size of the fade to black around edges to apply. |
| Reformat / reformat | Boolean | Off | Translates the bottom left corner of the crop rectangle to be in (0,0). This sets the output format only if 'Format' or 'Project' is selected as the output Extend. In order to actually change the format of this image stream for other Extent choices, feed the output of this node to a either a NoOp node which sets the proper format, or a Reformat node with the same extent and with 'Resize Type' set to None and 'Center' unchecked. The reason is that the Crop size may be animated, but the output format can not be animated. |
| Intersect / intersect | Boolean | Off | Intersects the crop rectangle with the input region of definition instead of extending it. |
| Black Outside / blackOutside | Boolean | Off | Add 1 black and transparent pixel to the region of definition so that all the area outside the crop rectangle is black. |

### 2.11.6 IDistort node



*This documentation is for version 2.0 of IDistort (net.sf.openfx.IDistort).*

#### Description

Distort an image, based on a displacement map.

The U and V channels give the offset in pixels in the destination image to the pixel where the color is taken. For example, if at pixel (45,12) the UV value is (-1.5,3.2), then the color at this pixel is taken from (43.5,15.2) in the source image. This plugin concatenates transforms upstream, so that if the nodes upstream output a 3x3 transform (e.g. Transform, CornerPin, Dot, NoOp, Switch), the original image is sampled only once.

This plugin concatenates transforms upstream.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| UV | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| U Channel / `channelU` | Choice | Color.R | Input U channel from UV.<br>**Color.R (uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input UV<br>**Color.G (uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input UV<br>**Color.B (uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input UV<br>**Color.A (uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input UV<br>**0**: 0 constant channel<br>**1**: 1 constant channel |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| V Channel / `channelV` | Choice | Color.G | Input V channel from UV.<br>**Color.R (uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input UV<br>**Color.G (uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input UV<br>**Color.B (uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input UV<br>**Color.A (uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input UV<br>**0**: 0 constant channel<br>**1**: 1 constant channel |
| Alpha Channel / `channelA` | Choice | Color.A | Input Alpha channel from UV. The Output alpha is multiplied by this value. If "Unpremult UV" is checked, the UV values are divided by alpha.<br>**Color.R (uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input UV<br>**Color.G (uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input UV<br>**Color.B (uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input UV<br>**Color.A (uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input UV<br>**0**: 0 constant channel<br>**1**: 1 constant channel |
| Unpremult UV / `unpremultUV` | Boolean | Off | Unpremult UV by Alpha from UV. Check if UV values look small for small values of Alpha (3D software sometimes write premultiplied UV values). |
| UV Offset / `uvOffset` | Double | U: 0 V: 0 | Offset to subtract from the U and V channel (useful if these were stored in a file that cannot handle negative numbers) |
| UV Scale / `uvScale` | Double | U: 1 V: 1 | Scale factor to apply to the U and V channel after subtracting the offset (useful if these were stored in a file that can only store integer values) |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | Off | Fill the area outside the source image with black |
| Use Source RoD / `useRoD` | Boolean | Off | Use the region of definition of the source as the source format. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.11.7 LensDistortion node

*This documentation is for version 4.0 of LensDistortion (net.sf.openfx.LensDistortion).*

#### Description

Add or remove lens distortion, or produce an STMap that can be used to apply that transform.

The region of definition of the transformed image is computed from the region of definition of the Source input. If the input is defined outside of the project format, this may result in a very large region. A Crop effect may be inserted before LensDistortion to avoid this. If the input region of definition is inside the format, the Crop To Format parameter may be used to avoid expanding it.

LensDistortion can directly apply distortion/undistortion, but if the distortion parameters are not animated, the most efficient way to use LensDistortion and avoid repeated distortion function calculations is the following:

- If the footage size is not the same as the project size, insert a FrameHold plugin between the footage to distort or undistort and the Source input of LensDistortion. This connection is only used to get the size of the input footage.
- Set Output Mode to "STMap" in LensDistortion.
- feed the LensDistortion output into the UV input of STMap, and feed the footage into the Source input of STMap.

This plugin concatenates transforms upstream.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `extent` | Choice | Default | Reference format for lens distortion.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset).<br>**Default (default)**: Use the default extent (e.g. the source clip extent, if connected). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Model / `model` | Choice | Nuke | Choice of the distortion model, i.e. the function that goes from distorted to undistorted image coordinates.<br>**Nuke (nuke)**: The model used in Nuke's LensDistortion plugin.<br>**PFBarrel (pfbarrel)**: The PFBarrel model used in PFTrack by PixelFarm.<br>**3DE Classic (3declassic)**: Degree-2 anamorphic and degree-4 radial mixed model, used in 3DEqualizer by Science-D-Visions. Works, but it is recommended to use 3DE4 Radial Standard Degree 4 or 3DE4 Anamorphic Standard Degree 4 instead.<br>**3DE4 Anamorphic Degree 6 (3deanamorphic6)**: Degree-6 anamorphic model, used in 3DEqualizer by Science-D-Visions.<br>**3DE4 Radial Fisheye Degree 8 (3defisheye8)**: Radial lens distortion model with equisolid-angle fisheye projection, used in 3DEqualizer by Science-D-Visions.<br>**3DE4 Radial Standard Degree 4 (3deradial4)**: Radial lens distortion model, a.k.a. radial decentered cylindric degree 4, which compensates for decentered lenses (and beam splitter artefacts in stereo rigs), used in 3DEqualizer by Science-D-Visions.<br>**3DE4 Anamorphic Standard Degree 4 (3deanamorphic4)**: Degree-4 anamorphic model with anamorphic lens rotation, which handles 'human-touched' mounted anamorphic lenses, used in 3DEqualizer by Science-D-Visions.<br>**PanoTools (panotools)**: The model used in PanoTools, PTGui, PTAssembler, Hugin. See http://wiki.panotools.org/Lens_correction_model |
| Direction / `direction` | Choice | Distort | Should the output correspond to applying or to removing distortion.<br>**Distort**: The output corresponds to applying distortion.<br>**Undistort**: The output corresponds to removing distortion. |
| Output Mode / `outputMode` | Choice | Image | Choice of the output, which may be either a distorted/undistorted image, or a distortion/undistortion STMap.<br>**Image**: The output is the distorted/undistorted Source.<br>**STMap**: The output is a distortion/undistortion STMap. It is recommended to insert a FrameHold node at the Source input so that the STMap is computed only once if the parameters are not animated. |
| K1 / `k1` | Double | 0 | Nuke: First radial distortion coefficient (coefficient for r^2). |
| K2 / `k2` | Double | 0 | Nuke: Second radial distortion coefficient (coefficient for r^4). |
| Center / `center` | Double | x: 0 y: 0 | Nuke: Offset of the distortion center from the image center. |
| Squeeze / `anamorphicSqueeze` | Double | 1 | Nuke: Anamorphic squeeze (only for anamorphic lens). |
| Asymmetric / `asymmetricDistortion` | Double | x: 0 y: 0 | Nuke: Asymmetric distortion (only for anamorphic lens). |
| File / `pfFile` | N/A | | The location of the PFBarrel .pfb file to use. Keyframes are set if present in the file. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| C3 / pfC3 | Double | 0 | PFBarrel: Low order radial distortion coefficient. |
| C5 / pfC5 | Double | 0 | PFBarrel: Low order radial distortion coefficient. |
| Center / pfP | Double | x: 0.5<br>y: 0.5 | PFBarrel: The distortion center of the lens (specified as a factor rather than a pixel value) |
| Squeeze / pfSqueeze | Double | 1 | PFBarrel: Anamorphic squeeze (only for anamorphic lens). |
| fov left [unit coord] / tde4_field_of_view_xa_unit | Double | 0 | 3DE4: Field of view. |
| fov bottom [unit coord] / tde4_field_of_view_ya_unit | Double | 0 | 3DE4: Field of view. |
| fov right [unit coord] / tde4_field_of_view_xb_unit | Double | 1 | 3DE4: Field of view. |
| fov top [unit coord] / tde4_field_of_view_yb_unit | Double | 1 | 3DE4: Field of view. |
| tde4 focal length [cm] / tde4_focal_length_cm | Double | 1 | 3DE4: Focal length. |
| tde4 focus distance [cm] / tde4_custom_focus_distance_cm | Double | 100 | 3DE4: Focus distance. |
| tde4 filmback width [cm] / tde4_filmback_width_cm | Double | 0.8 | 3DE4: Filmback width. |
| tde4 filmback height [cm] / tde4_filmback_height_cm | Double | 0.6 | 3DE4: Filmback height. |
| tde4 lens center offset x [cm] / tde4_lens_center_offset_x_cm | Double | 0 | 3DE4: Lens center horizontal offset. |
| tde4 lens center offset y [cm] / tde4_lens_center_offset_y_cm | Double | 0 | 3DE4: Lens center vertical offset. |
| tde4 pixel aspect / tde4_pixel_aspect | Double | 1 | 3DE4: Pixel aspect ratio. |
| Distortion / tde4_Distortion | Double | 0 | 3DE Classic: Distortion. |
| Anamorphic Squeeze / tde4_Anamorphic_Squeeze | Double | 1 | 3DE Classic: Anamorphic Squeeze. |
| Curvature X / tde4_Curvature_X | Double | 0 | 3DE Classic: Curvature X. |
| Curvature Y / tde4_Curvature_Y | Double | 0 | 3DE Classic: Curvature Y. |
| Quartic Distortion / tde4_Quartic_Distortion | Double | 0 | 3DE Classic: Quartic Distortion. |
| Distortion - Degree 2 / tde4_Distortion_Degree_2 | Double | 0 | 3DE Standard and Fisheye: Distortion. |
| U - Degree 2 / tde4_U_Degree_2 | Double | 0 | 3DE Standard: U - Degree 2. |
| V - Degree 2 / tde4_V_Degree_2 | Double | 0 | 3DE Standard: V - Degree 2. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Quartic Distortion - Degree 4 / tde4_Quartic_Distortion_Degree_4 | Double | 0 | 3DE Standard and Fisheye: Quartic Distortion - Degree 4. |
| U - Degree 4 / tde4_U_Degree_4 | Double | 0 | 3DE Standard: U - Degree 4. |
| V - Degree 4 / tde4_V_Degree_4 | Double | 0 | 3DE Standard: V - Degree 4. |
| Phi - Cylindric Direction / tde4_Phi_Cylindric_Direction | Double | 0 | 3DE Standard: Phi - Cylindric Direction. |
| B - Cylindric Bending / tde4_B_Cylindric_Bending | Double | 0 | 3DE Standard: B - Cylindric Bending. |
| Cx02 - Degree 2 / tde4_Cx02_Degree_2 | Double | 0 | 3DE Anamorphic 4 and 6: Cx02 - Degree 2. |
| Cy02 - Degree 2 / tde4_Cy02_Degree_2 | Double | 0 | 3DE Anamorphic 4 and 6: Cy02 - Degree 2. |
| Cx22 - Degree 2 / tde4_Cx22_Degree_2 | Double | 0 | 3DE Anamorphic 4 and 6: Cx22 - Degree 2. |
| Cy22 - Degree 2 / tde4_Cy22_Degree_2 | Double | 0 | 3DE Anamorphic 4 and 6: Cy22 - Degree 2. |
| Cx04 - Degree 4 / tde4_Cx04_Degree_4 | Double | 0 | 3DE Anamorphic 4 and 6: Cx04 - Degree 4. |
| Cy04 - Degree 4 / tde4_Cy04_Degree_4 | Double | 0 | 3DE Anamorphic 4 and 6: Cy04 - Degree 4. |
| Cx24 - Degree 4 / tde4_Cx24_Degree_4 | Double | 0 | 3DE Anamorphic 4 and 6: Cx24 - Degree 4. |
| Cy24 - Degree 4 / tde4_Cy24_Degree_4 | Double | 0 | 3DE Anamorphic 4 and 6: Cy24 - Degree 4. |
| Cx44 - Degree 4 / tde4_Cx44_Degree_4 | Double | 0 | 3DE Anamorphic 4 and 6: Cx44 - Degree 4. |
| Cy44 - Degree 4 / tde4_Cy44_Degree_4 | Double | 0 | 3DE Anamorphic 4 and 6: Cy44 - Degree 4. |
| Cx06 - Degree 6 / tde4_Cx06_Degree_6 | Double | 0 | 3DE Anamorphic 6: Cx06 - Degree 6. |
| Cy06 - Degree 6 / tde4_Cy06_Degree_6 | Double | 0 | 3DE Anamorphic 6: Cy06 - Degree 6. |
| Cx26 - Degree 6 / tde4_Cx26_Degree_6 | Double | 0 | 3DE Anamorphic 6: Cx26 - Degree 6. |
| Cy26 - Degree 6 / tde4_Cy26_Degree_6 | Double | 0 | 3DE Anamorphic 6: Cy26 - Degree 6. |
| Cx46 - Degree 6 / tde4_Cx46_Degree_6 | Double | 0 | 3DE Anamorphic 6: Cx46 - Degree 6. |
| Cy46 - Degree 6 / tde4_Cy46_Degree_6 | Double | 0 | 3DE Anamorphic 6: Cy46 - Degree 6. |
| Cx66 - Degree 6 / tde4_Cx66_Degree_6 | Double | 0 | 3DE Anamorphic 6: Cx66 - Degree 6. |
| Cy66 - Degree 6 / tde4_Cy66_Degree_6 | Double | 0 | 3DE Anamorphic 6: Cy66 - Degree 6. |
| Lens Rotation 4 / tde4_Lens_Rotation | Double | 0 | 3DE Anamorphic 4: Lens Rotation 4. |
| Squeeze-X / tde4_Squeeze_X | Double | 1 | 3DE Anamorphic 4: Squeeze-X. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Squeeze-Y / `tde4_Squeeze_Y` | Double | 1 | 3DE Anamorphic 4: Squeeze-Y. |
| Degree 6 / `tde4_Degree_6` | Double | 0 | 3DE Fisheye: Degree 6. |
| Degree 8 / `tde4_Degree_8` | Double | 0 | 3DE Fisheye: Degree 8. |
| a / `pt_a` | Double | 0 | PanoTools: Radial lens distortion 3rd degree coefficient a. |
| b / `pt_b` | Double | 0 | PanoTools: Radial lens distortion 2nd degree coefficient b. |
| c / `pt_c` | Double | 0 | PanoTools: Radial lens distortion 1st degree coefficient c. |
| d / `pt_d` | Double | 0 | PanoTools: Horizontal lens shift (in pixels). |
| e / `pt_e` | Double | 0 | PanoTools: Vertical lens shift (in pixels). |
| g / `pt_g` | Double | 0 | PanoTools: Vertical lens shear (in pixels). Use to remove slight misalignment of the line scanner relative to the film transport. |
| t / `pt_t` | Double | 0 | PanoTools: Horizontal lens shear (in pixels). |
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | Off | Fill the area outside the source image with black |
| Crop To Format / `cropToFormat` | Boolean | On | If the source is inside the format and the effect extends it outside of the format, crop it to avoid unnecessary calculations. To avoid unwanted crops, only the borders that were inside of the format in the source clip will be cropped. |
| Use Source RoD / `useRoD` | Boolean | Off | Use the region of definition of the source as the source format. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

### 2.11.8 Mirror node



*This documentation is for version 1.0 of Mirror (net.sf.openfx.Mirror).*

#### Description

Flip (vertical mirror) or flop (horizontal mirror) an image. Interlaced video can not be flipped.

This plugin does not concatenate transforms.

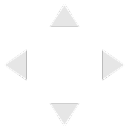
#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Vertical (flip) / `flip` | Boolean | Off | Upside-down (swap top and bottom). Only possible if input is not interlaced. |
| Horizontal (flop) / `flop` | Boolean | Off | Mirror image (swap left and right) |

### 2.11.9 Position node



*This documentation is for version 1.0 of Position (net.sf.openfx.Position).*

### Description

Translate an image by an integer number of pixels.

This plugin does not concatenate transforms.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Translate / `translate` | Double | x: 0 y: 0 | New position of the bottom-left pixel. Rounded to the closest pixel. |
| Interactive / `interactive` | Boolean | Off | When checked the image will be rendered whenever moving the overlay interact instead of when releasing the mouse button. |

## 2.11.10 Reformat node

*This documentation is for version 2.0 of Reformat (net.sf.openfx.Reformat).*

### Description

Convert the image to another format or size.

An image transform is computed that goes from the input format, regardless of the region of definition (RoD), to the selected format. The Resize Type parameter adjust the way the transform is computed.

The output format is set by this effect.

In order to set the output format without transforming the image content, use the NoOp effect.

This plugin concatenates transforms.

See also: https://web.archive.org/web/20220627014216/http://www.opticalenquiry.com/nuke/index.php?title=Reformat

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Use Source RoD / `useRoD` | Boolean | Off | Use the region of definition of the source as the source format. |
| Type / `reformatType` | Choice | To Project Format | Selects how the output format is computed.<br>**To Format (format)**: Resize to predefined format.<br>**To Box (box)**: Resize to fit into a box of a given width and height.<br>**Scale (scale)**: Apply scale (rounding to integer pixel sizes).<br>**To Project Format (project)**: Resize to project format. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Size / `boxSize` | Integer | x: 200 y: 200 | The output dimensions of the image in pixels. |
| Force This Shape / `boxFixed` | Boolean | Off | If checked, the output image is cropped to this size. Else, image is resized according to the resize type but the whole image is kept. |
| Pixel Aspect Ratio / `boxPar` | Double | 1 | Output pixel aspect ratio. |
| Scale / `reformatScale` | Double | x: 1 y: 1 | The scale factor to apply to the image. The scale factor is rounded slightly, so that the output image is an integer number of pixels in the direction chosen under resize type. |
| Uniform / `reformatScaleUniform` | Boolean | Off | Use the X scale for both directions |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Type / `resize` | Choice | Width | Format: Converts between formats, the image is resized to fit in the target format. Size: Scales to fit into a box of a given width and height. Scale: Scales the image.<br>**None (none)**: Do not resize the original.<br>**Width (width)**: Scale the original so that its width fits the output width, while preserving the aspect ratio.<br>**Height (height)**: Scale the original so that its height fits the output height, while preserving the aspect ratio.<br>**Fit (fit)**: Scale the original so that its smallest size fits the output width or height, while preserving the aspect ratio.<br>**Fill (fill)**: Scale the original so that its longest size fits the output width or height, while preserving the aspect ratio.<br>**Distort (distort)**: Scale the original so that both sides fit the output dimensions. This does not preserve the aspect ratio. |
| Center / `reformatCentered` | Boolean | On | Translate the center of the image to the center of the output. Otherwise, the lower left corner is left untouched. |
| Flip / `flip` | Boolean | Off | Mirror the image vertically. |
| Flop / `flop` | Boolean | Off | Mirror the image horizontally. |
| Turn / `turn` | Boolean | Off | Rotate the image by 90 degrees counter-clockwise. |
| Preserve BBox / `preserveBB` | Boolean | Off | If checked, preserve the whole image bounding box and concatenate transforms downstream.<br>Normally, all pixels outside of the outside format are clipped off. If this is checked, the whole image RoD is kept.<br>By default, transforms are only concatenated upstream, i.e. the image is rendered by this effect by concatenating upstream transforms (e.g. CornerPin, Transform...), and the original image is resampled only once. If checked, and there are concatenating transform effects downstream, the image is rendered by the last consecutive concatenating effect. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | Off | Fill the area outside the source image with black |

### 2.11.11 Resize node

*This documentation is for version 2.0 of Resize (fr.inria.openfx.OIIOResize).*

#### Description

Resize input stream, using OpenImageIO.

Note that only full images can be rendered, so it may be slower for interactive editing than the Reformat plugin.

However, the rendering algorithms are different between Reformat and Resize: Resize applies 1-dimensional filters in the horizontal and vertical directins, whereas Reformat resamples the image, so in some cases this plugin may give more visually pleasant results than Reformat.

This plugin does not concatenate transforms (as opposed to Reformat).

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `type` | Choice | Format | Format: Converts between formats, the image is resized to fit in the target format. Size: Scales to fit into a box of a given width and height. Scale: Scales the image.<br>**Format (format)**<br>**Size (size)**<br>**Scale (scale)** |
| Format / `format` | Choice | PC_Video 640x480 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x1720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super35(full-ap) 1024x778 (1K_Super35(full-ap))**<br>**1K_Cinemascope 914x778 2 (1K_Cinemascope)**<br>**2K_Super35(full-ap) 2048x1556 (2K_Super35(full-ap))**<br>**2K_Cinemascope 1828x1556 2 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super35(full-ap) 4096x3112 (4K_Super35(full-ap))**<br>**4K_Cinemascope 3656x3112 2 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Size / `size` | Integer | x: 200 y: 200 | The output size |
| Preserve PAR / `preservePAR` | Boolean | On | Preserve Pixel Aspect Ratio (PAR). When checked, one direction will be clipped. |
| Scale / `scale` | Double | x: 1 y: 1 | The scale factor to apply to the image. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Default | The filter used to resize. Lanczos3 is great for downscaling and blackman-harris is great for upscaling.<br>**Impulse (impulse)**: No interpolation.<br>**box**<br>**triangle**<br>**gaussian**<br>**sharp-gaussian**<br>**catmull-rom**<br>**blackman-harris**<br>**sinc**<br>**lanczos3**<br>**radial-lanczos3**<br>**nuke-lanczos6**<br>**mitchell**<br>**bspline**<br>**disk**<br>**cubic**<br>**keys**<br>**simon**<br>**rifman**<br>**Default (default)**: blackman-harris when increasing resolution, lanczos3 when decreasing resolution. |

### 2.11.12 STMap node

*This documentation is for version 2.0 of STMap (net.sf.openfx.STMap).*

#### Description

Move pixels around an image, based on a UVmap.

The U and V channels give, for each pixel in the destination image, the normalized position of the pixel where the color is taken. (0,0) is the bottom left corner of the input image, while (1,1) is the top right corner. This plugin concatenates transforms upstream, so that if the nodes upstream output a 3x3 transform (e.g. Transform, CornerPin, Dot, NoOp, Switch), the original image is sampled only once.

This plugin concatenates transforms upstream.

### Inputs

| Input | Description | Optional |
|---|---|---|
| UV | | No |
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| U Channel / `channelU` | Choice | Color.R | Input U channel from UV.<br>**Color.R (uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input UV<br>**Color.G (uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input UV<br>**Color.B (uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input UV<br>**Color.A (uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input UV<br>**0**: 0 constant channel<br>**1**: 1 constant channel |
| V Channel / `channelV` | Choice | Color.G | Input V channel from UV.<br>**Color.R (uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input UV<br>**Color.G (uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input UV<br>**Color.B (uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input UV<br>**Color.A (uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input UV<br>**0**: 0 constant channel<br>**1**: 1 constant channel |
| Alpha Channel / `channelA` | Choice | Color.A | Input Alpha channel from UV. The Output alpha is multiplied by this value. If "Unpremult UV" is checked, the UV values are divided by alpha.<br>**Color.R (uk.co.thefoundry.OfxImagePlaneColour.R)**: R channel from input UV<br>**Color.G (uk.co.thefoundry.OfxImagePlaneColour.G)**: G channel from input UV<br>**Color.B (uk.co.thefoundry.OfxImagePlaneColour.B)**: B channel from input UV<br>**Color.A (uk.co.thefoundry.OfxImagePlaneColour.A)**: A channel from input UV<br>**0**: 0 constant channel<br>**1**: 1 constant channel |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Unpremult UV / `unpremultUV` | Boolean | Off | Unpremult UV by Alpha from UV. Check if UV values look small for small values of Alpha (3D software sometimes write premultiplied UV values). |
| UV Offset / `uvOffset` | Double | U: 0 V: 0 | Offset to subtract from the U and V channel (useful if these were stored in a file that cannot handle negative numbers) |
| UV Scale / `uvScale` | Double | U: 1 V: 1 | Scale factor to apply to the U and V channel after subtracting the offset (useful if these were stored in a file that can only store integer values) |
| U Wrap Mode / `wrapU` | Choice | Clamp | Wrap mode for U coordinate.<br>**Clamp (clamp)**: Texture edges are black (if blackOutside is checked) or stretched indefinitely.<br>**Repeat (repeat)**: Texture is repeated.<br>**Mirror (mirror)**: Texture is mirrored alternatively. |
| V Wrap Mode / `wrapV` | Choice | Clamp | Wrap mode for V coordinate.<br>**Clamp (clamp)**: Texture edges are black (if blackOutside is checked) or stretched indefinitely.<br>**Repeat (repeat)**: Texture is repeated.<br>**Mirror (mirror)**: Texture is mirrored alternatively. |
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | On | Fill the area outside the source image with black |
| Use Source RoD / `useRoD` | Boolean | Off | Use the region of definition of the source as the source format. |
| (Un)premult / `premult` | Boolean | Off | Divide the image by the alpha channel before processing, and re-multiply it afterwards. Use if the input images are premultiplied. |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.11.13 SpriteSheet node

*This documentation is for version 1.0 of SpriteSheet (net.sf.openfx.SpriteSheet).*

### Description

Read individual frames from a sprite sheet. A sprite sheet is a series of images (usually animation frames) combined into a larger image (or images). For example, an animation consisting of eight 100x100 images could be combined into a single 400x200 sprite sheet (4 frames across by 2 high). The sprite with index 0 is at the top-left of the source image, and sprites are ordered left-to-right and top-to-bottom. The output is an animated sprite that repeats the sprites given in the sprite range. The ContactSheet effect can be used to make a spritesheet from a series of images or a video.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Sprite Size / `spriteSize` | Integer | x: 64 y: 64 | Size in pixels of an individual sprite. |
| Sprite Range / `spriteRange` | Integer | first: 0 last: 0 | Index of the first and last sprite in the animation. The sprite index starts at zero. |
| Frame Offset / `frameOffset` | Integer | 1 | Output frame number for the first sprite. |

## 2.11.14 Tracker node

*This documentation is for version 1.0 of Tracker (fr.inria.built-in.Tracker).*

### Description

Track one or more 2D point(s) using LibMV from the Blender open-source software.

### Goal

Track one or more 2D point and use them to either make another object/image match-move their motion or to stabilize the input image.

### Tracking

- Connect a Tracker node to the image containing the item you need to track
- Place tracking markers with CTRL+ALT+Click on the Viewer or by clicking the **+** button below the track table in the settings panel
- Setup the motion model to match the motion type of the item you need to track. By default the tracker will only assume the item is underoing a translation. Other motion models can be used for complex tracks but may be slower.
- Select in the settings panel or on the Viewer the markers you want to track and then start tracking with the player buttons on the top of the Viewer.
- If a track is getting lost or fails at some point, you may refine it by moving the marker at its correct position, this will force a new keyframe on the pattern which will be visible in the Viewer and on the timeline.

### Using the tracks data

You can either use the Tracker node itself to use the track data or you may export it to another node.

### Using the Transform within the Tracker node

Go to the Transform tab in the settings panel, and set the Transform Type to the operation you want to achieve. During tracking, the Transform Type should always been set to None if you want to correctly see the tracks on the Viewer.

You will notice that the transform parameters will be set automatically when the tracking is finished. Depending on the Transform Type, the values will be computed either to match-move the motion of the tracked points or to stabilize the image.

### Exporting the tracking data

You may export the tracking data either to a CornerPin node or to a Transform node. The CornerPin node performs a warp that may be more stable than a Transform node when using 4 or more tracks: it retains more information than the Transform node.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Motion Type / `motionType` | Choice | None | The type of motion in output of this node.<br>**None**: No transformation applied in output to the image: this node is a pass-through. Set it to this mode when tracking to correctly see the input image on the viewer<br>**Stabilize**: Transforms the image so that the tracked points do not move<br>**Match-Move**: Transforms a different image so that it moves to match the tracked points<br>**Remove Jitter**: Transforms the image so that the tracked points move smoothly with high frequencies removed<br>**Add Jitter**: Transforms the image by the high frequencies of the animation of the tracks to increase the shake or apply it on another image |
| Transform Type / `transformType` | Choice | Corner-Pin | The type of transform used to produce the results.<br>**Transform**: The tracks motion will be used to compute the translation, scale and rotation parameter of a Transform node. At least 1 track is required to compute the translation and 2 for scale and rotation. The more tracks you use, the more stable and precise the resulting transform will be.<br>**CornerPin**: The tracks motion will be used to compute a CornerPin. A CornerPin is useful if you are tracking an image portion that has a perspective distortion. At least 1 track is required to compute the homography transforming the "From" points to the "To" points, and 4 required to track a perspective transformation.The more points you add, the more stable and precise the resulting CornerPin will be. |
| Reference Frame / `referenceFrame` | Inte-ger | 1 | When exporting tracks to a CornerPin or Transform, this will be the frame number at which the transform will be an identity. |
| Set to Current Frame / `setReferenceButton` | But-ton | | Set the reference frame to the timeline's current frame |
| Jitter Period / `jitterPeriod` | Inte-ger | 10 | Number of frames to average together to remove high frequencies for the add/remove jitter transform type |
| Smooth / `smooth` | Inte-ger | t: 0 r: 0 s: 0 | Smooth the translation/rotation/scale by averaging this number of frames together |
| Smooth / `smoothCornerPin` | Inte-ger | 0 | Smooth the CornerPin by averaging this number of frames together |
| Compute Transform Automatically / `autoComputeransform` | Boolean | On | When checked, whenever changing a parameter controlling the Transform Generation (such as Motion Type, Transform Type, Reference Frame, etc…) or changing the Enabled parameter of a track, the transform parameters will be re-computed automatically. When unchecked, you must press the Compute button to compute it. |
| Compute / `computeTransform` | But-ton | | Click to compute the parameters of the Transform Controls or CornerPin Controls (depending on the Transform Type) from the data acquired on the tracks during the tracking. This should be done after the tracking is finished and when you feel the results are satisfying. For each frame, the resulting parameter is computed from the tracks that are enabled at this frame and that have a keyframe on the center point (e.g: are valid). |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Robust Model / `robustModel` | Boolean | On | When checked, the solver will assume that the model generated (i.e: the Transform or the CornerPin) is possible given the motion of the video and will eliminate points that do not match the model to compute the resulting parameters. When unchecked, the solver assumes that all points that are enabled and have a keyframe are valid and fit the model: this may in some situations work better if you are trying to find a model that is just not correct for the given motion of the video. |
| Fitting Error (px) / `fittingError` | Double | 0 | This parameter indicates the error for each frame of the fitting of the model (i.e: Transform / CornerPin) to the tracks data. This value is in pixels and represents the rooted weighted sum of squared errors for each track. The error is essentially the difference between the point position computed from the original point onto which is applied the fitted model and the original tracked point. |
| Warn If Error Is Above / `fittingErrorWarnAbove` | Double | 1 | A warning will appear if the model fitting error reaches this value (or higher). The warning indicates that the calculated model is probably poorly suited for the stabilization/match-move you want to achieve and you should either refine your tracking data or pick another model |
| Disable Transform / `disableProcess` | Boolean | Off | When checked, the CornerPin/Transform applied by the parameters is disabled temporarily. This is useful if you are using a CornerPin and you need to edit the From or To points. For example, in match-move mode to replace a portion of the image by another one. To achieve such effect, you would need to place the From points of the CornerPin controls to the desired 4 corners in the image. Similarly, you may want to stabilize the image onto a moving vehicle, in which case you would want to set the CornerPin points to enclose the vehicle. |
| Set to Input Rod / `setToInputRod` | Button | | Set the 4 from points to the image rectangle in input of the tracker node |
| Export / `export` | Button | | Creates a node referencing the tracked data. The node type depends on the node selected by the Transform Type parameter. The type of transformation applied by the created node depends on the Motion Type parameter. To activate this button you must select set the Motion Type to something other than None |
| Mag. Window Size / `magWindowSize` | Integer | 200 | The size of the selected track magnification winow in pixels |

### 2.11.15 Transform node

*This documentation is for version 1.0 of Transform (net.sf.openfx.TransformPlugin).*

### Description

Translate / Rotate / Scale a 2D image.

This plugin concatenates transforms.

See also https://web.archive.org/web/20220627030948/http://www.opticalenquiry.com/nuke/index.php?title=Transform

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Translate / `translate` | Double | x: 0 y: 0 | Translation along the x and y axes in pixels. Can also be adjusted by clicking and dragging the center handle in the Viewer. |
| Rotate / `rotate` | Double | 0 | Rotation angle in degrees around the Center. Can also be adjusted by clicking and dragging the rotation bar in the Viewer. |
| Scale / `scale` | Double | x: 1 y: 1 | Scale factor along the x and y axes. Can also be adjusted by clicking and dragging the outer circle or the diameter handles in the Viewer. |
| Uniform / `uniform` | Boolean | Off | Use the X scale for both directions |
| Skew X / `skewX` | Double | 0 | Skew along the x axis. Can also be adjusted by clicking and dragging the skew bar in the Viewer. |
| Skew Y / `skewY` | Double | 0 | Skew along the y axis. |
| Skew Order / `skewOrder` | Choice | XY | The order in which skew transforms are applied: X then Y, or Y then X.<br>**XY**<br>**YX** |
| Amount / `transformAmount` | Double | 1 | Amount of transform to apply. 0 means the transform is identity, 1 means to apply the full transform. |
| Center / `center` | Double | x: 0.5 y: 0.5 | Center of rotation and scale. |
| Reset Center / `resetCenter` | Button | | Reset the position of the center to the center of the input region of definition |
| Interactive Update / `interactive` | Boolean | On | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Invert / `invert` | Boolean | Off | Invert the transform. |

continues on next page

Table 171 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | On | Fill the area outside the source image with black |
| Motion Blur / `motionBlur` | Double | 0 | Quality of motion blur rendering. 0 disables motion blur, 1 is a good value. Increasing this slows down rendering. |
| Directional Blur Mode / `directionalBlur` | Boolean | Off | Motion blur is computed from the original image to the transformed image, each parameter being interpolated linearly. The motionBlur parameter must be set to a nonzero value, and the blackOutside parameter may have an important effect on the result. |
| Shutter / `shutter` | Double | 0.5 | Controls how long (in frames) the shutter should remain open. |
| Shutter Offset / `shutterOffset` | Choice | Start | Controls when the shutter should be open/closed. Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0).<br>**Centered (centered)**: Centers the shutter around the frame (from t-shutter/2 to t+shutter/2)<br>**Start (start)**: Open the shutter at the frame (from t to t+shutter)<br>**End (end)**: Close the shutter at the frame (from t-shutter to t)<br>**Custom (custom)**: Open the shutter at t+shuttercustomoffset (from t+shuttercustomoffset to t+shuttercustomoffset+shutter) |
| Custom Offset / `shutterCustomOffset` | Double | 0 | When custom is selected, the shutter is open at current time plus this offset (in frames). Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0). |

### 2.11.16 TransformMasked node

*This documentation is for version 1.0 of TransformMasked (net.sf.openfx.TransformMaskedPlugin).*

#### Description

Translate / Rotate / Scale a 2D image, with optional masking.

This plugin concatenates transforms upstream.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Translate / `translate` | Double | x: 0 y: 0 | Translation along the x and y axes in pixels. Can also be adjusted by clicking and dragging the center handle in the Viewer. |
| Rotate / `rotate` | Double | 0 | Rotation angle in degrees around the Center. Can also be adjusted by clicking and dragging the rotation bar in the Viewer. |
| Scale / `scale` | Double | x: 1 y: 1 | Scale factor along the x and y axes. Can also be adjusted by clicking and dragging the outer circle or the diameter handles in the Viewer. |
| Uniform / `uniform` | Boolean | Off | Use the X scale for both directions |
| Skew X / `skewX` | Double | 0 | Skew along the x axis. Can also be adjusted by clicking and dragging the skew bar in the Viewer. |
| Skew Y / `skewY` | Double | 0 | Skew along the y axis. |
| Skew Order / `skewOrder` | Choice | XY | The order in which skew transforms are applied: X then Y, or Y then X.<br>**XY**<br>**YX** |
| Amount / `transformAmount` | Double | 1 | Amount of transform to apply. 0 means the transform is identity, 1 means to apply the full transform. |
| Center / `center` | Double | x: 0.5 y: 0.5 | Center of rotation and scale. |
| Reset Center / `resetCenter` | Button | | Reset the position of the center to the center of the input region of definition |
| Interactive Update / `interactive` | Boolean | On | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Invert / `invert` | Boolean | Off | Invert the transform. |

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Table 172 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filter / `filter` | Choice | Cubic | Filtering algorithm - some filters may produce values outside of the initial range (*) or modify the values even if there is no movement (+).<br>**Impulse (impulse)**: (nearest neighbor / box) Use original values.<br>**Box (box)**: Integrate the source image over the bounding box of the back-transformed pixel.<br>**Bilinear (bilinear)**: (tent / triangle) Bilinear interpolation between original values.<br>**Cubic (cubic)**: (cubic spline) Some smoothing.<br>**Keys (keys)**: (Catmull-Rom / Hermite spline) Some smoothing, plus minor sharpening (*).<br>**Simon (simon)**: Some smoothing, plus medium sharpening (*).<br>**Rifman (rifman)**: Some smoothing, plus significant sharpening (*).<br>**Mitchell (mitchell)**: Some smoothing, plus blurring to hide pixelation (*)(+).<br>**Parzen (parzen)**: (cubic B-spline) Greatest smoothing of all filters (+).<br>**Notch (notch)**: Flat smoothing (which tends to hide moire' patterns) (+). |
| Clamp / `clamp` | Boolean | Off | Clamp filter output within the original range - useful to avoid negative values in mattes |
| Black outside / `black_outside` | Boolean | On | Fill the area outside the source image with black |
| Motion Blur / `motionBlur` | Double | 0 | Quality of motion blur rendering. 0 disables motion blur, 1 is a good value. Increasing this slows down rendering. |
| Directional Blur Mode / `directionalBlur` | Boolean | Off | Motion blur is computed from the original image to the transformed image, each parameter being interpolated linearly. The motionBlur parameter must be set to a nonzero value, and the blackOutside parameter may have an important effect on the result. |
| Shutter / `shutter` | Double | 0.5 | Controls how long (in frames) the shutter should remain open. |
| Shutter Offset / `shutterOffset` | Choice | Start | Controls when the shutter should be open/closed. Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0).<br>**Centered (centered)**: Centers the shutter around the frame (from t-shutter/2 to t+shutter/2)<br>**Start (start)**: Open the shutter at the frame (from t to t+shutter)<br>**End (end)**: Close the shutter at the frame (from t-shutter to t)<br>**Custom (custom)**: Open the shutter at t+shuttercustomoffset (from t+shuttercustomoffset to t+shuttercustomoffset+shutter) |
| Custom Offset / `shutterCustomOffset` | Double | 0 | When custom is selected, the shutter is open at current time plus this offset (in frames). Ignored if there is no motion blur (i.e. shutter=0 or motionBlur=0). |
| Invert Mask / `maskInvert` | Boolean | Off | When checked, the effect is fully applied where the mask is 0. |
| Mix / `mix` | Double | 1 | Mix factor between the original and the transformed image. |

## 2.12 Views nodes

The following sections contain documentation about every node in the Views group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.12.1 Anaglyph node

*This documentation is for version 1.0 of Anaglyph (net.sf.openfx.anaglyphPlugin).*

#### Description

Make an anaglyph image out of the two views of the input.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color Amount / `amtcolor` | Double | 0 | Amount of colour in the anaglyph: 0 = grayscale anaglyph, 1 = full-color anaglyph. Fusion is more difficult with full-color anaglyphs. |
| (right=red) / `swap` | Boolean | Off | Swap left and right views |
| Horizontal Offset / `offset` | Integer | 0 | Horizontal offset. The red view is shifted to the left by half this amount, and the cyan view is shifted to the right by half this amount (in pixels). |

### 2.12.2 JoinViews node

*This documentation is for version 1.0 of JoinViews (fr.inria.built-in.JoinViews).*

#### Description

Take in input separate views to make a multiple view stream output. The first view from each input is copied to one of the view of the output.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Main | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| | | | |

### 2.12.3 MixViews node

*This documentation is for version 1.0 of MixViews (net.sf.openfx.mixViewsPlugin).*

#### Description

Mix two views together.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mix / `mix` | Double | 0 | Mix factor for the right view |

### 2.12.4 OneView node

*This documentation is for version 1.0 of OneView (fr.inria.built-in.OneView).*

### Description

Takes one view from the input.

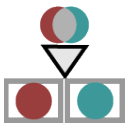
### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| View / `view` | Choice | | View to take from the input |

## 2.12.5 SideBySide node



*This documentation is for version 1.0 of SideBySide (net.sf.openfx.sideBySidePlugin).*

### Description

Put the left and right view of the input next to each other.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Vertical / `vertical` | Boolean | Off | Stack views vertically instead of horizontally |
| View 1 / `view1` | Choice | Left | First view<br>**Left (left)**: Left view.<br>**Right (right)**: Right view. |
| View 2 / `view2` | Choice | Right | Second view<br>**Left (left)**: Left view.<br>**Right (right)**: Right view. |

## 2.13 Other nodes

The following sections contain documentation about every node in the Other group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.13.1 AudioCurve node

*This documentation is for version 1.0 of AudioCurve (net.fxarena.openfx.AudioCurve).*

#### Description

Generate curve data from (stereo) audio files.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Audio File / `audio` | N/A | | Audio file used to generate curve data. |
| Frame Rate / `fps` | Double | 24 | The frame rate of the project. |
| Frame Range / `frames` | Integer | x: 1 y: 250 | The desired frame range. |
| Curve start at 0 / `zero` | Boolean | Off | Curve start at 0, no negative values. |
| Curve Height / `factor` | Double | x: 100 y: 100 | Adjust the curve height. |
| Curve Data / `curve` | Double | x: 0 y: 0 | Generated curve data. |
| Generate / `generate` | Button | | Generate curve data. |

### 2.13.2 Backdrop node

*This documentation is for version 1.0 of Backdrop (fr.inria.built-in.BackDrop).*

### Description

The Backdrop node is useful to group nodes and identify them in the node graph.

You can also move all the nodes inside the backdrop.

### Inputs

| Input | Description | Optional |
|---|---|---|
| | | |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Label / `Label` | String | | Text to display on the backdrop. |

## 2.13.3 DiskCache node

*This documentation is for version 1.0 of DiskCache (fr.inria.built-in.DiskCache).*

### Description

This node caches all images of the connected input node onto the disk with full 32bit floating point raw data. When an image is found in the cache, Natron will then not request the input branch to render out that image. The DiskCache node only caches full images and does not split up the images in chunks. The DiskCache node is useful if working with a large and complex node tree: this allows one to break the tree into smaller branches and cache any branch that you're no longer working on. The cached images are saved by default in the same directory that is used for the viewer cache but you can set its location and size in the preferences. A solid state drive disk is recommended for efficiency of this node. By default all images that pass into the node are cached but they depend on the zoom-level of the viewer. For convenience you can cache a specific frame range at scale 100% much like a writer node would do.

WARNING: The DiskCache node must be part of the tree when you want to read cached data from it.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame range / `frameRange` | Choice | Input frame range | **Input frame range**<br>**Project frame range**<br>**Manual** |
| Pre-cache / `preRender` | Button | | Cache the frame range specified by rendering images at zoom-level 100% only. |

### 2.13.4 Dot node

*This documentation is for version 1.0 of Dot (fr.inria.built-in.Dot).*

#### Description

Does not do anything to the input image, this is used in the node graph to make bends in the links.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| | | | |

### 2.13.5 Group node

*This documentation is for version 1.0 of Group (fr.inria.built-in.Group).*

#### Description

Use this to nest multiple nodes into a single node. The original nodes will be replaced by the Group node and its content is available in a separate NodeGraph tab. You can add user parameters to the Group node which can drive parameters of nodes nested within the Group. To specify the outputs and inputs of the Group node, you may add multiple Input node within the group and exactly 1 Output node.

### Inputs

| Input | Description | Optional |
|---|---|---|
| | | |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Convert to Group / `convertToGroup` | Button | | Converts this node to a Group: the internal node-graph and the user parameters will become editable |

## 2.13.6 ImageStatistics node

*This documentation is for version 1.0 of ImageStatistics (net.sf.openfx.ImageStatistics).*

### Description

Compute image statistics over the whole image or over a rectangle. The statistics can be computed either on RGBA components, in the HSVL colorspace (which is the HSV colorspace with an additional L component from HSL), or the position and value of the pixels with the maximum and minimum luminance values can be computed.

The color values of the minimum and maximum luma pixels for an image sequence can be used as black and white point in a Grade node to remove flicker from the same sequence.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Restrict to Rectangle / `restrictToRectangle` | Boolean | On | Restrict statistics computation to a rectangle. |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the rectangle |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the rectangle |
| HiDPI / `hidpi` | Boolean | Off | Should be checked when the display area is High-DPI (a.k.a Retina). Draws OpenGL overlays twice larger. |
| Auto Update / `autoUpdate` | Boolean | On | Automatically update values when input or rectangle changes if an analysis was performed at current frame. If not checked, values are only updated if the plugin parameters change. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Interactive Update / `interactive` | Boolean | Off | If checked, update the parameter values during interaction with the image viewer, else update the values when pen is released. |
| Min. / `statMin` | Color | r: 0 g: 0 b: 0 a: 0 | Minimum value. |
| Max. / `statMax` | Color | r: 0 g: 0 b: 0 a: 0 | Maximum value. |
| Mean / `statMean` | Color | r: 0 g: 0 b: 0 a: 0 | The mean is the average. Add up the values, and divide by the number of values. |
| S.Dev. / `statSDev` | Color | r: 0 g: 0 b: 0 a: 0 | The standard deviation (S.Dev.) quantifies variability or scatter, and it is expressed in the same units as your data. |
| Skewness / `statSkewness` | Color | r: 0 g: 0 b: 0 a: 0 | Skewness quantifies how symmetrical the distribution is.<br>• A symmetrical distribution has a skewness of zero.<br>• An asymmetrical distribution with a long tail to the right (higher values) has a positive skew.<br>• An asymmetrical distribution with a long tail to the left (lower values) has a negative skew.<br>• The skewness is unitless.<br>• Any threshold or rule of thumb is arbitrary, but here is one: If the skewness is greater than 1.0 (or less than -1.0), the skewness is substantial and the distribution is far from symmetrical. |
| Kurtosis / `statKurtosis` | Color | r: 0 g: 0 b: 0 a: 0 | Kurtosis quantifies whether the shape of the data distribution matches the Gaussian distribution.<br>•A Gaussian distribution has a kurtosis of 0.<br>•A flatter distribution has a negative kurtosis,<br>•A distribution more peaked than a Gaussian distribution has a positive kurtosis.<br>•Kurtosis has no units.<br>•The value that this plugin reports is sometimes called the excess kurtosis since the expected kurtosis for a Gaussian distribution is 0.0.<br>•An alternative definition of kurtosis is computed by adding 3 to the value reported by this plugin. With this definition, a Gaussian distribution is expected to have a kurtosis of 3.0. |
| Analyze Frame / `analyzeFrame` | Button | | Analyze current frame and set values. |
| Analyze Sequence / `analyzeSequence` | Button | | Analyze all frames from the sequence and set values. |
| Clear Frame / `clearFrame` | Button | | Clear analysis for current frame. |
| Clear Sequence / `clearSequence` | Button | | Clear analysis for all frames from the sequence. |
| HSVL Min. / `statHSVLMin` | Color | h: 0 s: 0 v: 0 l: 0 | Minimum value. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| HSVL Max. / statHSVLMax | Color | h: 0 s: 0 v: 0 l: 0 | Maximum value. |
| HSVL Mean / statHSVLMean | Color | h: 0 s: 0 v: 0 l: 0 | The mean is the average. Add up the values, and divide by the number of values. |
| HSVL S.Dev. / statHSVLSDev | Color | h: 0 s: 0 v: 0 l: 0 | The standard deviation (S.Dev.) quantifies variability or scatter, and it is expressed in the same units as your data. |
| HSVL Skewness / statHSVLSkewness | Color | h: 0 s: 0 v: 0 l: 0 | Skewness quantifies how symmetrical the distribution is.<br>• A symmetrical distribution has a skewness of zero.<br>• An asymmetrical distribution with a long tail to the right (higher values) has a positive skew.<br>• An asymmetrical distribution with a long tail to the left (lower values) has a negative skew.<br>• The skewness is unitless.<br>• Any threshold or rule of thumb is arbitrary, but here is one: If the skewness is greater than 1.0 (or less than -1.0), the skewness is substantial and the distribution is far from symmetrical. |
| HSVL Kurtosis / statHSVLKurtosis | Color | h: 0 s: 0 v: 0 l: 0 | Kurtosis quantifies whether the shape of the data distribution matches the Gaussian distribution.<br>•A Gaussian distribution has a kurtosis of 0.<br>•A flatter distribution has a negative kurtosis,<br>•A distribution more peaked than a Gaussian distribution has a positive kurtosis.<br>•Kurtosis has no units.<br>•The value that this plugin reports is sometimes called the excess kurtosis since the expected kurtosis for a Gaussian distribution is 0.0.<br>•An alternative definition of kurtosis is computed by adding 3 to the value reported by this plugin. With this definition, a Gaussian distribution is expected to have a kurtosis of 3.0. |
| Analyze Frame / analyzeFrameHSVL | Button | | Analyze current frame as HSVL and set values. |
| Analyze Sequence / analyzeSequenceHSVL | Button | | Analyze all frames from the sequence as HSVL and set values. |
| Clear Frame / clearFrameHSVL | Button | | Clear HSVL analysis for current frame. |
| Clear Sequence / clearSequenceHSVL | Button | | Clear HSVL analysis for all frames from the sequence. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Luminance Math / `luminanceMath` | Choice | Rec. 709 | Formula used to compute luminance from RGB values.<br>**Rec. 709 (rec709)**: Use Rec. 709 (0.2126r + 0.7152g + 0.0722b).<br>**Rec. 2020 (rec2020)**: Use Rec. 2020 (0.2627r + 0.6780g + 0.0593b).<br>**ACES AP0 (acesap0)**: Use ACES AP0 (0.3439664498r + 0.7281660966g + -0.0721325464b).<br>**ACES AP1 (acesap1)**: Use ACES AP1 (0.2722287168r + 0.6740817658g + 0.0536895174b).<br>**CCIR 601 (ccir601)**: Use CCIR 601 (0.2989r + 0.5866g + 0.1145b).<br>**Average (average)**: Use average of r, g, b.<br>**Max (max)**: Use max or r, g, b. |
| Max Luma Pixel / `maxLumaPix` | Double | x: 0 y: 0 | Position of the pixel with the maximum luma value. |
| Max Luma Pixel Value / `maxLumaPixVal` | Color | r: 0 g: 0 b: 0 a: 0 | RGB value for the pixel with the maximum luma value. |
| Min Luma Pixel / `minLumaPix` | Double | x: 0 y: 0 | Position of the pixel with the minimum luma value. |
| Min Luma Pixel Value / `minLumaPixVal` | Color | r: 0 g: 0 b: 0 a: 0 | RGB value for the pixel with the minimum luma value. |
| Analyze Frame / `analyzeFrameLuma` | Button | | Analyze current frame and set min/max luma values. |
| Analyze Sequence / `analyzeSequenceLuma` | Button | | Analyze all frames from the sequence aand set min/max luma values. |
| Clear Frame / `clearFrameLuma` | Button | | Clear luma analysis for current frame. |
| Clear Sequence / `clearSequenceLuma` | Button | | Clear luma analysis for all frames from the sequence. |

### 2.13.7 Input node

*This documentation is for version 1.0 of Input (fr.inria.built-in.Input).*

#### Description

This node can only be used within a Group. It adds an input arrow to the group.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| | | |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Optional / `optional` | Boolean | Off | When checked, this input of the group will be optional, i.e. it will not be required that it is connected for the render to work. |
| Mask / `isMask` | Boolean | Off | When checked, this input of the group will be considered as a mask. A mask is always optional. |

## 2.13.8 NoOp node

*This documentation is for version 2.0 of NoOp (net.sf.openfx.NoOpPlugin).*

### Description

Copies the input to the output.

This effect does not modify the actual content of the image, but can be used to modify the metadata associated with the clip (premultiplication, field order, format, pixel aspect ratio, frame rate).

This plugin concatenates transforms.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Force Copy / `forceCopy` | Boolean | Off | Force copy from input to output |
| Supports Tiles / `supportsTiles` | Boolean | On | Does the plugin support image tiling, i.e. rendering only a subset of the full region of definition? Only supported on OpenFX 1.4 hosts. |
| Set Premultiplication / `setPremult` | Boolean | Off | Set the premultiplication state of the output clip, without modifying the raw content. Use the Premult or UnPremult plu-gins to affect the content. |
| Output Premultiplication / `outputPremult` | Choice | Pre-Multi-plied | Premultiplication state of the output clip.<br>**Opaque**<br>**PreMultiplied**<br>**UnPreMultiplied** |
| Set Format / `setFormat` | Boolean | Off | Set the format of the output clip, without modifying the raw content. |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Extent / `extent` | Choice | Format | Extent (size and offset) of the output.<br>**Format (format)**: Use a pre-defined image format.<br>**Size (size)**: Use a specific extent (size and offset).<br>**Project (project)**: Use the project extent (size and offset). |
| Center / `recenter` | Button | | Centers the region of definition to the input region of definition. If there is no input, then the region of definition is centered to the project window. |
| Format / `NatronParamFormatChoice` | Choice | HD 1920x1080 | The output format<br>**PC_Video 640x480 (PC_Video)**<br>**NTSC 720x486 0.91 (NTSC)**<br>**PAL 720x576 1.09 (PAL)**<br>**NTSC_16:9 720x486 1.21 (NTSC_16:9)**<br>**PAL_16:9 720x576 1.46 (PAL_16:9)**<br>**HD_720 1280x720 (HD_720)**<br>**HD 1920x1080 (HD)**<br>**UHD_4K 3840x2160 (UHD_4K)**<br>**1K_Super_35(full-ap) 1024x778 (1K_Super_35(full-ap))**<br>**1K_Cinemascope 914x778 2.00 (1K_Cinemascope)**<br>**2K_Super_35(full-ap) 2048x1556 (2K_Super_35(full-ap))**<br>**2K_Cinemascope 1828x1556 2.00 (2K_Cinemascope)**<br>**2K_DCP 2048x1080 (2K_DCP)**<br>**4K_Super_35(full-ap) 4096x3112 (4K_Super_35(full-ap))**<br>**4K_Cinemascope 3656x3112 2.00 (4K_Cinemascope)**<br>**4K_DCP 4096x2160 (4K_DCP)**<br>**square_256 256x256 (square_256)**<br>**square_512 512x512 (square_512)**<br>**square_1K 1024x1024 (square_1K)**<br>**square_2K 2048x2048 (square_2K)** |
| Bottom Left / `bottomLeft` | Double | x: 0 y: 0 | Coordinates of the bottom left corner of the size rectangle. |
| Size / `size` | Double | w: 1 h: 1 | Width and height of the size rectangle. |
| Set Pixel Aspect Ratio / `setPixelAspectRatio` | Boolean | Off | Set the pixel aspect ratio of the output clip, without modifying the raw content. |
| Output Pixel Aspect Ratio / `outputPixelAspectRatio` | Double | 1 | Pixel aspect ratio of the output clip. |
| Set Frame Rate / `setFrameRate` | Boolean | Off | Set the frame rate state of the output clip, without modifying the raw content. |
| Output Frame Rate / `outputFrameRate` | Double | 24 | Frame rate of the output clip. |
| Clip Info… / `clipInfo` | Button | | Display information about the inputs |

### 2.13.9 Output node

*This documentation is for version 1.0 of Output (fr.inria.built-in.Output).*

#### Description

This node can only be used within a Group. There can only be 1 Output node in the group. It defines the output of the group.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| | | | |

### 2.13.10 Precomp node

*This documentation is for version 1.0 of Precomp (fr.inria.built-in.Precomp).*

#### Description

The Precomp node is like a Group node, but references an external Natron project (.ntp) instead.

This allows you to save a subset of the node tree as a separate project. A Precomp node can be useful in at least two ways:

It can be used to reduce portions of the node tree to pre-rendered image inputs. This speeds up render time: Natron only has to process the single image input instead of all the nodes within the project. Since this is a separate project, you also maintain access to the internal tree and can edit it any time.

It enables a collaborative project: while one user works on the main project, others can work on other parts referenced by the Precomp node.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| | | |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Project Filename (.ntp) / `projectFilename` | N/A | | The absolute file path of the project to use as a pre-comp. |
| Edit Project... / `editProject` | Button | | Opens the specified project in a new Natron instance |
| Pre-Render / `preRender` | Boolean | On | When checked the output of this node will be the images read directly from what is rendered by the node indicated by "Write Node". If no Write is selected, or if the rendered images do not exist this node will have the behavior determined by the "On Error" parameter. To pre-render images, select a write node, a frame-range and hit "Render".<br><br>When unchecked, this node will output the image rendered by the node indicated in the "Output Node" parameter by rendering the full-tree of the sub-project. In that case no writing on disk will occur and the images will be cached with the same policy as if the nodes were used in the active project in the first place. |
| Write Node / `writeNode` | Choice | | Choose here the Write node in the pre-comp from which to render images then specify a frame-range and hit the "Render" button. |
| First-Frame / `first` | Integer | 0 | The first-frame to render |
| Last-Frame / `last` | Integer | 0 | The last-frame to render |
| On Error / `onError` | Choice | Error | Indicates the behavior when an image is missing from the render of the pre-comp project<br>**Load previous**: Loads the previous frame in the sequence.<br>**Load next**: Loads the next frame in the sequence.<br>**Load nearest**: Loads the nearest frame in the sequence.<br>**Error**: Fails to render.<br>**Black**: Black Image. |
| Render / `render` | Button | | |

## 2.14 GMIC nodes

The following sections contain documentation about every node in the GMIC group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.14.1 About G'MIC node

*This documentation is for version 1.0 of About G'MIC (eu.gmic.AboutGMIC).*

#### Description

Support Us !

is proposed to you by

David Tschumperle and Sebastien Fourey

( IMAGE Team / GREYC Laboratory - CNRS UMR 6072 ): https://www.greyc.fr/?page_id=443&lang=en

If you appreciate what we do on G'MIC and want to help us maintaining and developing this piece of software, please consider making a donation!

Go to the donation page: https://libreart.info/en/projects/gmic

G'MIC officially collaborates with LILA ("Libre comme l'Art"), a French non-profit organization, which promotes Arts and Artists as well as access to technics and knowledge for everyone.

LILA collects donations to help developing G'MIC.

Author: David Tschumperle. Latest Update: 2019/03/13.

About G'MIC

is proposed to you by

David Tschumperle and Sebastien Fourey

( IMAGE Team / GREYC Laboratory - CNRS UMR 6072 ): https://www.greyc.fr/?page_id=443&lang=en

This plug-in is based on our open-source libraries G'MIC and CImg (C++ Template Image Processing Library), available at:

https://gmic.eu and http://cimg.eu

If you appreciate G'MIC, you are welcome to send us a nice postcard from your place, at:

David Tschumperle,

Laboratoire GREYC (CNRS UMR 6072), Equipe Image,

6 Bd du Marechal Juin,

14050 Caen Cedex / France.

Postcards senders automatically enter the Friends Hall of Fame :) !

You may also consider making a donation!

Contributors

We would like to thank all these people who contributed to G'MIC in one way or another. A big hug to :

- Sylvie Alexandre (packaging, testing & filters) - Partha Bagchi (packaging) - Daniel P. Berrange (packaging) - Sebastien Bougleux (debugging) - Jerome Boulanger (testing & code) - Claude Bulin (packaging) - Aurelien Ceyden (packaging) - Francois Collard (testing) - Patrick David (testing & filters) - Maxime Daisy (code & testing) - Frederic Devernay (code) - Iain Fergusson (filters) - Tobias Fleischer (testing & code) - Roberto Ferramosca (packaging) - Jerome Ferrari (testing, code & tutorials) - Andrea Ferrero (testing, code) - Chris Fiedler (gfx) - Sebastien Fourey (G'MIC-Qt, ZArt code & G'MIC online) - Gentlemanbeggar (filters) - David Gowers (testing) - Claes Holmerson (tutorials) - Arto Huotari (filters) - Dan Leinir Turthra Jensen (debugging) - Tom Keil (testing, filters & tutorials) - Andy Kelday (testing & filters) - Alan Kwan (afre) (testing & filters) - Angelo Lama (testing & EKD integration) - John Lakkas (filters) - Stephane de la Linuxerie (design) - Mark (translation) - Mahvin (testing & design) - MareroQ (translation) - Ramon Miranda (translation) - Tou Omiya (translation) - Mauro Quercia (translation) - PhotoComiX (testing, translation & filters) - Garry Osgood (documentation & filters) - Jehan Pages (testing & code) - Andreas Pahlsson (filters)

- James Prichard (testing & filters) - Guilherme Razgriz (translation) - Karsten Rodenacker (packaging & code) - Marc Roovers (clut data) - Dani Sarda (translation) - Yuri Shemanin (debugging) - Silvio Grosso (debugging) - Stepanekos (translation) - Thorsten “otto” Stettin (packaging) - Lukas Tvrdy (Krita integration) - Martin Wolff (testing & filters) - Bernd Zeimetz (packaging) - Matthias Zepper (testing) -

Download External Data

This filter will download all external data files used by some filters of the G’MIC plug-in (Color Grading, Light Leaks, Grain, etc...), and will install them as persistent files on your hard drive. After this operation, you won’t need a permanent internet connection anymore in order to use some of the G’MIC filters.

Warning: A lot of data will be downloaded by this filter. This can take a long time !

Alternative (manual) method:

If, for any reasons, your plug-in is unable to retrieve data from the Internet, you can download all those data files manually (as a single .zip file) at this address :

https://gmic.eu/gmic_all_data.zip

You must then decompress all files contained in this archive at the following location:

- for Unix-like systems : $HOME/.cache/gmic/
- for Windows systems : %APPDATA/gmic/

Author: David Tschumperle. Latest Update: 2014/16/04.

Filter Design

G’MIC is an open image processing framework. Thus, including user-defined filters into this plug-in is possible.

To do so, you need to create a .gmic file in your $HOME/ folder (or %APPDATA%/user.gmic on Windows). It will be read each time the plug-in is launched, or when the Refresh button (under the central pane) is pressed. It must be a regular ascii file, containing the declarations and implementations of the filters (written in the G’MIC language) that will be added to the list of available ones.

Existing filters are already defined this way. Writing a filter from scratch in G’MIC requires some skills, but can be generally done in very few lines.

Example of a valid .gmic entry :

#@gmic_plugin My effect : my_effect, my_effect

Sigma = float(2,0,10)

my_effect :

```
\+blur $1 n 0,255 xor
```

Look at the reference documentation and the tutorial whose links are given below, to learn more. By the way, you are encouraged to share your nice custom filters with us on our forums, for inclusion into next releases of G’MIC.

[1] G’MIC reference documentation”: : https://gmic.eu/reference.shtml

[2] G’MIC scripting tutorial”: : https://gmic.eu/tutorial/index.shtml

[3] G’MIC filter template”: : https://gmic.eu/template.gmic

Friends Hall of Fame

Supporters:

- A big hug goes to these friends who supported the project:

Christian Stenner, Daniel Balle, Matthias Fuchs, Alban Bourrat, Elizabeth Hayman, Nicolas Kunzler, Mikael Wargh, Giovanni Bianchessi, Job van der Zwan, Laurent Espitallier, Mark van der Grijp, Patrick Wauters, Marc-Andre Gasser, Steven Shupe, Mika Yrj la, Silvio Grosso, Marek Kubica, Mike Bing, Dave Allen, Margaret Wong, Adrian Bottomley, Pamela Young, Chris Bowness, Peter Howarth, Marlon Montalvo, Christian Freiherr von Malchus, Nolan Tyrrell, Gilles Bouquerel, Mihail Balabanov, Rolf Niepraschk, Volkmar Geske, Menno Tjoelker, Abhijeet Borkar, Arleta Lesniewska, Nicola Giaccobe, Helmut Muhleisen, Paul Buckley, Olivier Lecarme, Edward

Ingram, Stefan Stadtler-Ley, Michel Pastor, Sz.U, Sven Kraft, Frederik Elwert, Jessica Leonard, Kenneth Simons, Milos Ciuk, Manlio Barolo, John Lewandowski, Didier Lima, Žygimantas Tauras, Massimo Ferri, Hiroshi Takekawa, Freelance writer, Elaine Hutchings, Andras Somogyi, Jason Dora, Boris Hajdukovic, Jeff Combs / Mappish, BTraven, Steven Brener, Susanne Gabrielski, Andrea Correani, Mads Thomsen, Djek Eykhout, Michael Calabrese, Joachim Steiert Christian Dubettier, J. Casseur, Okki, Dariusz Duma, Mahvin, Elleen Hennessy, Bluff-StuffPlus, Bertrand Chan, Mirella Scotto, Paul Sauve, Lars Mielke, Devin Sorell, Pepe Baeza, Andrey Pivovarova, David Oliver, errore, Anudai, James Stalnaker, Paolo Finetti, Luigi Scarselli, Pat David, Juan Jose Rodriguez Vela, Thomas Jakob, Kim Bartholomew, Sudi, Michael Prostka, Arkadi Gelfond, Sabine Schafers, Bull O'Woods, Jost Jakob Schaper, Dominik Wefers, Frank McLaughlin, Jonas Wagner, Void lon iXaarii, Mark Boadey, Laura Haglund, Lee Elliott, Bernard Desenclos, Randy Gordon-Gilmore, Eddie Dedrick, Greg FitzPatrick, Zsolt Szabo, Daniel Hanna, Peter Bengtsson, Diego Nassetti, William Tweedy, Shawnee Horn, Stephan Munsch, MysticAli3n-Wear, Mika Mantere, Christian Beuschel, Tore Busch, Douc McGregor. Marcel Dahm, Susan Voitel, Henk Koning, Arnie Jordan, Carol Jennings, Sebastien Huart, Jess Stryker, Rui Luis, Renato Salles, Petr Zagalak, Antonio Vicien Faure, Vincent Bermel, Christian Stocco, Richard Benedict, Dr. Helmut Jarausch, Michael Beck, Riccardo Leone, Gisela Looram, Frank Tegtmeyer, David Kettrey, Peter Hoge, Alexander Heitmann, Olivier Larski, Victor Fandrey, Stefan Peter, Dimitrios Psychogios, Antti Luoma, Eddy Young Tie Yang, Thomas Elfstrom, Valentine Boyce, George Harnett, Darius Manka, Chris Knox, Thomas Tapping, Phillip R Ziesemer, Jean Francois. Franz Ziereis, Alessandro Renzi, Tsuda Koshi, Boxrec Ltd, Wolfgang Schweizer, Ramon Miranda, Volker Bradley, Marco Zara, Marco Tedaldi, Rodney Lee, Konstantinos Blatzonis, Simon Chanson, Herbert Malle, Matthias Zepper, Christian Mariucci, M. R., Mark Link, Rolf Steinort, Daniel Tauro, Ben Langhinrichs, Paolo Pedaletti, Ricardo Corin, James Prichard, Matt Jones, Eddy Vervest, Flavio Casadei Della Chiesa, Lyle Kroll.

Postcard senders:

- We've received 46 postcards from G'MIC enthusiasts so far. You could be the 47rd sender :)
- A big hug goes to these postcard senders (recently received first) :

Benjamin Russell (Portsmouth/USA), Andreas Weissenburger (Bochum/Germany), Patrick Wanters (USA), Josep Febrer (Pregonda/Menorca), Richard Gledson (Newcastle upon tyne/England), James Jaworski (Winnipeg/Canada), Powlux (France), Volker Doebel (Haldern/Germany), Patrick Wauters (Bilbao/Spain), Sebastien Fourey (Konstanz/Germany), David Revoy (Toulouse/France), Giulio Canevari (Pavia/Italy), Bruno Steinbach (Pondicherry/India), Steve Gillow (Fort Worth/Texas/USA), Peter Neave (Sydney/Australia), Andrea [Photoflow] (Italy), Garry R. Osgood (New York/USA), Justin Pletzfeld (Germany), Werner Meier (Germany), Patrick Wauters (Roma/Italy), Marc Lis (Belgium), ZondeR (France), Bill C. (USA), Michael T. (France), Patrick Wauters (Lisboa), Akky [Gimpchat] (Australia), Michel Thomas (Germany), Pierre-Yves (Ile de Batz/France), Family Hamacher (Trier/Germany), Benoit Gauzere and Francois Lozes (Hokusai/Japan), Dr. Rainer Teubner (Seligenstadt/Germany), Mauro Mitrino (Mantova/Italy), Werner Meier (Mettlach/Germany), Arto Huotari (Helsinki/Finland), Benoit Gauzere (California/USA), Arkadi Gelfond (Foster City - California/USA), Corinne Masimann (Neuchatel/Switzerland), Mahvin (Portland/USA), Vincent Roullier (Caen/France), M???? (Munich/Germany), F. Albior (Jaca/Spain), PhotoComIX (Frascati/Italy), Guy Poizat (Cabestany/France), Institut for Biomathematik und Biometrie (Neuherberg/Germany), Jean-Michel Webbe (Guadeloupe/France), Jaime (Barcelona/Spain).

May the force be with you!

Gmicky - Roddy

Gmicky is the name of the G'MIC mascot. He is a small and cute tiger who knows how to do magic. Gmicky is a tiger, i.e. fast, agile and elegant, just as the G'MIC code is :). As many magicians, Gmicky knows lot of gimmicks, and he is a direct and friendly companion of the ImageMagick's wizard, or the GraphicMagick's frog.

Roddy is another mascot designed specifically for the Artistic / Rodilius filter of G'MIC.

Gmicky and Roddy have been both created and drawn by

Mahvelous Mahvin: http://www.mahvin.com/

and

David Revoy (Deevad): http://www.davidrevoy.com/

Privacy Notice

This plugin may download up-to-date filter definitions from the gmic.eu server.

It is the case when first launched after a fresh installation, and periodically with a frequency which can be set in the settings dialog. The user should be aware that the following information may be retrieved from the server logs: IP address of the client; date and time of the request; as well as a short string, supplied through the HTTP protocol "User Agent" header field, which describes the full plugin version as shown in the window title (e.g. "G'MIC-Qt for GIMP 2.8 - Linux 64 bits - 2.2.1_pre#180301").

Note that this information may solely be used for purely anonymous statistical purposes.

Author: Sebastien Fourey. Latest Update: 2018/03/01.

Release Notes

- 2009/01/13 : version 1.3.0 (initial plug-in release).
- 2010/09/03 : version 1.4.0.
- 2011/07/07 : version 1.5.0.
- 2014/08/20 : version 1.6.0.
- 2016/03/25 : version 1.7.0.
- 2017/05/29 : version 2.0.0.
- 2017/10/09 : version 2.1.0.
- 2018/02/15 : version 2.2.0.
- 2018/06/21 : version 2.3.0.
- 2018/10/04 : version 2.4.0.
- 2019/03/15 : version 2.5.0.
- 2019/04/29 : version 2.6.0.
- 2019/08/14 : version 2.7.0.
- 2020/02/10 : version 2.8.4 (Current stable).

View latest minor changelog (2.8): https://discuss.pixls.us/t/release-of-gmic-2-8

View latest major changelog (2.0): https://discuss.pixls.us/t/release-of-gmic-2-0-0

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Force re-Download from Scratch / `Force_reDownload_from_Scratch` | Boolean | Off | |

continues on next page

Table 188 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mascot Image / `Mascot_Image` | Choice | Gmicky (by Deevad) | **Gmicky (by Deevad)**<br>**Gmicky (by Mahvin)**<br>**Gmicky & Wilber (by Mahvin)**<br>**Roddy (by Mahvin)** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.2 G'MIC 3D Blocks node

*This documentation is for version 1.0 of G'MIC 3D Blocks (eu.gmic.3DBlocks).*

#### Description

Author: David Tschumperle. Latest Update: 2014/10/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution / `Resolution` | Integer | 32 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Elevation / `Elevation` | Double | 4 | |
| Size / `Size` | Double | 1.5 | |
| Angle / `Angle` | Double | 30 | |
| Tilt / `Tilt` | Double | 60 | |
| FOV / `FOV` | Double | 45 | |
| Centering / `Centering` | Double | x: 0.5 y: 0.5 | |
| X-Light / `XLight` | Double | 0 | |
| Y-Light / `YLight` | Double | -50 | |
| Z-Light / `ZLight` | Double | -100 | |
| Specular Lightness / `Specular_Lightness` | Double | 0.5 | |
| Specular Shininess / `Specular_Shininess` | Double | 0.7 | |
| Use Light / `Use_Light` | Boolean | On | |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Outline Color / `Outline_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |

continues on next page

Table 189 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.3 G'MIC 3D Colored Object node

*This documentation is for version 1.0 of G'MIC 3D Colored Object (eu.gmic.3DColoredObject).*

### Description

Author: David Tschumperle. Latest Update: 2011/16/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `Type` | Choice | Box | **Plane**<br>**Box**<br>**Pyramid**<br>**Ellipsoid**<br>**Torus**<br>**Gyroid**<br>**Weird**<br>**Cup** |
| Color / `Color` | Color | r: 0.501961 g: 0.501961 b: 0.501961 a: 0.501961 | |
| Size-1 / `Size1` | Double | 0.5 | |
| Size-2 / `Size2` | Double | 0.5 | |
| Size-3 / `Size3` | Double | 0.5 | |
| X-Angle / `XAngle` | Double | 57 | |
| Y-Angle / `YAngle` | Double | 41 | |
| Z-Angle / `ZAngle` | Double | 21 | |
| FOV / `FOV` | Double | 45 | |
| X-Light / `XLight` | Double | 0 | |
| Y-Light / `YLight` | Double | 0 | |

continues on next page

Table 190 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Z-Light / ZLight | Double | -100 | |
| Specular Lightness / Specular_Lightness | Double | 0.5 | |
| Specular Shininess / Specular_Shininess | Double | 0.7 | |
| Rendering / Rendering | Choice | Gouraud | **Dots**<br>**Wireframe**<br>**Flat**<br>**Flat-Shaded**<br>**Gouraud**<br>**Phong** |
| Antialiasing / Antialiasing | Boolean | On | |
| Output Layer / Output_Layer | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / Resize_Mode | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / Ignore_Alpha | Boolean | Off | |
| Preview/Draft Mode / PreviewDraft_Mode | Boolean | Off | |
| Global Random Seed / Global_Random_Seed | Integer | 0 | |
| Animate Random Seed / Animate_Random_Seed | Boolean | Off | |

continues on next page

Table 190 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.4 G'MIC 3D Elevation node

*This documentation is for version 1.0 of G'MIC 3D Elevation (eu.gmic.3DElevation).*

#### Description

Note: Add a top layer to define object texture.

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Factor / `Factor` | Double | 100 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Width / `Width` | Integer | 1024 | |
| Height / `Height` | Integer | 1024 | |
| Size / `Size` | Double | 0.8 | |
| X-Angle / `XAngle` | Double | 25 | |
| Y-Angle / `YAngle` | Double | 0 | |
| Z-Angle / `ZAngle` | Double | 21 | |
| FOV / `FOV` | Double | 45 | |

continues on next page

Table 191 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Light / `XLight` | Double | 0 | |
| Y-Light / `YLight` | Double | 0 | |
| Z-Light / `ZLight` | Double | -100 | |
| Specular Lightness / `Specular_Lightness` | Double | 0.5 | |
| Specular Shininess / `Specular_Shininess` | Double | 0.7 | |
| Rendering / `Rendering` | Choice | Flat | **Dots**<br>**Wireframe**<br>**Flat**<br>**Flat-Shaded**<br>**Gouraud**<br>**Phong** |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 191 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.5 G'MIC 3D Extrusion node

*This documentation is for version 1.0 of G'MIC 3D Extrusion (eu.gmic.3DExtrusion).*

#### Description

Note: Add a top layer to define object texture.

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Depth / `Depth` | Double | 10 | |
| Resolution / `Resolution` | Integer | 512 | |
| Smoothness / `Smoothness` | Double | 0.6 | |
| Width / `Width` | Integer | 1024 | |
| Height / `Height` | Integer | 1024 | |
| Size / `Size` | Double | 0.5 | |
| X-Angle / `XAngle` | Double | 57 | |
| Y-Angle / `YAngle` | Double | 41 | |

continues on next page

Table 192 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Z-Angle / `ZAngle` | Double | 21 | |
| FOV / `FOV` | Double | 45 | |
| X-Light / `XLight` | Double | 0 | |
| Y-Light / `YLight` | Double | 0 | |
| Z-Light / `ZLight` | Double | -100 | |
| Specular Lightness / `Specular_Lightness` | Double | 0.5 | |
| Specular Shininess / `Specular_Shininess` | Double | 0.7 | |
| Rendering / `Rendering` | Choice | Gouraud | **Dots**<br>**Wireframe**<br>**Flat**<br>**Flat-Shaded**<br>**Gouraud**<br>**Phong** |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

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Table 192 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.6 G'MIC 3D Image Object node

*This documentation is for version 1.0 of G'MIC 3D Image Object (eu.gmic.3DImageObject).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `Type` | Choice | Cube | **Plane**<br>**Cube**<br>**Pyramid**<br>**Sphere**<br>**Torus**<br>**Gyroid**<br>**Weird**<br>**Cup**<br>**Rubik** |

continues on next page

Table 193 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width / `Width` | Integer | 1024 | |
| Height / `Height` | Integer | 1024 | |
| Size / `Size` | Double | 0.5 | |
| X-Angle / `XAngle` | Double | 57 | |
| Y-Angle / `YAngle` | Double | 41 | |
| Z-Angle / `ZAngle` | Double | 21 | |
| FOV / `FOV` | Double | 45 | |
| X-Light / `XLight` | Double | 0 | |
| Y-Light / `YLight` | Double | 0 | |
| Z-Light / `ZLight` | Double | -100 | |
| Specular Lightness / `Specular_Lightness` | Double | 0.5 | |
| Specular Shininess / `Specular_Shininess` | Double | 0.7 | |
| Rendering / `Rendering` | Choice | Gouraud | **Dots**<br>**Wireframe**<br>**Flat**<br>**Flat-Shaded**<br>**Gouraud**<br>**Phong** |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 193 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.7 G'MIC 3D Lathing node

*This documentation is for version 1.0 of G'MIC 3D Lathing (eu.gmic.3DLathing).*

#### Description

Note: Add a top layer to define object texture.

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution / `Resolution` | Integer | 76 | |
| Smoothness / `Smoothness` | Double | 2 | |
| Max Angle / `Max_Angle` | Double | 361 | |
| Width / `Width` | Integer | 1024 | |
| Height / `Height` | Integer | 1024 | |
| Size / `Size` | Double | 0.5 | |
| X-Angle / `XAngle` | Double | 0 | |
| Y-Angle / `YAngle` | Double | 0 | |
| Z-Angle / `ZAngle` | Double | 0 | |
| FOV / `FOV` | Double | 45 | |
| X-Light / `XLight` | Double | 0 | |
| Y-Light / `YLight` | Double | 0 | |
| Z-Light / `ZLight` | Double | -100 | |
| Specular Lightness / `Specular_Lightness` | Double | 0.5 | |
| Specular Shininess / `Specular_Shininess` | Double | 0.7 | |
| Rendering / `Rendering` | Choice | Gouraud | **Dots**<br>**Wireframe**<br>**Flat**<br>**Flat-Shaded**<br>**Gouraud**<br>**Phong** |
| Antialiasing / `Antialiasing` | Boolean | On | |

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Table 194 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.8 G'MIC 3D Random Objects node

*This documentation is for version 1.0 of G'MIC 3D Random Objects (eu.gmic.3DRandomObjects).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `Type` | Choice | Cube | **Cube**<br>**Cone**<br>**Cylinder**<br>**Sphere**<br>**Torus** |
| Density / `Density` | Integer | 50 | |
| Size / `Size` | Double | 3 | |
| Z-Range / `ZRange` | Double | 100 | |
| FOV / `FOV` | Double | 45 | |
| X-Light / `XLight` | Double | 0 | |
| Y-Light / `YLight` | Double | 0 | |
| Z-Light / `ZLight` | Double | -100 | |
| Specular Lightness / `Specular_Lightness` | Double | 0.5 | |
| Specular Shininess / `Specular_Shininess` | Double | 0.7 | |

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Table 195 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Rendering / `Rendering` | Choice | Flat-Shaded | **Dots**<br>**Wireframe**<br>**Flat**<br>**Flat-Shaded**<br>**Gouraud**<br>**Phong** |
| Opacity / `Opacity` | Double | 1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.9 G'MIC Abstraction node

*This documentation is for version 1.0 of G'MIC Abstraction (eu.gmic.Abstraction).*

#### Description

Author: David Tschumperle. Latest Update: 2011/19/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 1 | |
| Levels / `Levels` | Integer | 10 | |
| Contrast / `Contrast` | Double | 0.2 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 196 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.10 G'MIC Add Grain node

*This documentation is for version 1.0 of G'MIC Add Grain (eu.gmic.AddGrain).*

### Description

Author: David Tschumperle. Latest Update: 2016/02/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset / `Preset` | Choice | Orwo NP20-GDR | **Orwo NP20-GDR**<br>**Kodak TMAX 400**<br>**Kodak TMAX 3200**<br>**Kodak TRI-X 1600**<br>**Unknown** |
| Blend Mode / `Blend_Mode` | Choice | Grain Merge | **Alpha**<br>**Grain Merge**<br>**Hard Light**<br>**Overlay**<br>**Soft Light**<br>**Grain Only** |
| Opacity / `Opacity` | Double | 0.2 | |
| Scale / `Scale` | Double | 100 | |
| Colored Grain / `Colored_Grain` | Boolean | Off | |
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Hue (%) / `Hue_` | Double | 0 | |

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Table 197 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Saturation (%) / `Saturation_` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Grain Alone / `Preview_Grain_Alone` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 197 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.11 G'MIC Align Layers node

*This documentation is for version 1.0 of G'MIC Align Layers (eu.gmic.AlignLayers).*

#### Description

Author: David Tschumperle. Latest Update: 2020/01/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Alignment Type / `Alignment_Type` | Choice | Rigid | **Rigid**<br>**Non-Rigid** |
| Smoothness / `Smoothness` | Double | 0.7 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scales / `Scales` | Choice | Auto | **Auto**<br>**1**<br>**2**<br>**3**<br>**4**<br>**5**<br>**6**<br>**7**<br>**8** |
| Revert Layers / `Revert_Layers` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 198 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.12 G'MIC Apply External CLUT node

*This documentation is for version 1.0 of G'MIC Apply External CLUT (eu.gmic.ApplyExternalCLUT).*

#### Description

Note: Do not forget to set the Input layers option if you select Top layer or Bottom layer.

Author: David Tschumperle. Latest Update: 2016/02/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Specify HaldCLUT As / `Specify_HaldCLUT_As` | Choice | File-name | **Top Layer**<br>**Bottom Layer**<br>**Filename** |
| HaldCLUT Filename / `HaldCLUT_Filename` | N/A | | |
| Strength (%) / `Strength_` | Dou-ble | 100 | |
| Brightness (%) / `Brightness_` | Dou-ble | 0 | |
| Contrast (%) / `Contrast_` | Dou-ble | 0 | |
| Gamma (%) / `Gamma_` | Dou-ble | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Hue (%) / `Hue_` | Double | 0 | |
| Saturation (%) / `Saturation_` | Double | 0 | |
| Normalize Colors / `Normalize_Colors` | Choice | None | **None**<br>**Pre-Normalize**<br>**Post-Normalize**<br>**Both** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 199 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.13 G'MIC Array Faded node

*This documentation is for version 1.0 of G'MIC Array Faded (eu.gmic.ArrayFaded).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 2 | |
| Y-Tiles / `YTiles` | Integer | 2 | |
| X-Offset (%) / `XOffset_` | Double | 0 | |
| Y-Offset (%) / `YOffset_` | Double | 0 | |
| Fade Start (%) / `Fade_Start_` | Double | 80 | |
| Fade End (%) / `Fade_End_` | Double | 90 | |
| Mirror / `Mirror` | Choice | None | **None**<br>**X-Axis**<br>**Y-Axis**<br>**XY-Axes** |
| Size / `Size` | Choice | Shrink | **Shrink**<br>**Expand**<br>**Repeat [Memory Consuming!]** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.14 G'MIC Array Mirrored node

*This documentation is for version 1.0 of G'MIC Array Mirrored (eu.gmic.ArrayMirrored).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Iterations / `Iterations` | Integer | 1 | |
| X-Offset (%) / `XOffset_` | Double | 0 | |
| Y-Offset (%) / `YOffset_` | Double | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Array Mode / `Array_Mode` | Choice | XY-Axes | **X-Axis**<br>**Y-Axis**<br>**XY-Axes**<br>**2XY-Axes** |
| Initialization / `Initialization` | Choice | Original | **Original**<br>**Mirror X**<br>**Mirror Y**<br>**Rotate 90 deg.**<br>**Rotate 180 deg.**<br>**Rotate 270 deg.** |
| Expand Size / `Expand_Size` | Boolean | Off | |
| Crop (%) / `Crop_` | Integer | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 201 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.15 G'MIC Array Random node

*This documentation is for version 1.0 of G'MIC Array Random (eu.gmic.ArrayRandom).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Source X-Tiles / `Source_XTiles` | Integer | 5 | |
| Source Y-Tiles / `Source_YTiles` | Integer | 5 | |
| Destination X-Tiles / `Destination_XTiles` | Integer | 7 | |
| Destination Y-Tiles / `Destination_YTiles` | Integer | 7 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.16 G'MIC Array Random Colors node

*This documentation is for version 1.0 of G'MIC Array Random Colors (eu.gmic.ArrayRandomColors).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 5 | |
| Y-Tiles / `YTiles` | Integer | 5 | |
| Opacity / `Opacity` | Double | 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 203 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.17 G'MIC Array Regular node

*This documentation is for version 1.0 of G'MIC Array Regular (eu.gmic.ArrayRegular).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 2 | |
| Y-Tiles / `YTiles` | Integer | 2 | |
| X-Offset (%) / `XOffset_` | Double | 0 | |
| Y-Offset (%) / `YOffset_` | Double | 0 | |
| Mirror / `Mirror` | Choice | None | **None**<br>**X-Axis**<br>**Y-Axis**<br>**XY-Axes** |

continues on next page

Table 204 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `Size` | Choice | Shrink | **Shrink**<br>**Expand**<br>**Repeat [Memory Consuming!]** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.18 G'MIC Ascii Art node

*This documentation is for version 1.0 of G'MIC Ascii Art (eu.gmic.AsciiArt).*

#### Description

Click here for a detailed description of this filter.: http://www.gimpchat.com/viewtopic.php?f=28&t=10047

Author: David Tschumperle. Latest Update: 2014/27/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Charset / `Charset` | Choice | Ascii | **Custom**<br>**Binary Digits**<br>**Digits**<br>**Lowercase Letters**<br>**Uppercase Letters**<br>**Ascii**<br>**Card Suits**<br>**Math Symbols** |
| Custom Dictionary / `Custom_Dictionary` | String | .oO0 | |
| Analysis Scale / `Analysis_Scale` | Integer | 16 | |
| Analysis Smoothness / `Analysis_Smoothness` | Double | 15 | |
| Synthesis Scale / `Synthesis_Scale` | Integer | 16 | |
| Result Type / `Result_Type` | Choice | Colored on Black | **White on Black**<br>**Black on White**<br>**Colored on Black**<br>**Colored on Transparent** |
| Gamma / `Gamma` | Double | 0 | |
| Smoothness / `Smoothness` | Double | 0.2 | |

continues on next page

Table 205 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colors / `Colors` | Choice | Full Colors | **Full Colors**<br>**2 Colors**<br>**3 Colors**<br>**4 Colors**<br>**8 Colors**<br>**12 Colors**<br>**16 Colors**<br>**Grayscale**<br>**2 Grays**<br>**3 Grays**<br>**4 Grays**<br>**8 Grays**<br>**12 Grays**<br>**16 Grays** |
| Output Ascii File / `Output_Ascii_File` | Boolean | Off | |
| Output Folder / `Output_Folder` | N/A | | |
| Output Filename / `Output_Filename` | String | gmic_asciiart.txt | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

continues on next page

Table 205 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.19 G'MIC B&W Stencil node

*This documentation is for version 1.0 of G'MIC B&W Stencil (eu.gmic.BWStencil).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Threshold / `Threshold` | Double | 10 | |
| Smoothness / `Smoothness` | Double | 10 | |
| Hue / `Hue` | Double | 0 | |
| Saturation / `Saturation` | Double | 0 | |

continues on next page

Table 206 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 206 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.20 G'MIC Ball node

*This documentation is for version 1.0 of G'MIC Ball (eu.gmic.Ball).*

#### Description

Author: David Tschumperle. Latest Update: 2013/27/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `Radius` | Integer | 128 | |
| Specular Light / `Specular_Light` | Double | 0.8 | |
| Specular Size / `Specular_Size` | Double | 1 | |
| Shadow / `Shadow` | Double | 1.5 | |
| Color / `Color` | Color | r: 1 g: 0 b: 1 a: 1 | |

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Table 207 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.21 G'MIC Bandpass node

*This documentation is for version 1.0 of G'MIC Bandpass (eu.gmic.Bandpass).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Low Frequency / `Low_Frequency` | Double | 0 | |
| High Frequency / `High_Frequency` | Double | 100 | |

continues on next page

Table 208 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | Normalize | **None**<br>**Cut**<br>**Normalize** |

continues on next page

Table 208 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 208 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.22 G'MIC Barnsley Fern node

*This documentation is for version 1.0 of G'MIC Barnsley Fern (eu.gmic.BarnsleyFern).*

### Description

This filter renders the Barnsley fern fractal, described here:

https://en.wikipedia.org/wiki/Barnsley_fern

Author: David Tschumperle. Latest Update: 2016/18/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `Type` | Choice | Asplenium Adiantum-Nigrum | **Asplenium Adiantum-Nigrum**<br>**Thelypteridaceae** |
| Density (%) / `Density_` | Double | 100 | |
| Angle / `Angle` | Double | 30 | |
| Opacity (%) / `Opacity_` | Double | 40 | |

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Table 209 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color / `Color` | Color | r: 0.0392157 g: 0.698039 b: 0 a: 0 | |
| Add as a New Layer / `Add_as_a_New_Layer` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.23 G'MIC Basic Adjustments node

*This documentation is for version 1.0 of G'MIC Basic Adjustments (eu.gmic.BasicAdjustments).*

### Description

Author: David Tschumperle. Latest Update: 2016/16/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Hue (%) / `Hue_` | Double | 0 | |
| Saturation (%) / `Saturation_` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 210 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.24 G'MIC Bayer Filter node

*This documentation is for version 1.0 of G'MIC Bayer Filter (eu.gmic.BayerFilter).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Starting Pattern / `Starting_Pattern` | Choice | Red-Green | **Red-Green**<br>**Blue-Green**<br>**Green-Red**<br>**Green-Blue** |
| Keep Colors / `Keep_Colors` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.25 G'MIC Bayer Reconstruction node

*This documentation is for version 1.0 of G'MIC Bayer Reconstruction (eu.gmic.BayerReconstruction).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| G/M Smoothness / `GM_Smoothness` | Double | 6 | |
| R/B Smoothness (Principal) / `RB_Smoothness_Principal` | Double | 6 | |
| R/B Smoothness (Secondary) / `RB_Smoothness_Secondary` | Double | 4 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 212 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.26 G'MIC Black & White node

*This documentation is for version 1.0 of G'MIC Black & White (eu.gmic.BlackWhite).*

#### Description

Author: David Tschumperle. Latest Update: 2013/20/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Red Level / `Red_Level` | Double | 0.299 | |
| Red Smoothness / `Red_Smoothness` | Double | 0 | |
| Green Level / `Green_Level` | Double | 0.587 | |
| Green Smoothness / `Green_Smoothness` | Double | 0 | |
| Blue Level / `Blue_Level` | Double | 0.114 | |
| Blue Smoothness / `Blue_Smoothness` | Double | 0 | |
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Hue (%) / `Hue_` | Double | 0 | |

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Table 213 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Saturation (%) / `Saturation_` | Double | 0 | |
| Grain (Shadows) / `Grain_Shadows` | Double | 0 | |
| Grain (Midtones) / `Grain_Midtones` | Double | 0 | |
| Grain (Highlights) / `Grain_Highlights` | Double | 0 | |
| Grain Tone Fading / `Grain_Tone_Fading` | Double | 2 | |
| Grain Scale / `Grain_Scale` | Double | 0 | |
| Grain Type / `Grain_Type` | Choice | Gaussian | **Gaussian**<br>**Uniform**<br>**Salt and Pepper**<br>**Poisson** |
| Local Contrast / `Local_Contrast` | Double | 0 | |
| Radius / `Radius` | Integer | 16 | |
| Contrast Smoothness / `Contrast_Smoothness` | Double | 4 | |
| Pseudo-Gray Dithering / `PseudoGray_Dithering` | Integer | 0 | |
| Use Maximum Tones / `Use_Maximum_Tones` | Boolean | Off | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 213 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.27 G'MIC Blend Average All node

*This documentation is for version 1.0 of G'MIC Blend Average All (eu.gmic.BlendAverageAll).*

### Description

Note: This filter takes multiple layers as input and average them. Set the Input layers option to handle multiple input layers.

Author: David Tschumperle. Latest Update: 2013/11/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorspace / `Colorspace` | Choice | sRGB | **sRGB**<br>**Linear RGB**<br>**Lab** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.28 G'MIC Blend Edges node

*This documentation is for version 1.0 of G'MIC Blend Edges (eu.gmic.BlendEdges).*

### Description

Note: This filter needs two layers to work properly. Set the Input layers option to handle multiple input layers.

Author: David Tschumperle. Latest Update: 2013/21/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Opacity / `Opacity` | Double | 1 | |
| Smoothness / `Smoothness` | Double | 0.8 | |
| Revert Layers / `Revert_Layers` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.29 G'MIC Blend Fade node

*This documentation is for version 1.0 of G'MIC Blend Fade (eu.gmic.BlendFade).*

#### Description

The parameters below are used in most presets.

The formula below is used for the Custom preset.

Note: This filter needs two layers to work properly. Set the Input layers option to handle multiple input layers.

Author: David Tschumperle. Latest Update: 2013/21/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset / `Preset` | Choice | Linear | **Custom**<br>**Linear**<br>**Circular**<br>**Wave**<br>**Keftales** |
| Offset / `Offset` | Double | 0 | |
| Thinness / `Thinness` | Double | 0 | |
| Sharpness / `Sharpness` | Double | 5 | |
| Sharpest / `Sharpest` | Boolean | Off | |
| Revert Layers / `Revert_Layers` | Boolean | Off | |
| Colorspace / `Colorspace` | Choice | sRGB | **sRGB**<br>**Linear RGB**<br>**Lab** |

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Table 216 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| 1st Parameter / `p1st_Parameter` | Double | 0 | |
| 2nd Parameter / `p2nd_Parameter` | Double | 0 | |
| 3rd Parameter / `p3rd_Parameter` | Double | 0 | |
| Formula / `Formula` | String | cos(4*pi*x/w) * sin(4*pi*y/h) | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.30 G'MIC Blend Median node

*This documentation is for version 1.0 of G'MIC Blend Median (eu.gmic.BlendMedian).*

#### Description

Note: This filter needs at least two layers to work properly. Set the Input layers option to handle multiple input layers.

Authors: David Tschumperle and Iain Fergusson. Latest Update: 2014/16/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorspace / `Colorspace` | Choice | sRGB | **sRGB**<br>**Linear RGB**<br>**Lab** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.31 G'MIC Blend Seamless node

*This documentation is for version 1.0 of G'MIC Blend Seamless (eu.gmic.BlendSeamless).*

#### Description

Note: This filter needs at least two layers to work properly. Set the Input layers option to handle multiple input layers.

Click here for a detailed description of this filter.: http://gimpchat.com/viewtopic.php?f=28&t=10204

- Video tutorial 1: http://www.youtube.com/watch?v=Nu-S1HmOCgE
- Video tutorial 2: http://www.youtube.com/watch?v=zsHgQY6025I
- Video tutorial 3: http://www.youtube.com/watch?v=2e6FikWMkaQ

Author: David Tschumperle. Latest Update: 2014/04/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mixed Mode / `Mixed_Mode` | Boolean | Off | |
| Inner Fading / `Inner_Fading` | Double | 0 | |
| Outer Fading / `Outer_Fading` | Double | 25 | |
| Colorspace / `Colorspace` | Choice | sRGB | **sRGB**<br>**Linear RGB**<br>**Lab** |
| Output as Separate Layers / `Output_as_Separate_Layers` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 218 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.32 G'MIC Blend Standard node

*This documentation is for version 1.0 of G'MIC Blend Standard (eu.gmic.BlendStandard).*

### Description

Note: In custom formulas, a and b respectively stand for the values of the base layer and the blend layer, and are defined in value range [0,1].

Note: This filter needs at least two layers to work properly. Do not forget to set the Input layers option below to handle multiple input layers.

Reference page for G'MIC blending modes: https://github.com/dtschump/gmic-community/wiki/Blending-modes

Author: David Tschumperle. Latest Update: 2017/03/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

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Table 219 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parameter / script name | Type | Default | Function |
| Mode / `Mode` | Choice | Custom formula | **Add**<br>**Alpha**<br>**And**<br>**Average**<br>**Blue**<br>**Burn**<br>**Custom formula**<br>**Darken**<br>**Difference**<br>**Divide**<br>**Dodge**<br>**Edges**<br>**Exclusion**<br>**Freeze**<br>**Grain Extract**<br>**Grain Merge**<br>**Green**<br>**Hard Light**<br>**Hard Mix**<br>**Hue**<br>**Interpolation**<br>**Lighten**<br>**Lightness**<br>**Linear Burn**<br>**Linear Light**<br>**Luminance**<br>**Multiply**<br>**Negation**<br>**Or**<br>**Overlay**<br>**Pin Light**<br>**Red**<br>**Reflect**<br>**Saturation**<br>**Shape Area Max**<br>**Shape Area Max0**<br>**Shape Area Min**<br>**Shape Area Min0**<br>**Shape Average**<br>**Shape Average0**<br>**Shape Median**<br>**Shape Median0**<br>**Shape Min**<br>**Shape Min0**<br>**Shape Max**<br>**Shape Max0**<br>**Soft Burn**<br>**Soft Dodge**<br>**Soft Light**<br>**Screen** |

Table 219 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Process As / `Process_As` | Choice | Two-by-Two | **Two-by-Two**<br>**Upper Layer is the Top Layer for All Blends**<br>**Lower Layer is the Bottom Layer for All Blends** |
| Opacity (%) / `Opacity_` | Double | 100 | |
| Preview All Outputs / `Preview_All_Outputs` | Boolean | On | |
| Custom Formula / `Custom_Formula` | String | 1/2 - 1/4*cos(pi*a) - 1/4*cos(pi*b) | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 219 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.33 G'MIC Blur Angular node

*This documentation is for version 1.0 of G'MIC Blur Angular (eu.gmic.BlurAngular).*

#### Description

Author: David Tschumperle. Latest Update: 2015/16/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude (%) / `Amplitude_` | Double | 2 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Sharpness / `Sharpness` | Double | 0 | |
| Preview Guides / `Preview_Guides` | Boolean | On | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | Linear RGB [All] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 220 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.34 G'MIC Blur Bloom node

*This documentation is for version 1.0 of G'MIC Blur Bloom (eu.gmic.BlurBloom).*

#### Description

Parameter Angle is only active when Anisotropy>0

Author: David Tschumperle. Latest Update: 2015/03/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 1 | |
| Ratio / `Ratio` | Double | 2 | |
| Iterations / `Iterations` | Integer | 5 | |
| Operator / `Operator` | Choice | Add | **Add**<br>**Max**<br>**Min** |
| Kernel / `Kernel` | Choice | Quasi-Gaussian | **Quasi-Gaussian**<br>**Gaussian**<br>**Box**<br>**Triangle**<br>**Quadratic** |
| Normalize Scales / `Normalize_Scales` | Boolean | Off | |
| Anisotropy / `Anisotropy` | Double | 0 | |
| Angle / `Angle` | Double | 0 | |

continues on next page

Table 221 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | Linear RGB [All] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 221 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 221 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.35 G'MIC Blur Depth-of-Field node

*This documentation is for version 1.0 of G'MIC Blur Depth-of-Field (eu.gmic.BlurDepthofField).*

#### Description

Gaussian depth-of-field:

User-defined depth-of-field:

You can specify your own depth-of-field image, as a bottom layer image whose luminance encodes the depth for each pixel. Don't forget to modify the Input layers combo-box to make this layer active for the filter.

Author: David Tschumperle. Latest Update: 2014/25/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Blur Amplitude / `Blur_Amplitude` | Double | 3 | |
| Blur Precision / `Blur_Precision` | Integer | 16 | |
| Depth-of-Field Type / `DepthofField_Type` | Choice | Gaussian | **Gaussian**<br>**User-Defined (Bottom Layer)** |

continues on next page

Table 222 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Invert Blur / `Invert_Blur` | Boolean | Off | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| First Radius / `First_Radius` | Double | 30 | |
| Second Radius / `Second_Radius` | Double | 30 | |
| Angle / `Angle` | Double | 0 | |
| Sharpness / `Sharpness` | Double | 1 | |
| Preview Guides / `Preview_Guides` | Boolean | On | |
| Gamma / `Gamma` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 222 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.36 G'MIC Blur Gaussian node

*This documentation is for version 1.0 of G'MIC Blur Gaussian (eu.gmic.BlurGaussian).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| XY-Amplitude / `XYAmplitude` | Double | 3 | |
| X-Amplitude / `XAmplitude` | Double | 0 | |
| Y-Amplitude / `YAmplitude` | Double | 0 | |
| Boundary / `Boundary` | Choice | Nearest | **Black**<br>**Nearest** |

continues on next page

Table 223 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 223 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 223 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.37 G'MIC Blur Glow node

*This documentation is for version 1.0 of G'MIC Blur Glow (eu.gmic.BlurGlow).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 6 | |

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Table 224 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | Linear RGB [All] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 224 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 224 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.38 G'MIC Blur Linear node

*This documentation is for version 1.0 of G'MIC Blur Linear (eu.gmic.BlurLinear).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Tangent Radius / `Tangent_Radius` | Double | 10 | |
| Orthogonal Radius / `Orthogonal_Radius` | Double | 0.5 | |
| Angle / `Angle` | Double | 0 | |
| Sharpness / `Sharpness` | Double | 0 | |
| Boundary / `Boundary` | Choice | Nearest | **Black**<br>**Nearest** |

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Table 225 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | Linear RGB [All] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 225 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 225 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.39 G'MIC Blur Radial node

*This documentation is for version 1.0 of G'MIC Blur Radial (eu.gmic.BlurRadial).*

#### Description

Author: David Tschumperle. Latest Update: 2015/16/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 3 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Sharpness / `Sharpness` | Double | 0 | |
| Preview Guides / `Preview_Guides` | Boolean | On | |

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Table 226 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | Linear RGB [All] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 226 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.40 G'MIC Bokeh node

*This documentation is for version 1.0 of G'MIC Bokeh (eu.gmic.Bokeh).*

#### Description

Starting parameters:

Ending parameters:

Author: David Tschumperle. Latest Update: 2015/02/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Scales / `Number_of_Scales` | Integer | 3 | |
| Shape / `Shape` | Choice | Circular | **Triangle**<br>**Square**<br>**Diamond**<br>**Pentagon**<br>**Hexagon**<br>**Octogon**<br>**Decagon**<br>**Star**<br>**Circular** |
| Random Seed / `Random_Seed` | Integer | 0 | |
| Density / `Density` | Integer | 30 | |
| Radius (%) / `Radius_` | Double | 8 | |
| Outline (%) / `Outline_` | Double | 4 | |
| Inner Shade / `Inner_Shade` | Double | 0.3 | |
| Smoothness / `Smoothness` | Double | 0.2 | |

continues on next page

Table 227 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color / `Color` | Color | r: 0.823529 g: 0.823529 b: 0.313726 a: 0.313726 | |
| Color Dispersion / `Color_Dispersion` | Double | 0.7 | |
| Density_2 / `Density_2` | Integer | 30 | |
| Radius (%)_2 / `Radius__2` | Double | 20 | |
| Outline (%)_2 / `Outline__2` | Double | 20 | |
| Inner Shade_2 / `Inner_Shade_2` | Double | 1 | |
| Smoothness_2 / `Smoothness_2` | Double | 2 | |
| Color_2 / `Color_2` | Color | r: 0.666667 g: 0.509804 b: 0.0784314 a: 0.0784314 | |
| Color Dispersion_2 / `Color_Dispersion_2` | Double | 0.15 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5 y: 0.5 | |

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Table 227 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.41 G'MIC Boost Chromaticity node

*This documentation is for version 1.0 of G'MIC Boost Chromaticity (eu.gmic.BoostChromaticity).*

#### Description

Author: David Tschumperle. Latest Update: 2016/19/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude (%) / `Amplitude_` | Double | 50 | |
| Color Space / `Color_Space` | Choice | YCbCr (Distinct) | **YCbCr (Distinct)**<br>**YCbCr (Mixed)**<br>**Lab (Distinct)**<br>**Lab (Mixed)** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 228 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.42 G'MIC Boost-Fade node

*This documentation is for version 1.0 of G'MIC Boost-Fade (eu.gmic.BoostFade).*

### Description

Author: David Tschumperle. Latest Update: 2018/11/26.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 5 | |
| Chromaticity From / `Chromaticity_From` | Choice | YCbCr | **YCbCr**<br>**Lab** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 229 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.43 G'MIC Box Fitting node

*This documentation is for version 1.0 of G'MIC Box Fitting (eu.gmic.BoxFitting).*

#### Description

Note: Set Maximal size to 0 to allow any size for the squares.

Note: This filter has been highly inspired by the work of Jared Tarbell, described on the page:

http://www.complexification.net/gallery/machines/boxFittingImg/

Author: David Tschumperle. Latest Update: 2013/06/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Minimal Size / `Minimal_Size` | Integer | 3 | |
| Maximal Size / `Maximal_Size` | Integer | 0 | |
| Initial Density / `Initial_Density` | Double | 0.1 | |
| Transparency / `Transparency` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 230 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.44 G'MIC Brushify node

*This documentation is for version 1.0 of G'MIC Brushify (eu.gmic.Brushify).*

#### Description

Brush parameters:

Painting parameters:

Author: David Tschumperle. Latest Update: 2016/22/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Shape / Shape | Choice | Ellipse | **Bottom layer**<br>**Top layer**<br>**Rectangle**<br>**Diamond**<br>**Pentagon**<br>**Hexagon**<br>**Octogon**<br>**Ellipse**<br>**Gaussian**<br>**Star**<br>**Heart** |
| Ratio / Ratio | Double | 0.25 | |
| Number of Sizes / Number_of_Sizes | Integer | 4 | |
| Maximal Size / Maximal_Size | Integer | 64 | |
| Minimal Size (% / Minimal_Size_ | Double | 25 | |
| Number of Orientations / Number_of_Orientations | Integer | 12 | |
| Fuzzyness / Fuzzyness | Double | 0 | |
| Smoothness / Smoothness | Double | 2 | |
| Light Type / Light_Type | Choice | Full | **None**<br>**Flat**<br>**Darken**<br>**Lighten**<br>**Full** |
| Light Strength / Light_Strength | Double | 0.2 | |
| Opacity / Opacity | Double | 0.5 | |
| Density (%) / Density_ | Double | 30 | |
| Contour Coherence / Contour_Coherence | Double | 1 | |
| Orientation Coherence / Orientation_Coherence | Double | 1 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Gradient Smoothness / `Gradient_Smoothness` | Double | 1 | |
| Structure Smoothness / `Structure_Smoothness` | Double | 5 | |
| Primary Angle / `Primary_Angle` | Double | 0 | |
| Angle Dispersion / `Angle_Dispersion` | Double | 0.2 | |
| Preview Brush / `Preview_Brush` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.45 G'MIC Burn node

*This documentation is for version 1.0 of G'MIC Burn (eu.gmic.Burn).*

#### Description

Author: David Tschumperle. Latest Update: 2012/24/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 0.5 | |
| Scale / `Scale` | Double | 30 | |
| Smoothness / `Smoothness` | Double | 1 | |

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Table 232 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 232 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 232 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.46 G'MIC CLUT from After Before Layers node

*This documentation is for version 1.0 of G'MIC CLUT from After Before Layers (eu.gmic.CLUTfromAfterBeforeLayers).*

#### Description

What is this filter for?

This filter requires at least two input layers to work properly.

It assumes you have an input top layer A and a base layer B such that A and B both represent the same image but with only color variations (typically A has been obtained from B using the color curves tool).

This filter is then able to estimate and outputs a color HaldCLUT H so that applying H on the base layer B gives back A.

This is useful when you have a color transformation between two images, that you want to recover and re-apply on a bunch of other images.

Author: David Tschumperle. Latest Update: 2019/08/27.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Mode / `Output_Mode` | Choice | Replace Layer with CLUT | **Replace Layer with CLUT**<br>**Insert New CLUT Layer**<br>**Save CLUT as .cube or .png File** |
| Output CLUT Resolution / `Output_CLUT_Resolution` | Choice | 4 | **4**<br>**16**<br>**25**<br>**36**<br>**49**<br>**64**<br>**81**<br>**100**<br>**121**<br>**144**<br>**169**<br>**225**<br>**256** |
| Output Folder / `Output_Folder` | N/A | | |
| Output Filename / `Output_Filename` | String | output.cube | |
| Influence of Color Samples (%) / `Influence_of_Color_Samples_` | Double | 50 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.47 G'MIC Camouflage node

*This documentation is for version 1.0 of G'MIC Camouflage (eu.gmic.Camouflage).*

### Description

Author: David Tschumperle. Latest Update: 2016/26/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scale / `Scale` | Integer | 9 | |
| Levels / `Levels` | Integer | 12 | |
| Coherence / `Coherence` | Double | 100 | |
| Color 1 / `Color_1` | Color | r: 0.117647 g: 0.180392 b: 0.129412 a: 0.129412 | |
| Color 2 / `Color_2` | Color | r: 0.294118 g: 0.352941 b: 0.254902 a: 0.254902 | |
| Color 3 / `Color_3` | Color | r: 0.701961 g: 0.741176 b: 0.458824 a: 0.458824 | |
| Color 4 / `Color_4` | Color | r: 1 g: 0.964706 b: 0.619608 a: 0.619608 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.48 G'MIC Canvas node

*This documentation is for version 1.0 of G'MIC Canvas (eu.gmic.Canvas).*

#### Description

First direction :

Second direction :

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 70 | |
| Angle / `Angle` | Double | 45 | |
| Sharpness / `Sharpness` | Double | 400 | |
| Activate Second Direction / `Activate_Second_Direction` | Boolean | On | |
| Amplitude_2 / `Amplitude_2` | Double | 70 | |
| Angle_2 / `Angle_2` | Double | 135 | |
| Sharpness_2 / `Sharpness_2` | Double | 400 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.49 G'MIC Canvas Texture node

*This documentation is for version 1.0 of G'MIC Canvas Texture (eu.gmic.CanvasTexture).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 20 | |
| Fibrousness / `Fibrousness` | Double | 3 | |
| Emboss / `Emboss` | Double | 0.6 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.50 G'MIC Cartesian Transform node

*This documentation is for version 1.0 of G'MIC Cartesian Transform (eu.gmic.CartesianTransform).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Warping / `XWarping` | String | (w+h)/20 * cos(y*20/h) | |
| Y-Warping / `YWarping` | String | (w+h)/20 * sin(x*20/w) | |
| Relative Warping / `Relative_Warping` | Boolean | On | |
| Interpolation / `Interpolation` | Choice | Linear | **Nearest Neighbor**<br>**Linear** |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.51 G'MIC Cartoon node

*This documentation is for version 1.0 of G'MIC Cartoon (eu.gmic.Cartoon).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 3 | |
| Sharpening / `Sharpening` | Double | 200 | |
| Edge Threshold / `Edge_Threshold` | Double | 20 | |
| Edge Thickness / `Edge_Thickness` | Double | 0.25 | |
| Color Strength / `Color_Strength` | Double | 1.5 | |
| Color Quantization / `Color_Quantization` | Integer | 8 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.52 G'MIC Channel Processing node

*This documentation is for version 1.0 of G'MIC Channel Processing (eu.gmic.ChannelProcessing).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Cut & Normalize**<br>**Normalize**<br>**Threshold** |
| Low Value / `Low_Value` | Double | 0 | |
| High Value / `High_Value` | Double | 100 | |
| Quantization / `Quantization` | Integer | 256 | |
| Equalization / `Equalization` | Boolean | Off | |
| Negation / `Negation` | Boolean | Off | |
| Tones Range / `Tones_Range` | Choice | All tones | **All tones**<br>**Shadows**<br>**Mid-Tones**<br>**Highlights** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Tones Smoothness / `Tones_Smoothness` | Double | 2 | |
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 239 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.53 G'MIC Channels to Layers node

*This documentation is for version 1.0 of G'MIC Channels to Layers (eu.gmic.ChannelstoLayers).*

#### Description

Author: David Tschumperle. Latest Update: 2015/15/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorspace / `Colorspace` | Choice | RGB | **RGB**<br>**CMY**<br>**HSV** |

continues on next page

Table 240 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.54 G'MIC Charcoal node

*This documentation is for version 1.0 of G'MIC Charcoal (eu.gmic.Charcoal).*

### Description

Author: David Tschumperle. Latest Update: 2011/17/03.

Inspired from the Charcoal script by micomicon :

http://registry.gimp.org/node/25078

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Granularity / `Granularity` | Integer | 65 | |
| Lowlights Crossover Point / `Lowlights_Crossover_Point` | Integer | 70 | |
| Highlights Crossover Point / `Highlights_Crossover_Point` | Integer | 170 | |
| Boost Contrast / `Boost_Contrast` | Boolean | Off | |
| Resize Image for Optimum Effect / `Resize_Image_for_Optimum_Effect` | Boolean | On | |
| Add Chalk Highlights / `Add_Chalk_Highlights` | Boolean | Off | |
| Minimal Highlights / `Minimal_Highlights` | Integer | 50 | |
| Maximal Highlights / `Maximal_Highlights` | Integer | 70 | |
| Background Color / `Background_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Foreground Color / `Foreground_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Invert Background / Foreground / `Invert_Background__Foreground` | Boolean | Off | |

continues on next page

Table 241 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 241 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.55 G'MIC Chessboard node

*This documentation is for version 1.0 of G'MIC Chessboard (eu.gmic.Chessboard).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| First Size / `First_Size` | Integer | 64 | |
| Second Size / `Second_Size` | Integer | 64 | |
| First Offset / `First_Offset` | Integer | 0 | |
| Second Offset / `Second_Offset` | Integer | 0 | |
| Angle / `Angle` | Double | 0 | |
| Opacity / `Opacity` | Double | 0.5 | |
| First Color / `First_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Second Color / `Second_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |

continues on next page

Table 242 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 242 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.56 G'MIC Chromatic Aberrations node

*This documentation is for version 1.0 of G'MIC Chromatic Aberrations (eu.gmic.ChromaticAberrations).*

### Description

Author: David Tschumperle. Latest Update: 2015/05/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Primary Color / `Primary_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| X-Shift / `XShift` | Double | 2 | |
| Y-Shift / `YShift` | Double | 2 | |
| Secondary Color / `Secondary_Color` | Color | r: 0 g: 1 b: 0 a: 0 | |
| X-Shift (px) / `XShift_px` | Double | 0 | |
| Y-Shift (px) / `YShift_px` | Double | 0 | |

continues on next page

Table 243 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 243 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.57 G'MIC Circle Abstraction node

*This documentation is for version 1.0 of G'MIC Circle Abstraction (eu.gmic.CircleAbstraction).*

### Description

Author: David Tschumperle. Latest Update: 2014/16/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Colors / `Number_of_Colors` | Integer | 8 | |
| Density / `Density` | Integer | 5 | |
| Opacity / `Opacity` | Double | 0.8 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Filled Circles / `Filled_Circles` | Boolean | On | |
| Fill Transparent Holes / `Fill_Transparent_Holes` | Boolean | On | |
| Normalize Colors / `Normalize_Colors` | Boolean | On | |

continues on next page

Table 244 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 244 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.58 G'MIC Circle Art node

*This documentation is for version 1.0 of G'MIC Circle Art (eu.gmic.CircleArt).*

### Description

Lissajous parameters:

Author: David Tschumperle. Latest Update: 2014/22/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Type / `Type` | Choice | Lissajous spiral | **Random**<br>**Lissajous spiral** |
| Density / `Density` | Double | 15 | |
| Radius / `Radius` | Double | 0.5 | |
| Modulo / `Modulo` | Integer | 8 | |
| Anti-Aliasing / `AntiAliasing` | Boolean | On | |
| Random Colors / `Random_Colors` | Boolean | On | |

continues on next page

Table 245 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Curve Length / `Curve_Length` | Double | 15 | |
| Curve Angle / `Curve_Angle` | Double | 0 | |
| Minimal Radius / `Minimal_Radius` | Double | 0 | |
| Maximal Radius / `Maximal_Radius` | Double | 0.5 | |
| X-Dispersion / `XDispersion` | Double | 1 | |
| Y-Dispersion / `YDispersion` | Double | 1 | |
| X-Factor / `XFactor` | Integer | 1 | |
| Y-Factor / `YFactor` | Integer | 1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 245 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.59 G'MIC Circle Transform node

*This documentation is for version 1.0 of G'MIC Circle Transform (eu.gmic.CircleTransform).*

### Description

Author: David Tschumperle. Latest Update: 2013/08/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Radius / `Radius` | Double | x: 0.75<br>y: 0.5 | |
| X-Scale / `XScale` | Double | -2 | |
| Y-Scale / `YScale` | Double | -2 | |
| Symmetry / `Symmetry` | Choice | None | **None**<br>**Inside**<br>**Outside** |
| Interpolation / `Interpolation` | Choice | Linear | **Nearest Neighbor**<br>**Linear** |

continues on next page

Table 246 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Preview Reference Circle / `Preview_Reference_Circle` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.60 G'MIC Color Balance node

*This documentation is for version 1.0 of G'MIC Color Balance (eu.gmic.ColorBalance).*

### Description

Author: David Tschumperle. Latest Update: 2011/01/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Neutral Color / `Neutral_Color` | Color | r: 0.501961 g: 0.501961 b: 0.501961 a: 0.501961 | |
| Stretch Colors / `Stretch_Colors` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5 y: 0.5 | |

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Table 247 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.61 G'MIC Color Blindness node

*This documentation is for version 1.0 of G'MIC Color Blindness (eu.gmic.ColorBlindness).*

#### Description

Note: This filter simulates different types of colorblindness vision.

Author: David Tschumperle. Latest Update: 2016/20/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Blindness Type / `Blindness_Type` | Choice | Protanopia | **Protanopia**<br>**Protanomaly**<br>**Deuteranopia**<br>**Deuteranomaly**<br>**Tritanopia**<br>**Tritanomaly**<br>**Achromatopsia**<br>**Achromatomaly** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 248 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.62 G'MIC Color Presets node

*This documentation is for version 1.0 of G'MIC Color Presets (eu.gmic.ColorPresets).*

### Description

Note: The color LUTs proposed in this category comes from:

Abigail Gonzalez - FreshLUTs

Alex Jordan - FreshLUTs

Free Cinematic LUTs

30 Cinematic Travel Color

RawTherapee Film Simulation

Eric Ellerbrock - FreshLUTs

FilterGrade Free Cinematic LUTs Pack

J.T. Semple - FreshLUTs

Kyler Holland 10 Free CLUTs

Lutify.Me Free LUTs

Moviz LUTs

Ohad Peretz - FreshLUTs

ON1 Free Photography LUTs

PictureFX - A Free HaldCLUT Set

PIXLS.US Contributors

Purple11 - Free LUTs

RocketStock 35 Free LUTs for Color Grading

Shamoon Abbasi - FreshLUTs

SmallHD Free Movie Look Pack

Author: David Tschumperle. Latest Update: 2019/10/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| LUTs Pack / LUTs_Pack | Choice | PIXLS.US (31) | **Abigail Gonzalez (21)**<br>**Alex Jordan (81)**<br>**Cinematic (8)**<br>**Cinematic Travel (29)**<br>**Creative Pack (33)**<br>**Eric Ellerbrock (14)**<br>**FilterGrade Cinematic (8)**<br>**J.T. Semple (14)**<br>**Kyler Holland (10)**<br>**Lutify.Me (7)**<br>**Moviz (48)**<br>**Ohad Peretz (7)**<br>**ON1 Photography (90)**<br>**PictureFX (19)**<br>**PIXLS.US (31)**<br>**Purple11 (12)**<br>**RocketStock (35)**<br>**Shamoon Abbasi (25)**<br>**SmallHD Movie Look (7)**<br>**Others (69)** |

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Table 249 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset / `Preset` | Choice | None | **All [Collage]**<br>**None**<br>**Blade Runner**<br>**Blue House**<br>**Blue Ice**<br>**Caribe**<br>**Cinema**<br>**Cinema 2**<br>**Cinema 3**<br>**Cinema 4**<br>**Cinema 5**<br>**Cinema Noir**<br>**Cinematic for Flog**<br>**Day4Nite**<br>**Eterna for Flog**<br>**Filmic**<br>**Fuji HDR**<br>**Golden Gate**<br>**Matrix**<br>**Monochrome 1**<br>**Monochrome 2**<br>**Old West**<br>**Science Fiction** |

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Table 249 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_2 / `Preset_2` | Choice | None | **All [Collage]**<br>**None**<br>**Action Magenta 01**<br>**Action Red 01**<br>**Adventure 1453**<br>**Aggressive Highlights Recovery 5**<br>**Bleech Bypass Green**<br>**Bleech Bypass Yellow 01**<br>**Blue Dark**<br>**Blue Shadows 01**<br>**Bright Green 01**<br>**Brownish**<br>**Colorful 0209**<br>**Conflict 01**<br>**Contrast with Highlights Protection**<br>**Contrasty Afternoon**<br>**Contrasty Green**<br>**Cross Process CP 130**<br>**Cross Process CP 14**<br>**Cross Process CP 15**<br>**Cross Process CP 16**<br>**Cross Process CP 18**<br>**Cross Process CP 3**<br>**Cross Process CP 4**<br>**Cross Process CP 6**<br>**Dark Green 02**<br>**Dark Green 1**<br>**Dark Place 01**<br>**Dream 1**<br>**Dream 85**<br>**Faded Retro 01**<br>**Faded Retro 02**<br>**Film 0987**<br>**Film 9879**<br>**Film Highlight Contrast**<br>**Flat 30**<br>**Green 2025**<br>**Green Action**<br>**Green Afternoon**<br>**Green Conflict**<br>**Green Day 01**<br>**Green Day 02**<br>**Green G09**<br>**Green Indoor**<br>**Green Light**<br>**Harsh Day**<br>**Harsh Sunset**<br>**Highlights Protection**<br>**Indoor Blue**<br>**Low Contrast Blue**<br>**Low Key 01**<br>**Magenta Day** |

Table 249 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_3 / `Preset_3` | Choice | None | **All [Collage]**<br>**None**<br>**Deep**<br>**Dimension**<br>**Enchanted**<br>**Flavin**<br>**Frosted**<br>**Shine**<br>**Ultra Water**<br>**Wipe** |
| Preset_4 / `Preset_4` | Choice | None | **All [Collage]**<br>**None**<br>**Blue Cold Fade**<br>**Bright Teal Orange**<br>**Bright Warm**<br>**Clear Teal Fade**<br>**Cold Clear Blue**<br>**Cold Clear Blue 1**<br>**Deep Blue**<br>**Deep Dark Warm**<br>**Deep High Contrast**<br>**Deep Teal Fade**<br>**Deep Warm Fade**<br>**Faded Green**<br>**Greenish Contrasty**<br>**Greenish Fade**<br>**Greenish Fade 1**<br>**Hard Teal Orange**<br>**Neutral Teal Orange**<br>**Neutral Warm Fade**<br>**Smooth Clear**<br>**Smooth Green Orange**<br>**Smooth Teal Orange**<br>**Teal Fade**<br>**Very Warm Greenish**<br>**Warm Dark Contrasty**<br>**Warm Fade**<br>**Warm Fade 1**<br>**Warm Neutral**<br>**Warm Sunset Red**<br>**Warm Teal** |

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Table 249 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_5 / `Preset_5` | Choice | None | **All [Collage]**<br>**None**<br>**Anime**<br>**Bleach Bypass 1**<br>**Bleach Bypass 2**<br>**Bleach Bypass 3**<br>**Bleach Bypass 4**<br>**Candle Light**<br>**Color Negative**<br>**Crisp Warm**<br>**Crip Winter**<br>**Drop Blues**<br>**Edgy Ember**<br>**Fall Colors**<br>**Foggy Night**<br>**Futuristic Bleak 1**<br>**Futuristic Bleak 2**<br>**Futuristic Bleak 3**<br>**Futuristic Bleak 4**<br>**Horror Blue**<br>**Late Sunset**<br>**Moonlight**<br>**Night From Day**<br>**Red Blue Yellow**<br>**Smokey**<br>**Soft Warming**<br>**Teal Magenta Gold**<br>**Teal Orange**<br>**Teal Orange 1**<br>**Teal Orange 2**<br>**Teal Orange 3**<br>**Tension Green 1**<br>**Tension Green 2**<br>**Tension Green 3**<br>**Tension Green 4** |

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Table 249 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_6 / `Preset_6` | Choice | None | **All [Collage]**<br>**None**<br>**Avalanche**<br>**Black Star**<br>**Helios**<br>**Hydracore**<br>**Hypnosis**<br>**Killstreak**<br>**Nemesis**<br>**Night Blade 4**<br>**Paladin**<br>**Seringe 4**<br>**Serpent**<br>**Terra 4**<br>**Victory**<br>**Yellowstone** |
| Preset_7 / `Preset_7` | Choice | None | **All [Collage]**<br>**None**<br>**Cine Basic**<br>**Cine Bright**<br>**Cine Cold**<br>**Cine Drama**<br>**Cine Teal Orange 1**<br>**Cine Teal Orange 2**<br>**Cine Vibrant**<br>**Cine Warm** |

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Table 249 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_8 / `Preset_8` | Choice | None | **All [Collage]**<br>**None**<br>**Bright Green**<br>**Crisp Romance**<br>**Crushin**<br>**Frosted Beach Picnic**<br>**Just Peachy**<br>**Late Afternoon Wanderlust**<br>**Lush Green Summer**<br>**Magenta Coffee**<br>**Minimalist Caffeination**<br>**Mystic Purple Sunset**<br>**Nostalgia Honey**<br>**Spring Morning**<br>**Toasted Garden**<br>**Winter Lighthouse** |
| Preset_9 / `Preset_9` | Choice | None | **All [Collage]**<br>**None**<br>**KH 1**<br>**KH 2**<br>**KH 3**<br>**KH 4**<br>**KH 5**<br>**KH 6**<br>**KH 7**<br>**KH 8**<br>**KH 9**<br>**KH 10** |
| Preset_10 / `Preset_10` | Choice | None | **All [Collage]**<br>**None**<br>**Hackmanite**<br>**Herderite**<br>**Heulandite**<br>**Hiddenite**<br>**Hilutite**<br>**Howlite**<br>**Hypersthene** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_11 / `Preset_11` | Choice | None | **All [Collage]**<br>**None**<br>**Moviz 1**<br>**Moviz 2**<br>**Moviz 3**<br>**Moviz 4**<br>**Moviz 5**<br>**Moviz 6**<br>**Moviz 7**<br>**Moviz 8**<br>**Moviz 9**<br>**Moviz 10**<br>**Moviz 11**<br>**Moviz 12**<br>**Moviz 13**<br>**Moviz 14**<br>**Moviz 15**<br>**Moviz 16**<br>**Moviz 17**<br>**Moviz 18**<br>**Moviz 19**<br>**Moviz 20**<br>**Moviz 21**<br>**Moviz 22**<br>**Moviz 23**<br>**Moviz 24**<br>**Moviz 25**<br>**Moviz 26**<br>**Moviz 27**<br>**Moviz 28**<br>**Moviz 29**<br>**Moviz 30**<br>**Moviz 31**<br>**Moviz 32**<br>**Moviz 33**<br>**Moviz 34**<br>**Moviz 35**<br>**Moviz 36**<br>**Moviz 37**<br>**Moviz 38**<br>**Moviz 39**<br>**Moviz 40**<br>**Moviz 41**<br>**Moviz 42**<br>**Moviz 43**<br>**Moviz 44**<br>**Moviz 45**<br>**Moviz 46**<br>**Moviz 47**<br>**Moviz 48** |



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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_12 / `Preset_12` | Choice | None | **All [Collage]**<br>**None**<br>**Cold Simplicity 2**<br>**D and O 1**<br>**Retro Summer 3**<br>**Subtle Yellow**<br>**Teal Moonlight**<br>**True Colors 8**<br>**Vintage Warmth 1** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_13 / `Preset_13` | Choice | None | **All [Collage]**<br>**None**<br>**2-Strip Process**<br>**Aqua**<br>**Aqua and Orange Dark**<br>**Berlin Sky**<br>**Blues**<br>**Black & White-1**<br>**Black & White-2**<br>**Black & White-3**<br>**Black & White-4**<br>**Black & White-5**<br>**Black & White-6**<br>**Black & White-7**<br>**Black & White-8**<br>**Black & White-9**<br>**Black & White-10**<br>**Chrome 01**<br>**Cinematic-1**<br>**Cinematic-2**<br>**Cinematic-3**<br>**Cinematic-4**<br>**Cinematic-5**<br>**Cinematic-6**<br>**Cinematic-7**<br>**Cinematic-8**<br>**Cinematic-9**<br>**Cinematic-10**<br>**Classic Teal and Orange**<br>**Earth Tone Boost**<br>**Fade to Green**<br>**Film Print 01**<br>**Film Print 02**<br>**French Comedy**<br>**Green Blues**<br>**Green Yellow**<br>**Landscape-1**<br>**Landscape-2**<br>**Landscape-3**<br>**Landscape-4**<br>**Landscape-5**<br>**Landscape-6**<br>**Landscape-7**<br>**Landscape-8**<br>**Landscape-9**<br>**Landscape-10**<br>**Lifestyle & Commercial-1**<br>**Lifestyle & Commercial-2**<br>**Lifestyle & Commercial-3**<br>**Lifestyle & Commercial-4**<br>**Lifestyle & Commercial-5**<br>**Lifestyle & Commercial-6** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_14 / `Preset_14` | Choice | None | **All [Collage]**<br>**None**<br>**AnalogFX - Anno 1870 Color**<br>**AnalogFX - Old Style I**<br>**AnalogFX - Old Style II**<br>**AnalogFX - Old Style III**<br>**AnalogFX - Sepia Color**<br>**AnalogFX - Soft Sepia I**<br>**AnalogFX - Soft Sepia II**<br>**GoldFX - Bright Spring Breeze**<br>**GoldFX - Bright Summer Heat**<br>**GoldFX - Hot Summer Heat**<br>**GoldFX - Perfect Sunset 01min**<br>**GoldFX - Perfect Sunset 05min**<br>**GoldFX - Perfect Sunset 10min**<br>**GoldFX - Spring Breeze**<br>**GoldFX - Summer Heat**<br>**TechnicalFX - Backlight Filter**<br>**ZilverFX - B&W Solarization**<br>**ZilverFX - InfraRed**<br>**ZilverFX - Vintage B&W** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_15 / `Preset_15` | Choice | None | **All [Collage]**<br>**None**<br>**Amstragram**<br>**Amstragram+**<br>**Autumn**<br>**Cinematic Lady Bird**<br>**Cinematic Mexico**<br>**Dark Blues in Sunlight**<br>**Delicatessen**<br>**Expired 69**<br>**Faded Look**<br>**Faded Print**<br>**Hypressen**<br>**Magenta Yellow**<br>**Metropolis**<br>**Modern Film**<br>**Newspaper**<br>**Night Spy**<br>**Progressen**<br>**Prussian Blue**<br>**Seventies Magazine**<br>**Street**<br>**Sweet Bubblegum**<br>**Sweet Gelatto**<br>**Taiga**<br>**Tarraco**<br>**Unknown**<br>**Uzbek Bukhara**<br>**Uzbek Marriage**<br>**Uzbek Samarcande**<br>**Velvetia**<br>**Warm Vintage**<br>**Whiter Whites** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_16 / `Preset_16` | Choice | None | **All [Collage]**<br>**None**<br>**Going for a Walk**<br>**Good Morning**<br>**Nah**<br>**Once Upon a Time**<br>**Passing By**<br>**Serenity**<br>**Smooth Sailing**<br>**Undeniable**<br>**Undeniable 2**<br>**Urban Cowboy**<br>**We'll See**<br>**You Can Do It** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_17 / `Preset_17` | Choice | None | **All [Collage]**<br>**None**<br>**Arabica 12**<br>**Ava 614**<br>**Azrael 93**<br>**Bourbon 64**<br>**Byers 11**<br>**Chemical 168**<br>**Clayton 33**<br>**Clouseau 54**<br>**Cobi 3**<br>**Contrail 35**<br>**Cubicle 99**<br>**Django 25**<br>**Domingo 145**<br>**Faded 47**<br>**Folger 50**<br>**Fusion 88**<br>**Hyla 68**<br>**Korben 214**<br>**Lenox 340**<br>**Lucky 64**<br>**McKinnon 75**<br>**Milo 5**<br>**Neon 770**<br>**Paladin 1875**<br>**Pasadena 21**<br>**Pitaya 15**<br>**Reeve 38**<br>**Remy 24**<br>**Sprocket 231**<br>**Teigen 28**<br>**Trent 18**<br>**Tweed 71**<br>**Vireo 37**<br>**Zed 32**<br>**Zeke 39** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_18 / `Preset_18` | Choice | None | **All [Collage]**<br>**None**<br>**City 7**<br>**Coffee 44**<br>**Date 39**<br>**Day for Night**<br>**Denoise Simple 40**<br>**Desert Gold 37**<br>**Directions 23**<br>**Drop Green Tint 14**<br>**Elegance 38**<br>**Golden Night Softner 43**<br>**Golden Sony 37**<br>**Green 15**<br>**Happyness 133**<br>**HLG 1**<br>**Industrial 33**<br>**Morning 6**<br>**Morroco 16**<br>**Night King 141**<br>**Rest 33**<br>**Shadow King 39**<br>**Spy 29**<br>**Thriller 2**<br>**Turkiest 42**<br>**Vintage 163**<br>**Wooden Gold 20** |
| Preset_19 / `Preset_19` | Choice | None | **All [Collage]**<br>**None**<br>**Apocalypse This Very Moment**<br>**B-Boyz 2**<br>**Bob Ford**<br>**Life Giving Tree**<br>**Moonrise**<br>**Saving Private Damon**<br>**The Matrices** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_20 / `Preset_20` | Choice | None | **All [Collage]**<br>**None**<br>**60's**<br>**60's (faded)**<br>**60's (faded alt)**<br>**Alien green**<br>**Black & White**<br>**Bleach bypass**<br>**Blue mono**<br>**Cinematic-01**<br>**Cinematic-02**<br>**Cinematic-03**<br>**Color (rich)**<br>**Faded**<br>**Faded (alt)**<br>**Faded (analog)**<br>**Faded (extreme)**<br>**Faded (vivid)**<br>**Expired (fade)**<br>**Expired (polaroid)**<br>**Extreme**<br>**Fade**<br>**Faux infrared**<br>**Golden**<br>**Golden (bright)**<br>**Golden (fade)**<br>**Golden (mono)**<br>**Golden (vibrant)**<br>**Green mono**<br>**Hong Kong**<br>**Instant-C**<br>**K-Tone Vintage Kodachrome**<br>**Light (blown)**<br>**Lomo**<br>**Mono tinted**<br>**Muted fade**<br>**Mute shift**<br>**Natural (vivid)**<br>**Nostalgic**<br>**Orange tone**<br>**Pink fade**<br>**Purple**<br>**Retro**<br>**Rotate (muted)**<br>**Rotate (vibrant)**<br>**Rotated**<br>**Rotated (crush)**<br>**Smooth crome-ish**<br>**Smooth fade**<br>**Soft fade**<br>**Solarize color**<br>**Solarized color2** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Thumbnail Size / `Thumbnail_Size` | Integer | 512 | |
| Strength (%) / `Strength_` | Double | 100 | |
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Hue (%) / `Hue_` | Double | 0 | |
| Saturation (%) / `Saturation_` | Double | 0 | |
| Normalize Colors / `Normalize_Colors` | Choice | None | **None**<br>**Pre-Normalize**<br>**Post-Normalize**<br>**Both** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.63 G'MIC Colorful Blobs node

*This documentation is for version 1.0 of G'MIC Colorful Blobs (eu.gmic.ColorfulBlobs).*

#### Description

This filter can be used to create custom palettes with given color shades. It has been inspired by Adobe's Playful Palette.

Author: David Tschumperle. Latest Update: 2018/08/26.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorspace / `Colorspace` | Choice | Linear RGB | **sRGB**<br>**Linear RGB**<br>**Lab** |
| Background Color / `Background_Color` | Color | r: 0.784314 g: 0.784314 b: 0.784314 a: 0.784314 | |
| Display Blob Controls / `Display_Blob_Controls` | Boolean | On | |
| Blob 1 / `Blob_1` | Double | x: 0.25 y: 0.25 | |
| Radius / `Radius` | Double | x: 0.5 y: 0.5 | |
| Blob 1 Color / `Blob_1_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Blob2 / `Blob2` | Double | x: 0.75 y: 0.25 | |
| Radius_2 / `Radius_2` | Double | x: 0.5 y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Blob 2 Color / `Blob_2_Color` | Color | r: 0 g: 1 b: 0 a: 0 | |
| Blob 3 / `Blob_3` | Double | x: 0.5 y: 0.75 | |
| Radius_3 / `Radius_3` | Double | x: 0.5 y: 0.5 | |
| Blob 3 Color / `Blob_3_Color` | Color | r: 0 g: 0 b: 1 a: 1 | |
| Blob 4 / `Blob_4` | Double | x: 0.05 y: 0.9 | |
| Radius_4 / `Radius_4` | Double | x: 0.5 y: 0.5 | |
| Blob 4 Color / `Blob_4_Color` | Color | r: 1 g: 1 b: 0 a: 0 | |
| Blob 5 / `Blob_5` | Double | x: 0.05 y: 0.9 | |
| Radius_5 / `Radius_5` | Double | x: 0.5 y: 0.5 | |
| Blob 5 Color / `Blob_5_Color` | Color | r: 1 g: 0 b: 1 a: 1 | |
| Blob 6 / `Blob_6` | Double | x: 0.05 y: 0.9 | |
| Radius_6 / `Radius_6` | Double | x: 0.5 y: 0.5 | |
| Blob 6 Color / `Blob_6_Color` | Color | r: 0 g: 1 b: 1 a: 1 | |
| Blob 7 / `Blob_7` | Double | x: 0.05 y: 0.9 | |
| Radius_7 / `Radius_7` | Double | x: 0.5 y: 0.5 | |
| Blob 7 Color / `Blob_7_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Blob 8 / `Blob_8` | Double | x: 0.05 y: 0.9 | |
| Radius_8 / `Radius_8` | Double | x: 0.5 y: 0.5 | |
| Blob 8 Color / `Blob_8_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Blob 9 / `Blob_9` | Double | x: 0.05 y: 0.9 | |
| Radius_9 / `Radius_9` | Double | x: 0.5 y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Blob 9 Color / `Blob_9_Color` | Color | r: 1 g: 0.501961 b: 0.25098 a: 0.25098 | |
| Blob 10 / `Blob_10` | Double | x: 0.05 y: 0.9 | |
| Radius_10 / `Radius_10` | Double | x: 0.5 y: 0.5 | |
| Blob 10 Color / `Blob_10_Color` | Color | r: 1 g: 0.25098 b: 0.501961 a: 0.501961 | |
| Blob 11 / `Blob_11` | Double | x: 0.05 y: 0.9 | |
| Radius_11 / `Radius_11` | Double | x: 0.5 y: 0.5 | |
| Blob 11 Color / `Blob_11_Color` | Color | r: 0.501961 g: 0.25098 b: 1 a: 1 | |
| Blob 12 / `Blob_12` | Double | x: 0.05 y: 0.9 | |
| Radius_12 / `Radius_12` | Double | x: 0.5 y: 0.5 | |
| Blob 12 Color / `Blob_12_Color` | Color | r: 0.25098 g: 0.501961 b: 1 a: 1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.64 G'MIC Colorize Lineart Auto-Fill node

*This documentation is for version 1.0 of G'MIC Colorize Lineart Auto-Fill (eu.gmic.ColorizeLineartAutoFill).*

### Description

Author: David Tschumperle. Latest Update: 2016/12/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Contour Threshold (%) / `Contour_Threshold_` | Double | 90 | |
| Contour Normalization / `Contour_Normalization` | Boolean | On | |
| Minimal Region Area / `Minimal_Region_Area` | Integer | 8 | |
| Tolerance to Gaps / `Tolerance_to_Gaps` | Integer | 0 | |
| Preview Type / `Preview_Type` | Choice | Lineart + Colors | **Lineart + Colors**<br>**Colors Only** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 251 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.65 G'MIC Colorize Lineart Propagation node

*This documentation is for version 1.0 of G'MIC Colorize Lineart Propagation (eu.gmic.ColorizeLineartPropagation).*

### Description

Layers ordering:

Note: You probably need to select All for the Input layers option on the left.

Color Spots = your layer with color indications.

Lineart = your layer with line-art (b&w or transparent).

Extrapolated Colors = the G'MIC generated layer with flat colors.

Warnings:

- Do not rely too much on the preview, it is probably not accurate !
- Activate option Extrapolate color as one layer per single color/region only if you have a lot of available memory !

Click here for a detailed description of this filter.: http://www.gimpchat.com/viewtopic.php?f=28&t=7567

Authors: David Tschumperle, Timothee Giet and David Revoy. Latest Update: 2013/19/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Input Layers / `Input_Layers` | Choice | Color Spots + Lineart | **Color Spots + Lineart**<br>**Lineart + Color Spots**<br>**Color Spots + Extrapolated Colors + Lineart**<br>**Lineart + Color Spots + Extrapolated Colors** |
| Output Layers / `Output_Layers` | Choice | Extrapolated Colors + Lineart | **Single (Merged)**<br>**Extrapolated Colors + Lineart**<br>**Lineart + Extrapolated Colors**<br>**Color Spots + Extrapolated Colors + Lineart**<br>**Lineart + Color Spots + Extrapolated Colors** |
| Extrapolate Colors As / `Extrapolate_Colors_As` | Choice | One Layer | **One Layer**<br>**Two Layers**<br>**Three Layers**<br>**Four Layers**<br>**Five Layers**<br>**Six Layers**<br>**Seven Layers**<br>**Eight Layers**<br>**Nine Layers**<br>**Ten Layers**<br>**One Layer per Single Color**<br>**One Layer per Single Region** |
| Smoothness / `Smoothness` | Double | 0.05 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 252 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.66 G'MIC Colorize Lineart Smart Coloring node

*This documentation is for version 1.0 of G'MIC Colorize Lineart Smart Coloring (eu.gmic.ColorizeLineartSmartColoring).*

### Description

Global geometry parameters:

Add strokes with a saturated color having value 255 (e.g. pure red) on your lineart allows to guide the colorization algorithm with virtual contours.

For Random colors mode only:

For color spots mode only:

Connection parameters:

Authors: David Tschumperle, Sebastien Fourey and David Revoy. Latest Update: 2018/11/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorize Mode / `Colorize_Mode` | Choice | Generate Random-Colors Layer | **Generate Random-Colors Layer**<br>**Extrapolate Color Spots on Transparent Top Layer**<br>**Auto-Clean Bottom Color Layer** |
| Contour Detection (%) / `Contour_Detection_` | Double | 95 | |
| Discard Contour Guides / `Discard_Contour_Guides` | Boolean | Off | |
| Output Region Delimiters / `Output_Region_Delimiters` | Boolean | Off | |
| Make Hue Depends on Region Size / `Make_Hue_Depends_on_Region_Size` | Double | 1 | |
| Maximal Color Saturation / `Maximal_Color_Saturation` | Integer | 24 | |
| Minimal Color Intensity / `Minimal_Color_Intensity` | Integer | 200 | |
| Color Shading (%) / `Color_Shading_` | Integer | 0 | |
| End Point Rate (%) / `End_Point_Rate_` | Double | 75 | |
| End Point Connectivity / `End_Point_Connectivity` | Integer | 2 | |
| Spline Max Length (px) / `Spline_Max_Length_px` | Double | 60 | |
| Segment Max Length (px) / `Segment_Max_Length_px` | Double | 20 | |
| Spline Max Angle (deg) / `Spline_Max_Angle_deg` | Double | 90 | |
| Spline Roundness / `Spline_Roundness` | Double | 1 | |
| Minimal Region Area / `Minimal_Region_Area` | Double | 10 | |

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Table 253 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Allow Self Intersections / `Allow_Self_Intersections` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Colored geometry | **Colored geometry**<br>**Colored regions**<br>**Colored lineart** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.67 G'MIC Colorize Photographs node

*This documentation is for version 1.0 of G'MIC Colorize Photographs (eu.gmic.ColorizePhotographs).*

### Description

Note: This filter needs two layers to work properly. The bottom layer must be a B&W image, while the top layer contains color patches that will be extrapolated in a smart way (edge-directed) to fill the entire image. At the end, you get a completely recolored image.

Author: David Tschumperle. Latest Update: 2013/16/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Integer | 2 | |
| Anisotropy / `Anisotropy` | Double | 0.2 | |
| Output Mode / `Output_Mode` | Choice | Merge Brightness / Colors | **Merge Brightness / Colors**<br>**Split Brightness / Colors** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 254 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.68 G'MIC Colorize with Colormap node

*This documentation is for version 1.0 of G'MIC Colorize with Colormap (eu.gmic.ColorizewithColormap).*

### Description

User-defined gradient :

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Normalize Input / `Normalize_Input` | Boolean | Off | |
| Gradient Preset / `Gradient_Preset` | Choice | User-Defined | **User-Defined**<br>**Black to White**<br>**White to Black**<br>**Sepia**<br>**Solarize** |
| Interpolation Type / `Interpolation_Type` | Choice | Linear | **Nearest**<br>**Linear**<br>**Cubic**<br>**Lanczos** |
| Preserve Initial Brightness / `Preserve_Initial_Brightness` | Boolean | Off | |
| Number of Tones / `Number_of_Tones` | Integer | 5 | |
| 1st Tone / `p1st_Tone` | Color | r: 0 g: 0 b: 0 a: 0 | |
| 2nd Tone / `p2nd_Tone` | Color | r: 0.168627 g: 0.0980392 b: 0.215686 a: 0.215686 | |
| 3rd Tone / `p3rd_Tone` | Color | r: 0.619608 g: 0.537255 b: 0.741176 a: 0.741176 | |

continues on next page

Table 255 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| 4th Tone / `p4th_Tone` | Color | r: 0.878431 g: 0.74902 b: 0.894118 a: 0.894118 | |
| 5th Tone / `p5th_Tone` | Color | r: 1 g: 1 b: 1 a: 1 | |
| 6th Tone / `p6th_Tone` | Color | r: 1 g: 1 b: 1 a: 1 | |
| 7th Tone / `p7th_Tone` | Color | r: 1 g: 1 b: 1 a: 1 | |
| 8th Tone / `p8th_Tone` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5 y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.69 G'MIC Colormap node

*This documentation is for version 1.0 of G'MIC Colormap (eu.gmic.Colormap).*

### Description

Author: David Tschumperle. Latest Update: 2011/27/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colormap / `Colormap` | Choice | Standard (256) | **Adaptive**<br>**Custom**<br>**Standard (256)**<br>**HSV (256)**<br>**Lines (256)**<br>**Hot (256)**<br>**Cool (256)**<br>**Jet (256)**<br>**Flag (256)**<br>**Cube (256)** |
| Dithering / `Dithering` | Double | 1 | |
| Number of Tones / `Number_of_Tones` | Integer | 32 | |
| Number of Colors / `Number_of_Colors` | Integer | 8 | |
| 1st Color / `p1st_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| 2nd Color / `p2nd_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| 3rd Color / `p3rd_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| 4th Color / `p4th_Color` | Color | r: 0 g: 1 b: 0 a: 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| 5th Color / `p5th_Color` | Color | r: 0 g: 0 b: 1 a: 1 | |
| 6th Color / `p6th_Color` | Color | r: 1 g: 1 b: 0 a: 0 | |
| 7th Color / `p7th_Color` | Color | r: 1 g: 0 b: 1 a: 1 | |
| 8th Color / `p8th_Color` | Color | r: 0 g: 1 b: 1 a: 1 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5 y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 256 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.70 G'MIC Colors to Layers node

*This documentation is for version 1.0 of G'MIC Colors to Layers (eu.gmic.ColorstoLayers).*

### Description

Note: This filter decomposes an image into several layers each with a single color + a residual layer (if any).

Author: David Tschumperle. Latest Update: 2015/11/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color Tolerance / `Color_Tolerance` | Double | 50 | |
| Maximum Number of Output Layers / `Maximum_Number_of_Output_Layers` | Integer | 16 | |
| Minimal Area (%) / `Minimal_Area_` | Double | 1 | |
| Autocrop Output Layers / `Autocrop_Output_Layers` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.71 G'MIC Conformal Maps node

*This documentation is for version 1.0 of G'MIC Conformal Maps (eu.gmic.ConformalMaps).*

#### Description

Author: David Tschumperle. Latest Update: 2017/15/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mapping / `Mapping` | Choice | Dipole: 1/(4*z^2-1) | **Custom Formula**<br>**z**<br>**(z-1)/(z+1)**<br>**cos(z)**<br>**sin(z)**<br>**tan(z)**<br>**exp(z)**<br>**log(z)**<br>**Dipole: 1/(4*z^2-1)**<br>**Star: -5*(z^3/3-z/4)/2** |
| Exponent (Real) / `Exponent_Real` | Double | 1 | |
| Exponent (Imaginary) / `Exponent_Imaginary` | Double | 0 | |
| Custom Formula / `Custom_Formula` | String | ((1.1 + i*z/6)/(1.04 - i*z/6))^6.2 | |
| Zoom / `Zoom` | Double | 0 | |
| Angle / `Angle` | Double | 0 | |
| Aspect Ratio / `Aspect_Ratio` | Double | 0 | |

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Table 258 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Shift / `XShift` | Double | 0 | |
| Y-Shift / `YShift` | Double | 0 | |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Anti-Aliasing / `AntiAliasing` | Integer | 0 | |
| Specify Different Output Size / `Specify_Different_Output_Size` | Boolean | Off | |
| Output Width / `Output_Width` | String | 1024 | |
| Output Height / `Output_Height` | String | 1024 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 258 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.72 G'MIC Contrast Swiss Mask node

*This documentation is for version 1.0 of G'MIC Contrast Swiss Mask (eu.gmic.ContrastSwissMask).*

### Description

Contrast Mask need the negative of the mask

Uncheck for Contrast Mask,Check for Contrast Boost

Merge the Mask

Author: PhotoComiX. Latest Update: 2011/01/01.

Filter explained here: http://www.gimpchat.com/viewtopic.php?f=9&t=864

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Blur the Mask / `Blur_the_Mask` | Double | 2 | |
| Skip to Use the Mask to Boost / `Skip_to_Use_the_Mask_to_Boost` | Boolean | Off | |
| Intensity / `Intensity` | Double | 1 | |

continues on next page

Table 259 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.73 G'MIC Convolve node

*This documentation is for version 1.0 of G'MIC Convolve (eu.gmic.Convolve).*

### Description

Note: If parameter Kernel is set to Custom, it uses the custom convolution kernel defined below. Use commas and semicolons as separators for res. matrix columns and rows.

Note: Kernel multiplier is useful only when parameter Value range is set to Cut.

Author: David Tschumperle. Latest Update: 2013/06/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Kernel / `Kernel` | Choice | Custom | **Custom**<br>**Average 3x3**<br>**Average 5x5**<br>**Average 7x7**<br>**Average 9x9**<br>**Prewitt-X**<br>**Prewitt-Y**<br>**Sobel-X**<br>**Sobel-Y**<br>**Rotinv-X**<br>**Rotinv-Y**<br>**Laplacian**<br>**Robert Cross 1**<br>**Robert Cross 2**<br>**Impulses 5x5**<br>**Impulses 7x7**<br>**Impulses 9x9** |
| Boundary / `Boundary` | Choice | Neumann | **Dirichlet**<br>**Neumann** |
| Custom Kernel / `Custom_Kernel` | String | 0,1,0;1,-4,1;0,1,0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value Range / `Value_Range` | Choice | Normalize | **Cut**<br>**Normalize** |
| Kernel Multiplier / `Kernel_Multiplier` | Double | 1 | |
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 260 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 260 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.74 G'MIC Cracks node

*This documentation is for version 1.0 of G'MIC Cracks (eu.gmic.Cracks).*

#### Description

Author: David Tschumperle. Latest Update: 2016/20/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density (%) / `Density_` | Double | 30 | |
| Relief / `Relief` | Boolean | On | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |

continues on next page

Table 261 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 261 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 261 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.75 G'MIC Crease node

*This documentation is for version 1.0 of G'MIC Crease (eu.gmic.Crease).*

#### Description

Author: David Tschumperle. Latest Update: 2018/01/22.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 30 | |
| Frequency (%) / `Frequency_` | Double | 10 | |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |

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Table 262 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.76 G'MIC Crystal node

*This documentation is for version 1.0 of G'MIC Crystal (eu.gmic.Crystal).*

### Description

Author: David Tschumperle. Latest Update: 2015/19/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Double | 50 | |
| Smoothness / `Smoothness` | Double | 0.2 | |
| Edges / `Edges` | Double | 20 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 263 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.77 G'MIC Crystal Background node

*This documentation is for version 1.0 of G'MIC Crystal Background (eu.gmic.CrystalBackground).*

### Description

Author: David Tschumperle. Latest Update: 2016/18/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Iterations / `Iterations` | Integer | 10 | |
| Density (%) / `Density_` | Double | 25 | |
| Random Seed / `Random_Seed` | Integer | 0 | |
| Opacity (%) / `Opacity_` | Double | 100 | |
| Color / `Color` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.78 G'MIC Cubism node

*This documentation is for version 1.0 of G'MIC Cubism (eu.gmic.Cubism).*

#### Description

Author: David Tschumperle. Latest Update: 2013/05/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Iterations / `Iterations` | Integer | 2 | |
| Density / `Density` | Double | 50 | |
| Thickness / `Thickness` | Double | 10 | |
| Angle / `Angle` | Double | 90 | |
| Opacity / `Opacity` | Double | 0.7 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.79 G'MIC Cupid node

*This documentation is for version 1.0 of G'MIC Cupid (eu.gmic.Cupid).*

### Description

Author: David Tschumperle. Latest Update: 2018/01/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size (%) / `Size_` | Double | 75 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 266 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.80 G'MIC Curvature node

*This documentation is for version 1.0 of G'MIC Curvature (eu.gmic.Curvature).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 2 | |
| Min Threshold / `Min_Threshold` | Double | 0 | |
| Max Threshold / `Max_Threshold` | Double | 100 | |
| Absolute Value / `Absolute_Value` | Boolean | Off | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.81 G'MIC Custom Code Global node

*This documentation is for version 1.0 of G'MIC Custom Code Global (eu.gmic.CustomCodeGlobal).*

#### Description

Note: This filter can execute any set of instructions understood by the G'MIC language interpreter. Here, you can then test some commands before creating your own G'MIC custom commands and plug-in menu entries.

Please look at the documentation reference web page :

https://gmic.eu/reference.shtml

to learn more about available G'MIC commands.

Author: David Tschumperle. Latest Update: 2016/03/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Code / Code | String | repeat *l*>]<br><br>to_rgb<br><br>+deform 20<br><br>blend_edges 3<br><br>-endl done | |

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Table 268 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | None (Allows Multi-layers) | **None (Allows Multi-layers)**<br>**All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |
| Display Debug Info on Preview / `Display_Debug_Info_on_Preview` | Boolean | Off | |

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Table 268 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Debug Font Size / `Debug_Font_Size` | Choice | Normal | **Tiny**<br>**Small**<br>**Normal**<br>**Large** |
| Preview Type / `Preview_Type` | Choice | Full (Allows Multi-Layers) | **Full (Allows Multi-Layers)**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 268 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.82 G'MIC Custom Code Local node

*This documentation is for version 1.0 of G'MIC Custom Code Local (eu.gmic.CustomCodeLocal).*

### Description

Note: This filter can execute any set of instructions understood by the G'MIC language interpreter. Here, you can then test some commands before creating your own G'MIC custom commands and plug-in menu entries.

Please look at the documentation reference web page :

https://gmic.eu/reference.shtml

to learn more about available G'MIC commands.

Author: David Tschumperle. Latest Update: 2016/03/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Code / Code | String | repeat<br>*l*>]<br><br>to_rgb<br><br>+deform<br>20<br><br>blend_edges<br>3<br><br>-endl<br>done | |

continues on next page

Table 269 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | None (Allows Multi-layers) | **None (Allows Multi-layers)**<br>**All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |
| Display Debug Info on Preview / `Display_Debug_Info_on_Preview` | Boolean | Off | |

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Table 269 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Debug Font Size / `Debug_Font_Size` | Choice | Normal | **Tiny**<br>**Small**<br>**Normal**<br>**Large** |
| Preview Type / `Preview_Type` | Choice | Full (Allows Multi-Layers) | **Full (Allows Multi-Layers)**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 269 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.83 G'MIC Customize CLUT node

*This documentation is for version 1.0 of G'MIC Customize CLUT (eu.gmic.CustomizeCLUT).*

#### Description

Global correction:

Color correspondences:

Author: David Tschumperle. Latest Update: 2016/14/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Keypoint Influence (%) / `Keypoint_Influence_` | Double | 100 | |
| Lock Uniform Sampling / `Lock_Uniform_Sampling` | Choice | None | **None**<br>**8 Keypoints (RGB Corners)**<br>**27 Keypoints**<br>**64 Keypoints**<br>**125 Keypoints**<br>**216 Keypoints**<br>**343 Keypoints** |

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Table 270 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spatial Regularization / Spatial_Regularization | Integer | 10 | |
| Brightness (%) / Brightness_ | Double | 0 | |
| Contrast (%) / Contrast_ | Double | 0 | |
| Gamma (%) / Gamma_ | Double | 0 | |
| Hue (%) / Hue_ | Double | 0 | |
| Saturation (%) / Saturation_ | Double | 0 | |
| Post-Normalize / PostNormalize | Boolean | Off | |
| Output Corresponding CLUT / Output_Corresponding_CLUT | Choice | Disable | **Disable**<br>**512x512 Layer**<br>**4096x4096 Layer** |
| Preview Type / Preview_Type | Choice | 3D CLUT (Fast) | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**HaldCLUT**<br>**3D CLUT (Fast)**<br>**3D CLUT (Precise)** |
| CLUT Opacity / CLUT_Opacity | Double | 0.5 | |
| Action #1 / Action_1 | Choice | Lock Source | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #1 / Source_Color_1 | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #1 / Target_Color_1 | Color | r: 0 g: 0 b: 0 a: 0 | |

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Table 270 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Action #2 / `Action_2` | Choice | Lock Source | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #2 / `Source_Color_2` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Target Color #2 / `Target_Color_2` | Color | r: 1 g: 0.768627 b: 0.501961 a: 0.501961 | |
| Action #3 / `Action_3` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #3 / `Source_Color_3` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #3 / `Target_Color_3` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #4 / `Action_4` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #4 / `Source_Color_4` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #4 / `Target_Color_4` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #5 / `Action_5` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #5 / `Source_Color_5` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #5 / `Target_Color_5` | Color | r: 0 g: 0 b: 0 a: 0 | |

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Table 270 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Action #6 / `Action_6` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #6 / `Source_Color_6` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #6 / `Target_Color_6` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #7 / `Action_7` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #7 / `Source_Color_7` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #7 / `Target_Color_7` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #8 / `Action_8` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #8 / `Source_Color_8` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #8 / `Target_Color_8` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #9 / `Action_9` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #9 / `Source_Color_9` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #9 / `Target_Color_9` | Color | r: 0 g: 0 b: 0 a: 0 | |

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Table 270 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Action #10 / `Action_10` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #10 / `Source_Color_10` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #10 / `Target_Color_10` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #11 / `Action_11` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #11 / `Source_Color_11` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #11 / `Target_Color_11` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #12 / `Action_12` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #12 / `Source_Color_12` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #12 / `Target_Color_12` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #13 / `Action_13` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #13 / `Source_Color_13` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #13 / `Target_Color_13` | Color | r: 0 g: 0 b: 0 a: 0 | |

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Table 270 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Action #14 / `Action_14` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #14 / `Source_Color_14` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #14 / `Target_Color_14` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #15 / `Action_15` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #15 / `Source_Color_15` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #15 / `Target_Color_15` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #16 / `Action_16` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #16 / `Source_Color_16` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #16 / `Target_Color_16` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #17 / `Action_17` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #17 / `Source_Color_17` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #17 / `Target_Color_17` | Color | r: 0 g: 0 b: 0 a: 0 | |

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Table 270 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Action #18 / `Action_18` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #18 / `Source_Color_18` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #18 / `Target_Color_18` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #19 / `Action_19` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #19 / `Source_Color_19` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #19 / `Target_Color_19` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #20 / `Action_20` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #20 / `Source_Color_20` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #20 / `Target_Color_20` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #21 / `Action_21` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #21 / `Source_Color_21` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #21 / `Target_Color_21` | Color | r: 0 g: 0 b: 0 a: 0 | |

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Table 270 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Action #22 / `Action_22` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #22 / `Source_Color_22` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #22 / `Target_Color_22` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #23 / `Action_23` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #23 / `Source_Color_23` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #23 / `Target_Color_23` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Action #24 / `Action_24` | Choice | Ignore | **Ignore**<br>**Lock Source**<br>**Replace Source by Target** |
| Source Color #24 / `Source_Color_24` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Target Color #24 / `Target_Color_24` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 270 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.84 G'MIC Cutout node

*This documentation is for version 1.0 of G'MIC Cutout (eu.gmic.Cutout).*

#### Description

Authors: David Tschumperle and Garagecoder Latest Update: 2014/03/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Levels / `Number_of_Levels` | Integer | 4 | |
| Edge Simplicity / `Edge_Simplicity` | Double | 0.5 | |
| Edge Fidelity / `Edge_Fidelity` | Integer | 4 | |
| Normalize / `Normalize` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 271 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.85 G'MIC Decompose Channels node

*This documentation is for version 1.0 of G'MIC Decompose Channels (eu.gmic.DecomposeChannels).*

#### Description

Author: David Tschumperle. Latest Update: 2016/19/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color Basis / `Color_Basis` | Choice | Lab | **RGB**<br>**HSV**<br>**HSL**<br>**HSI**<br>**YUV**<br>**YCbCr**<br>**XYZ**<br>**Lab**<br>**Lch**<br>**CMY**<br>**CMYK**<br>**YIQ** |
| Action / `Action` | Choice | Decompose | **Decompose**<br>**Recompose** |
| Output Multiple Layers / `Output_Multiple_Layers` | Boolean | Off | |
| Include Opacity Layer / `Include_Opacity_Layer` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 272 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.86 G'MIC Deinterlace node

*This documentation is for version 1.0 of G'MIC Deinterlace (eu.gmic.Deinterlace).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Algorithm / `Algorithm` | Choice | Standard | **Standard**<br>**Motion-Compensated** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.87 G'MIC Details Equalizer node

*This documentation is for version 1.0 of G'MIC Details Equalizer (eu.gmic.DetailsEqualizer).*

### Description

Coarse scale:

Medium scale:

Small scale:

Fine scale:

Author: Jerome Boulanger and David Tschumperle. Latest Update: 2015/11/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Base Scale / `Base_Scale` | Double | 5 | |
| Detail Scale / `Detail_Scale` | Double | 0.5 | |
| Threshold / `Threshold` | Double | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Smoothness Type / `Smoothness_Type` | Choice | Diffusion | **Gaussian**<br>**Bilateral**<br>**Diffusion** |
| Gain / `Gain` | Double | 0 | |
| Threshold_2 / `Threshold_2` | Double | 0 | |
| Smoothness_2 / `Smoothness_2` | Double | 0 | |
| Smoothness Type_2 / `Smoothness_Type_2` | Choice | Diffusion | **Gaussian**<br>**Bilateral**<br>**Diffusion** |
| Gain_2 / `Gain_2` | Double | 0 | |
| Threshold_3 / `Threshold_3` | Double | 0 | |
| Smoothness_3 / `Smoothness_3` | Double | 0 | |
| Smoothness Type_3 / `Smoothness_Type_3` | Choice | Diffusion | **Gaussian**<br>**Bilateral**<br>**Diffusion** |
| Gain_3 / `Gain_3` | Double | 0 | |
| Threshold_4 / `Threshold_4` | Double | 0 | |
| Smoothness_4 / `Smoothness_4` | Double | 0 | |
| Smoothness Type_4 / `Smoothness_Type_4` | Choice | Diffusion | **Gaussian**<br>**Bilateral**<br>**Diffusion** |
| Gain_4 / `Gain_4` | Double | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 274 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 32 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.88 G'MIC Detect Skin node

*This documentation is for version 1.0 of G'MIC Detect Skin (eu.gmic.DetectSkin).*

### Description

Manual estimation:

Use the sliders below to target as much skin pixels as you can.

Author: David Tschumperle. Latest Update: 2014/03/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Skin Estimation / `Skin_Estimation` | Choice | Automatic | **Manual**<br>**Automatic** |
| Tolerance / `Tolerance` | Double | 0.5 | |
| Smoothness / `Smoothness` | Double | 0.5 | |
| Threshold / `Threshold` | Double | 1 | |
| Pre-Normalize Image / `PreNormalize_Image` | Boolean | On | |
| X-Coordinate / `XCoordinate` | Double | 50 | |
| Y-Coordinate / `YCoordinate` | Double | 50 | |
| Radius / `Radius` | Double | 5 | |
| Output Mode / `Output_Mode` | Choice | Opaque Skin | **Probability Map**<br>**Opaque Skin**<br>**Transparent Skin** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.89 G'MIC Dices node

*This documentation is for version 1.0 of G'MIC Dices (eu.gmic.Dices).*

### Description

Author: David Tschumperle. Latest Update: 2013/27/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution / `Resolution` | Double | 2 | |
| Size / `Size` | Integer | 24 | |
| Color Model / `Color_Model` | Choice | White Dices | **Black Dices**<br>**White Dices**<br>**Dices with Colored Numbers**<br>**Dices with Colored Sides** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 276 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.90 G'MIC Difference of Gaussians node

*This documentation is for version 1.0 of G'MIC Difference of Gaussians (eu.gmic.DifferenceofGaussians).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| 1st Variance / `p1st_Variance` | Double | 1.4 | |
| 2nd Variance / `p2nd_Variance` | Double | 1.5 | |
| Threshold / `Threshold` | Double | 0 | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |
| Monochrome / `Monochrome` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 277 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.91 G'MIC Diffusion Tensors node

*This documentation is for version 1.0 of G'MIC Diffusion Tensors (eu.gmic.DiffusionTensors).*

#### Description

Author: David Tschumperle. Latest Update: 2016/19/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution (%) / `Resolution_` | Double | 10 | |
| Size / `Size` | Double | 5 | |
| Color Mode / `Color_Mode` | Choice | Color | **Monochrome**<br>**Grayscale**<br>**Orientation**<br>**Color** |
| Outline / `Outline` | Integer | 1 | |
| Sharpness / `Sharpness` | Double | 0.15 | |
| Anisotropy / `Anisotropy` | Double | 1 | |
| Gradient Smoothness / `Gradient_Smoothness` | Double | 0 | |
| Tensor Smoothness / `Tensor_Smoothness` | Double | 3 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 278 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.92 G'MIC Dirty node

*This documentation is for version 1.0 of G'MIC Dirty (eu.gmic.Dirty).*

### Description

Author: David Tschumperle. Latest Update: 2014/24/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 30 | |
| Monochrome / `Monochrome` | Boolean | On | |

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Table 279 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 279 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 279 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.93 G'MIC Distance Transform node

*This documentation is for version 1.0 of G'MIC Distance Transform (eu.gmic.DistanceTransform).*

#### Description

Author: David Tschumperle. Latest Update: 2011/07/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value / `Value` | Integer | 128 | |
| Metric / `Metric` | Choice | Euclidean | **Chebyshev**<br>**Manhattan**<br>**Euclidean**<br>**Squared-Euclidean** |
| Normalization / `Normalization` | Choice | Modulo | **Cut**<br>**Normalize**<br>**Modulo** |
| Modulo Value / `Modulo_Value` | Integer | 32 | |

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Table 280 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 280 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.94 G'MIC Distort Lens node

*This documentation is for version 1.0 of G'MIC Distort Lens (eu.gmic.DistortLens).*

### Description

Author: David Tschumperle. Latest Update: 2017/18/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 0.1 | |
| Aspect Ratio / `Aspect_Ratio` | Double | 0 | |
| Zoom / `Zoom` | Double | 0 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Boundary / `Boundary` | Choice | Transparent | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |

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Table 281 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.95 G'MIC Dithering node

*This documentation is for version 1.0 of G'MIC Dithering (eu.gmic.Dithering).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Hue / `Hue` | Double | 0 | |
| Saturation (%) / `Saturation_` | Double | 0 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.96 G'MIC Dragon Curve node

*This documentation is for version 1.0 of G'MIC Dragon Curve (eu.gmic.DragonCurve).*

### Description

Author: David Tschumperle. Latest Update: 2019/01/29.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Recursions / `Recursions` | Integer | 20 | |
| Angle / `Angle` | Double | 0 | |
| Opacity / `Opacity` | Double | 1 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.97 G'MIC Drawn Montage node

*This documentation is for version 1.0 of G'MIC Drawn Montage (eu.gmic.DrawnMontage).*

### Description

Note: This filter requires a top layer containing the desired montage layout defined as free-form shapes of different colors. You can then assign each layer to a layout color to create the montage.

Author: David Tschumperle. Latest Update: 2018/01/29.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Layer / `Layer` | Choice | 1st | **1st**<br>**2nd**<br>**3rd**<br>**4th**<br>**5th**<br>**6th**<br>**7th**<br>**8th**<br>**9th**<br>**10th**<br>**11th**<br>**12th**<br>**13th**<br>**14th**<br>**15th**<br>**16th** |
| Associated Color / `Associated_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Zoom / `Zoom` | Double | -10 | |
| X-Centering (%) / `XCentering_` | Double | 50 | |
| Y-Centering (%) / `YCentering_` | Double | 50 | |
| Angle / `Angle` | Choice | 0 deg. | **0 deg.**<br>**90 deg.**<br>**180 deg.**<br>**270 deg.** |

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Table 284 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.98 G'MIC Drop Shadow node

*This documentation is for version 1.0 of G'MIC Drop Shadow (eu.gmic.DropShadow).*

### Description

Author: David Tschumperle. Latest Update: 2012/14/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Shadow / `XShadow` | Double | 3 | |
| Y-Shadow / `YShadow` | Double | 3 | |
| Smoothness / `Smoothness` | Double | 1.8 | |
| Curvature / `Curvature` | Double | 0 | |
| Corner Brightness / `Corner_Brightness` | Double | 0 | |
| Angle / `Angle` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.99 G'MIC Drop Shadow 3D node

*This documentation is for version 1.0 of G'MIC Drop Shadow 3D (eu.gmic.DropShadow3D).*

### Description

Author: David Tschumperle. Latest Update: 2013/02/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Angle / `XAngle` | Double | 0 | |
| Y-Angle / `YAngle` | Double | 0 | |
| Z-Angle / `ZAngle` | Double | 0 | |
| Zoom / `Zoom` | Double | 0 | |
| X-Offset / `XOffset` | Double | 1 | |
| Y-Offset / `YOffset` | Double | 1 | |
| Perspective / `Perspective` | Double | 2 | |
| Smoothness / `Smoothness` | Double | 0.5 | |
| Color / `Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Preview Only Shadow / `Preview_Only_Shadow` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 286 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.100 G'MIC Drop Water node

*This documentation is for version 1.0 of G'MIC Drop Water (eu.gmic.DropWater).*

### Description

Shape geometry:

Parameters Density, Radius, Variability and Random seed are used only in Procedural shapes mode.

Light parameters:

Shadow parameters:

Author: David Tschumperle. Latest Update: 2015/21/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Shapes / `Shapes` | Choice | Procedural | **Procedural**<br>**Opaque Regions on Top Layer** |
| Density / `Density` | Double | 20 | |
| Radius / `Radius` | Double | 2 | |
| Variability / `Variability` | Double | 80 | |
| Random Seed / `Random_Seed` | Integer | 0 | |
| Refraction / `Refraction` | Double | 3 | |
| Light Angle / `Light_Angle` | Double | 35 | |
| Specular Size / `Specular_Size` | Double | 10 | |
| Specular Intensity / `Specular_Intensity` | Double | 1 | |
| Specular Centering / `Specular_Centering` | Double | 0.5 | |
| Shadow Size / `Shadow_Size` | Double | 0.25 | |
| Shadow Intensity / `Shadow_Intensity` | Double | 0.5 | |
| Shadow Smoothness / `Shadow_Smoothness` | Double | 0.75 | |
| Diffuse Shadow / `Diffuse_Shadow` | Double | 0.05 | |
| Smoothness / `Smoothness` | Double | 0.15 | |
| Output as Separate Layers / `Output_as_Separate_Layers` | Boolean | On | |

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Table 287 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.101 G'MIC Droste node

*This documentation is for version 1.0 of G'MIC Droste (eu.gmic.Droste).*

#### Description

Upper-left coordinates :

Upper-right coordinates :

Lower-right coordinates :

Lower-left coordinates :

Author: David Tschumperle. Latest Update: 2012/11/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Point #0 / `Point_0` | Double | x: 0.2<br>y: 0.2 | |
| Point #1 / `Point_1` | Double | x: 0.8<br>y: 0.2 | |
| Point #2 / `Point_2` | Double | x: 0.8<br>y: 0.8 | |
| Point #3 / `Point_3` | Double | x: 0.2<br>y: 0.8 | |
| Iterations / `Iterations` | Integer | 1 | |
| X-Shift / `XShift` | Double | 0 | |
| Y-Shift / `YShift` | Double | 0 | |
| Angle / `Angle` | Double | 0 | |
| Zoom / `Zoom` | Double | 1 | |
| Mirror / `Mirror` | Choice | None | **None**<br>**X-Axis**<br>**Y-Axis**<br>**XY-Axes** |

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Table 288 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Boundary / `Boundary` | Choice | Nearest | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Drawing Mode / `Drawing_Mode` | Choice | Replace | **Replace**<br>**Replace (Sharpest)**<br>**Behind**<br>**Below** |
| View Outlines Only / `View_Outlines_Only` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 288 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.102 G'MIC Edges node

*This documentation is for version 1.0 of G'MIC Edges (eu.gmic.Edges).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Threshold / `Threshold` | Double | 15 | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |

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Table 289 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 289 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.103 G'MIC Edges Offsets node

*This documentation is for version 1.0 of G'MIC Edges Offsets (eu.gmic.EdgesOffsets).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Threshold / `Threshold` | Double | 15 | |
| Scale / `Scale` | Integer | 4 | |
| Thickness / `Thickness` | Integer | 1 | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |

continues on next page

Table 290 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 290 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.104 G'MIC Ellipsionism node

*This documentation is for version 1.0 of G'MIC Ellipsionism (eu.gmic.Ellipsionism).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Primary Radius / `Primary_Radius` | Double | 20 | |
| Secondary Radius / `Secondary_Radius` | Double | 10 | |
| Smoothness / `Smoothness` | Double | 0.5 | |
| Opacity / `Opacity` | Double | 0.7 | |
| Outline / `Outline` | Double | 3 | |
| Density / `Density` | Double | 0.5 | |

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Table 291 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 291 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.105 G'MIC Engrave node

*This documentation is for version 1.0 of G'MIC Engrave (eu.gmic.Engrave).*

#### Description

Black & White foreground:

Color background:

Authors: Lyle Kroll and David Tschumperle. Latest Update: 03/13/2015.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `Radius` | Double | 0.5 | |
| Density / `Density` | Double | 50 | |
| Edges / `Edges` | Double | 0 | |
| Coherence / `Coherence` | Double | 8 | |
| Threshold (%) / `Threshold_` | Double | 40 | |
| Minimal Area / `Minimal_Area` | Integer | 0 | |
| Flat Regions Removal / `Flat_Regions_Removal` | Double | 0 | |

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Table 292 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Add Color Background / `Add_Color_Background` | Boolean | Off | |
| Quantization / `Quantization` | Double | 10 | |
| Shading / `Shading` | Integer | 1 | |
| Hue / `Hue` | Double | 0 | |
| Saturation (%) / `Saturation_` | Double | 0 | |
| Lightness (%) / `Lightness_` | Double | 0 | |
| Anti-Aliasing / `AntiAliasing` | Choice | x1.5 | **Disabled**<br>**x1.5**<br>**x2**<br>**x3** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 292 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.106 G'MIC Equalize HSI-HSL-HSV node

*This documentation is for version 1.0 of G'MIC Equalize HSI-HSL-HSV (eu.gmic.EqualizeHSIHSLHSV).*

### Description

Black:

Near black:

Dark grey:

Mi-dark grey:

Middle grey:

Mid-light grey:

Light grey:

Highlights:

White:

Authors: David Tschumperle and David Revoy. Latest Update: 2018/01/19.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorspace / `Colorspace` | Choice | HSL | **HSI**<br>**HSL**<br>**HSV** |
| Opacity (%) / `Opacity_` | Double | 100 | |
| Value Blending / `Value_Blending` | Double | 0 | |
| Color Blending / `Color_Blending` | Double | 0 | |
| Preview Mapping / `Preview_Mapping` | Choice | None | **None**<br>**Grey**<br>**Color** |

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Table 293 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Hue Offset / `Hue_Offset` | Double | 0 | |
| Saturation Offset / `Saturation_Offset` | Double | 0 | |
| Value Offset / `Value_Offset` | Double | 0 | |
| Hue Offset_2 / `Hue_Offset_2` | Double | 0 | |
| Saturation Offset_2 / `Saturation_Offset_2` | Double | 0 | |
| Value Offset_2 / `Value_Offset_2` | Double | 0 | |
| Hue Offset_3 / `Hue_Offset_3` | Double | 0 | |
| Saturation Offset_3 / `Saturation_Offset_3` | Double | 0 | |
| Value Offset_3 / `Value_Offset_3` | Double | 0 | |
| Hue Offset_4 / `Hue_Offset_4` | Double | 0 | |
| Saturation Offset_4 / `Saturation_Offset_4` | Double | 0 | |
| Value Offset_4 / `Value_Offset_4` | Double | 0 | |
| Hue Offset_5 / `Hue_Offset_5` | Double | 0 | |
| Saturation Offset_5 / `Saturation_Offset_5` | Double | 0 | |
| Value Offset_5 / `Value_Offset_5` | Double | 0 | |
| Hue Offset_6 / `Hue_Offset_6` | Double | 0 | |
| Saturation Offset_6 / `Saturation_Offset_6` | Double | 0 | |
| Value Offset_6 / `Value_Offset_6` | Double | 0 | |
| Hue Offset_7 / `Hue_Offset_7` | Double | 0 | |
| Saturation Offset_7 / `Saturation_Offset_7` | Double | 0 | |
| Value Offset_7 / `Value_Offset_7` | Double | 0 | |
| Hue Offset_8 / `Hue_Offset_8` | Double | 0 | |
| Saturation Offset_8 / `Saturation_Offset_8` | Double | 0 | |
| Value Offset_8 / `Value_Offset_8` | Double | 0 | |
| Hue Offset_9 / `Hue_Offset_9` | Double | 0 | |
| Saturation Offset_9 / `Saturation_Offset_9` | Double | 0 | |

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Table 293 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Value Offset_9 / `Value_Offset_9` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 293 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.107 G'MIC Equalize HSV node

*This documentation is for version 1.0 of G'MIC Equalize HSV (eu.gmic.EqualizeHSV).*

#### Description

Author: Jerome Ferrari. Latest Update: 01/14/2011.

Filter explained here: http://www.flickr.com/groups/gmic/discuss/72157625798533482

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Bands / `Preview_Bands` | Boolean | Off | |
| Hue Band / `Hue_Band` | Double | 180 | |
| Band Width / `Band_Width` | Double | 40 | |
| Hue Shift / `Hue_Shift` | Double | 0 | |
| Saturation Correction / `Saturation_Correction` | Double | 0 | |
| Value Correction / `Value_Correction` | Double | 0 | |
| Hue Band_2 / `Hue_Band_2` | Double | 180 | |
| Band Width_2 / `Band_Width_2` | Double | 40 | |

continues on next page

Table 294 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Hue Shift_2 / `Hue_Shift_2` | Double | 0 | |
| Saturation Correction_2 / `Saturation_Correction_2` | Double | 0 | |
| Value Correction_2 / `Value_Correction_2` | Double | 0 | |
| Hue Band_3 / `Hue_Band_3` | Double | 180 | |
| Band Width_3 / `Band_Width_3` | Double | 40 | |
| Hue Shift_3 / `Hue_Shift_3` | Double | 0 | |
| Saturation Correction_3 / `Saturation_Correction_3` | Double | 0 | |
| Value Correction_3 / `Value_Correction_3` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 294 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.108 G'MIC Equalize Local Histograms node

*This documentation is for version 1.0 of G'MIC Equalize Local Histograms (eu.gmic.EqualizeLocalHistograms).*

#### Description

Author: David Tschumperle. Latest Update: 2018/01/31.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Strength (%) / `Strength_` | Double | 75 | |
| Mode / `Mode` | Choice | Soft | **Raw**<br>**Hard**<br>**Soft** |
| Radius / `Radius` | Integer | 4 | |
| Sigma / `Sigma` | Double | 100 | |
| Regularization / `Regularization` | Double | 8 | |
| Reduce Halos / `Reduce_Halos` | Boolean | On | |

continues on next page

Table 295 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | Lab [Lightness] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 295 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 295 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.109 G'MIC Equalize Shadow node

*This documentation is for version 1.0 of G'MIC Equalize Shadow (eu.gmic.EqualizeShadow).*

#### Description

Authors: Francois Grassard and David Tschumperle. Latest Update: 2012/24/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 1 | |

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Table 296 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 296 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.110 G'MIC Equation Plot Parametric node

*This documentation is for version 1.0 of G'MIC Equation Plot Parametric (eu.gmic.EquationPlotParametric).*

### Description

Author: David Tschumperle. Latest Update: 2013/13/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X(t) / `Xt` | String | sin(t)*(exp(cos(t))-<br>2*cos(4*t)-<br>sin(t/12)^5) | |
| Y(t) / `Yt` | String | cos(t)*(exp(cos(t))-<br>2*cos(4*t)-<br>sin(t/12)^5) | |
| Min-t / `Mint` | Double | 0 | |
| Max-t / `Maxt` | Double | 100 | |
| Resolution / `Resolution` | Integer | 4096 | |
| Outline Opacity / `Outline_Opacity` | Double | 1 | |
| Dot Size / `Dot_Size` | Integer | 0 | |

continues on next page

Table 297 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Start Color / `Start_Color` | Color | r: 0.25098 g: 0 b: 0 a: 0 | |
| End Color / `End_Color` | Color | r: 0.501961 g: 0 b: 0 a: 0 | |
| Colored Outline / `Colored_Outline` | Boolean | On | |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Decoration / `Decoration` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.111 G'MIC Equation Plot Y=f(X) node

*This documentation is for version 1.0 of G'MIC Equation Plot Y=f(X) (eu.gmic.EquationPlotYfX).*

### Description

Note : Use variable X instead of x in the above equation to take care of the X-min/max settings. Variable c refers to the current channel number. Variable u refers to a uniformly distributed random value in [0,1]. Reduce resolution to be able to view separate graph vertices.

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| F(X) / `FX` | String | X*c+10*cos(X+c+u) | |
| X-Min / `XMin` | Double | -10 | |
| X-Max / `XMax` | Double | 10 | |
| Resolution / `Resolution` | Integer | 100 | |
| Channels / `Channels` | Integer | 3 | |
| Plot Type / `Plot_Type` | Choice | Splines | **None**<br>**Lines**<br>**Splines**<br>**Bars** |
| Vertex Type / `Vertex_Type` | Choice | None | **None**<br>**Points**<br>**Crosses 1**<br>**Crosses 2**<br>**Circles 1**<br>**Circles 2**<br>**Square 1**<br>**Square 2** |

continues on next page

Table 298 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.112 G'MIC Equirectangular to Nadir-Zenith node

*This documentation is for version 1.0 of G'MIC Equirectangular to Nadir-Zenith (eu.gmic.EquirectangulartoNadirZenith).*

### Description

Author: David Tschumperle. Latest Update: 2015/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mode / `Mode` | Choice | to Nadir / Zenith | **to Nadir / Zenith**<br>**to Equirectangular** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 299 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.113 G'MIC Euclidean Polar node

*This documentation is for version 1.0 of G'MIC Euclidean Polar (eu.gmic.EuclideanPolar).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Stretch Factor / `Stretch_Factor` | Double | 1 | |
| Boundary / `Boundary` | Choice | Nearest | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Inverse Transform / `Inverse_Transform` | Boolean | Off | |

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Table 300 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.114 G'MIC Extract Objects node

*This documentation is for version 1.0 of G'MIC Extract Objects (eu.gmic.ExtractObjects).*

### Description

Author: David Tschumperle. Latest Update: 2015/23/02.

Filter explained here: http://gimpchat.com/viewtopic.php?f=28&t=7905

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Background Point / `Background_Point` | Double | x: 0 y: 0 | |
| Color Tolerance / `Color_Tolerance` | Integer | 20 | |
| Opacity Threshold (%) / `Opacity_Threshold_` | Integer | 50 | |
| Minimal Area / `Minimal_Area` | Double | 0.3 | |
| Connectivity / `Connectivity` | Choice | Low | **Low**<br>**High** |
| Output As / `Output_As` | Choice | Crop | **Crop**<br>**Segmentation** |
| Preview Guides / `Preview_Guides` | Boolean | On | |

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Table 301 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.115 G'MIC Fade Layers node

*This documentation is for version 1.0 of G'MIC Fade Layers (eu.gmic.FadeLayers).*

#### Description

Note: This filter needs at least two layers to work properly. Set the Input layers option to handle multiple input layers.

Author: David Tschumperle. Latest Update: 2012/04/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Inter-Frames / `InterFrames` | Integer | 10 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 302 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.116 G'MIC Felt Pen node

*This documentation is for version 1.0 of G'MIC Felt Pen (eu.gmic.FeltPen).*

#### Description

Author: David Tschumperle. Latest Update: 2012/25/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 300 | |
| Density / `Density` | Double | 50 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Opacity / `Opacity` | Double | 0.1 | |
| Edge / `Edge` | Double | 20 | |

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Table 303 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Thickness / `Thickness` | Integer | 5 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 303 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.117 G'MIC Fish-Eye node

*This documentation is for version 1.0 of G'MIC Fish-Eye (eu.gmic.FishEye).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Radius / `Radius` | Double | 70 | |
| Amplitude / `Amplitude` | Double | 1 | |

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Table 304 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.118 G'MIC Flip & Rotate Blocs node

*This documentation is for version 1.0 of G'MIC Flip & Rotate Blocs (eu.gmic.FlipRotateBlocs).*

### Description

Author: David Tschumperle. Latest Update: 2016/01/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Size (px) / `XSize_px` | Integer | 4 | |
| Y-Size (px) / `YSize_px` | Integer | 4 | |
| Flip / `Flip` | Choice | XY-axes | **None**<br>**X-axis**<br>**Y-axis**<br>**XY-axes** |
| Rotate / `Rotate` | Choice | 0 deg. | **-90 deg.**<br>**0 deg.**<br>**90 deg.** |

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Table 305 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 305 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 305 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.119 G'MIC Flower node

*This documentation is for version 1.0 of G'MIC Flower (eu.gmic.Flower).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Amplitude / Angle / `Amplitude__Angle` | Double | x: 0.75<br>y: 0.5 | |
| Petals / `Petals` | Integer | 6 | |
| Offset (%) / `Offset_` | Double | 0 | |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |

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Table 306 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.120 G'MIC Fourier Analysis node

*This documentation is for version 1.0 of G'MIC Fourier Analysis (eu.gmic.FourierAnalysis).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.121 G'MIC Fourier Transform node

*This documentation is for version 1.0 of G'MIC Fourier Transform (eu.gmic.FourierTransform).*

#### Description

Note: Apply this filter once to get the direct FFT, and once again to get the reverse transform.

Click here for a video tutorial: http://www.youtube.com/watch?v=3137dDa6P4s

Author: David Tschumperle. Latest Update: 2018/06/16.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Magnitude / Phase / `Magnitude__Phase` | Choice | One Layer (Vertical) | **One Layer (Horizontal)**<br>**One Layer (Vertical)**<br>**Two Layers** |
| Discard Transparency / `Discard_Transparency` | Boolean | On | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.122 G'MIC Fourier Watermark node

*This documentation is for version 1.0 of G'MIC Fourier Watermark (eu.gmic.FourierWatermark).*

### Description

Note: To make the watermark visible afterwards, use the 'Fourier Analysis' filter.

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Text / `Text` | String | (c) G'MIC | |
| Size / `Size` | Integer | 53 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.123 G'MIC Fractalize node

*This documentation is for version 1.0 of G'MIC Fractalize (eu.gmic.Fractalize).*

### Description

Note: This filter uses lot of random values to generate its result, so running it twice will give you different results !

Click here for a detailed description of this filter.: http://www.gimpchat.com/viewtopic.php?f=28&t=10036

Author: David Tschumperle. Latest Update: 2014/25/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Detail Level / `Detail_Level` | Double | 0.8 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.124 G'MIC Frame Blur node

*This documentation is for version 1.0 of G'MIC Frame Blur (eu.gmic.FrameBlur).*

### Description

Author: David Tschumperle. Latest Update: 2014/19/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Horizontal Size (%) / `Horizontal_Size_` | Double | 30 | |
| Vertical Size (%) / `Vertical_Size_` | Double | 30 | |
| Crop / `Crop` | Double | 0 | |
| Blur / `Blur` | Double | 5 | |
| Roundness / `Roundness` | Double | 0 | |
| Apply Color Balance / `Apply_Color_Balance` | Boolean | Off | |
| Balance Color / `Balance_Color` | Color | r: 0.501961 g: 0.501961 b: 0.501961 a: 0.501961 | |
| Normalization / `Normalization` | Choice | None | **None**<br>**Stretch**<br>**Equalize** |
| Outline Size / `Outline_Size` | Double | 5 | |
| Outline Color / `Outline_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| X-Shadow / `XShadow` | Double | 2 | |
| Y-Shadow / `YShadow` | Double | 2 | |
| Shadow Smoothness / `Shadow_Smoothness` | Double | 1 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Shadow Contrast / `Shadow_Contrast` | Double | 0 | |
| X-Centering / `XCentering` | Double | 0.5 | |
| Y-Centering / `YCentering` | Double | 0.5 | |
| Angle / `Angle` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.125 G'MIC Frame Cube node

*This documentation is for version 1.0 of G'MIC Frame Cube (eu.gmic.FrameCube).*

#### Description

Author: David Tschumperle, Angelo Lama. Latest Update: 2012/29/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Depth / `Depth` | Double | 3 | |
| X-Center / `XCenter` | Double | 0 | |
| Y-Center / `YCenter` | Double | 0 | |
| Left Side Orientation / `Left_Side_Orientation` | Choice | Normal | **Normal**<br>**Mirror-X**<br>**Mirror-Y**<br>**Mirror-XY** |
| Right Side Orientation / `Right_Side_Orientation` | Choice | Normal | **Normal**<br>**Mirror-X**<br>**Mirror-Y**<br>**Mirror-XY** |
| Upper Side Orientation / `Upper_Side_Orientation` | Choice | Normal | **Normal**<br>**Mirror-X**<br>**Mirror-Y**<br>**Mirror-XY** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Lower Side Orientation / `Lower_Side_Orientation` | Choice | Normal | **Normal**<br>**Mirror-X**<br>**Mirror-Y**<br>**Mirror-XY** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.126 G'MIC Frame Fuzzy node

*This documentation is for version 1.0 of G'MIC Frame Fuzzy (eu.gmic.FrameFuzzy).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Horizontal Size (%) / `Horizontal_Size_` | Double | 5 | |
| Vertical Size (%) / `Vertical_Size_` | Double | 5 | |
| Fuzzyness / `Fuzzyness` | Double | 10 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.127 G'MIC Frame Mirror node

*This documentation is for version 1.0 of G'MIC Frame Mirror (eu.gmic.FrameMirror).*

#### Description

Frame size:

Image alignment:

Frame dilation/shrinking:

Author: David Tschumperle. Latest Update: 2018/08/20.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Horizontal (%) / `Horizontal_` | Double | 10 | |
| Vertical (%) / `Vertical_` | Double | 10 | |
| Horizontal (%)_2 / `Horizontal__2` | Double | 50 | |
| Vertical (%)_2 / `Vertical__2` | Double | 50 | |
| Left / `Left` | Double | 0 | |
| Right / `Right` | Double | 0 | |
| Up / `Up` | Double | 0 | |
| Bottom / `Bottom` | Double | 0 | |
| Preview Opacity (%) / `Preview_Opacity_` | Double | 0.75 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.128 G'MIC Frame Painting node

*This documentation is for version 1.0 of G'MIC Frame Painting (eu.gmic.FramePainting).*

#### Description

Author: David Tschumperle. Latest Update: 2012/07/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size (%) / `Size_` | Double | 10 | |
| Contrast / `Contrast` | Double | 0.4 | |
| Smoothness / `Smoothness` | Double | 6 | |
| Color / `Color` | Color | r: 0.882353 g: 0.784314 b: 0.470588 a: 0.470588 | |
| Vignette Size / `Vignette_Size` | Double | 2 | |
| Vignette Contrast / `Vignette_Contrast` | Double | 400 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Defects Contrast / `Defects_Contrast` | Double | 50 | |
| Defects Density / `Defects_Density` | Double | 10 | |
| Defects Size / `Defects_Size` | Double | 1 | |
| Defects Smoothness / `Defects_Smoothness` | Double | 0.5 | |
| Serial Number / `Serial_Number` | Integer | 123456 | |
| Frame as a New Layer / `Frame_as_a_New_Layer` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.129 G'MIC Frame Pattern node

*This documentation is for version 1.0 of G'MIC Frame Pattern (eu.gmic.FramePattern).*

### Description

Author: David Tschumperle. Latest Update: 2014/01/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Tiles / `Tiles` | Integer | 10 | |
| Pattern / `Pattern` | Choice | Self Image | **Top Layer**<br>**Self Image** |
| Iterations / `Iterations` | Integer | 1 | |
| Constrain Image Size / `Constrain_Image_Size` | Boolean | On | |

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Table 316 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.130 G'MIC Frame Regular node

*This documentation is for version 1.0 of G'MIC Frame Regular (eu.gmic.FrameRegular).*

### Description

Crop parameters :

Frame parameters :

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Start (%) / `XStart_` | Integer | 0 | |
| X-End (%) / `XEnd_` | Integer | 100 | |
| Y-Start (%) / `YStart_` | Integer | 0 | |
| Y-End (%) / `YEnd_` | Integer | 100 | |
| Width (%) / `Width_` | Integer | 10 | |
| Height (%) / `Height_` | Integer | 10 | |
| Color / `Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Outline Size / `Outline_Size` | Integer | 1 | |
| Outline Color / `Outline_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |

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Table 317 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.131 G'MIC Frame Round node

*This documentation is for version 1.0 of G'MIC Frame Round (eu.gmic.FrameRound).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Sharpness / `Sharpness` | Double | 6 | |
| Size (%) / `Size_` | Double | 20 | |
| Smoothness / `Smoothness` | Double | 0.1 | |
| Shade / `Shade` | Double | 0 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Blur Frame / `Blur_Frame` | Double | 0 | |
| Blur Shade / `Blur_Shade` | Double | 0.1 | |
| Blur Amplitude / `Blur_Amplitude` | Double | 3 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 318 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.132 G'MIC Frame Smooth node

*This documentation is for version 1.0 of G'MIC Frame Smooth (eu.gmic.FrameSmooth).*

#### Description

Author: David Tschumperle. Latest Update: 2016/25/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width (%) / `Width_` | Integer | 10 | |
| Height (%) / `Height_` | Integer | 10 | |
| Roundness / `Roundness` | Double | 0.25 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 319 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.133 G'MIC Freaky B&W node

*This documentation is for version 1.0 of G'MIC Freaky B&W (eu.gmic.FreakyBW).*

#### Description

Author: David Tschumperle. Latest Update: 2015/30/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Strength (%) / `Strength_` | Double | 90 | |
| Oddness (%) / `Oddness_` | Double | 20 | |
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |

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Table 320 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 320 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.134 G'MIC Freaky Details node

*This documentation is for version 1.0 of G'MIC Freaky Details (eu.gmic.FreakyDetails).*

#### Description

Authors: David Tschumperle and Patrick David. Latest Update: 2013/27/02.

This effect has been done following:

This tutorial from Patrick David: http://blog.patdavid.net/2013/02/calvin-hollywood-freaky-details-in-gimp.html

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Integer | 2 | |
| Scale / `Scale` | Double | 10 | |
| Iterations / `Iterations` | Integer | 1 | |

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Table 321 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 321 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 32 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 321 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.135 G'MIC Games & Demos node

*This documentation is for version 1.0 of G'MIC Games & Demos (eu.gmic.GamesDemos).*

### Description

Note: This filter proposes a showcase of some interactive demos, all written as G'MIC scripts.

On most demos, you can use the keyboard shortcut CTRL+D to double the window size (and CTRL+C to go back to the original size). Also, feel free to use the mouse buttons, as they are often used to perform an action.

Author: David Tschumperle. Latest Update: 2014/10/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Selection / `Selection` | Choice | 2048 | **2048**<br>**Blobs Editor**<br>**Bouncing Balls**<br>**Connect-Four**<br>**Fire Effect**<br>**Fireworks**<br>**Fish-Eye Effect**<br>**Fourier Filtering**<br>**Hanoi Tower**<br>**Histogram**<br>**Hough Transform**<br>**Jawbreaker**<br>**Virtual Landscape**<br>**The Game of Life**<br>**Light Effect**<br>**Mandelbrot Explorer**<br>**3D Metaballs**<br>**Minesweeper**<br>**Minimal Path**<br>**Pacman**<br>**Paint**<br>**Plasma Effect**<br>**RGB Quantization**<br>**3D Reflection**<br>**3D Rubber Object**<br>**Shadebobs**<br>**Spline Editor**<br>**3D Starfield**<br>**Tetris**<br>**Tic-Tac-Toe**<br>**3D Waves**<br>**Fractal Whirl** |

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Table 322 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.136 G'MIC Gear node

*This documentation is for version 1.0 of G'MIC Gear (eu.gmic.Gear).*

#### Description

Author: David Tschumperle. Latest Update: 2018/01/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size (%) / `Size_` | Double | 75 | |
| Number of Teeth / `Number_of_Teeth` | Integer | 12 | |
| Elevation (%) / `Elevation_` | Double | 15 | |
| Angle (%) / `Angle_` | Double | 0 | |
| Inner Radius (%) / `Inner_Radius_` | Double | 40 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 323 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.137 G'MIC Gradient Corners node

*This documentation is for version 1.0 of G'MIC Gradient Corners (eu.gmic.GradientCorners).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color 1 (Up/Left Corner) / `Color_1_UpLeft_Corner` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Color 2 (Up/Right Corner) / `Color_2_UpRight_Corner` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Color 3 (Bottom/Left Corner) / `Color_3_BottomLeft_Corner` | Color | r: 0 g: 1 b: 0 a: 0 | |
| Color 4 (Bottom/Right Corner) / `Color_4_BottomRight_Corner` | Color | r: 0 g: 0 b: 1 a: 1 | |
| Colorspace / `Colorspace` | Choice | Linear RGB | **sRGB**<br>**Linear RGB**<br>**Lab** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 324 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.138 G'MIC Gradient Custom Shape node

*This documentation is for version 1.0 of G'MIC Gradient Custom Shape (eu.gmic.GradientCustomShape).*

#### Description

Shape selection:

Note: Shapes with small strokes may lead to incorrect previews.

Gradient parameters:

Color definitions:

Author: David Tschumperle. Latest Update: 2013/03/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Select By / `Select_By` | Choice | Auto | **Auto**<br>**Dark Pixels**<br>**Bright Pixels**<br>**Opaque Pixels** |
| Smoothness / `Smoothness` | Double | 0 | |
| Threshold / `Threshold` | Double | 0 | |
| Preview Shape / `Preview_Shape` | Boolean | On | |

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Table 325 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Colors / `Number_of_Colors` | Integer | 4 | |
| Cycles / `Cycles` | Double | 1 | |
| Offset / `Offset` | Double | 0 | |
| Shading / `Shading` | Double | 128 | |
| Inner Length / `Inner_Length` | Double | 100 | |
| Outer Length / `Outer_Length` | Double | 100 | |
| Spatial Metric / `Spatial_Metric` | Choice | Euclidean | **Chebyshev**<br>**Manhattan**<br>**Euclidean** |
| Color Metric / `Color_Metric` | Choice | RGB | **RGB**<br>**HSV**<br>**Lab** |
| Shade Back to First Color / `Shade_Back_to_First_Color` | Boolean | On | |
| Preview Gradient / `Preview_Gradient` | Boolean | Off | |
| Save Gradient As / `Save_Gradient_As` | String | | |
| Colormap Type / `Colormap_Type` | Choice | User-Defined | **Pre-Defined**<br>**User-Defined** |
| Pre-Defined Colormap / `PreDefined_Colormap` | Integer | 0 | |
| 1st Color / `p1st_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| 2nd Color / `p2nd_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| 3rd Color / `p3rd_Color` | Color | r: 1 g: 1 b: 0 a: 0 | |
| 4th Color / `p4th_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |

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Table 325 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| 5th Color / `p5th_Color` | Color | r: 0 g: 1 b: 1 a: 1 | |
| 6th Color / `p6th_Color` | Color | r: 0 g: 1 b: 0 a: 0 | |
| 7th Color / `p7th_Color` | Color | r: 0 g: 0 b: 1 a: 1 | |
| 8th Color / `p8th_Color` | Color | r: 0.501961 g: 0.501961 b: 0.501961 a: 0.501961 | |
| 9th Color / `p9th_Color` | Color | r: 1 g: 0 b: 1 a: 1 | |
| 10th Color / `p10th_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |

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Table 325 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.139 G'MIC Gradient Linear node

*This documentation is for version 1.0 of G'MIC Gradient Linear (eu.gmic.GradientLinear).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Starting Color / `Starting_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Ending Color / `Ending_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Swap Colors / `Swap_Colors` | Boolean | Off | |
| Angle / `Angle` | Double | 45 | |
| Fade Start / `Fade_Start` | Double | 0 | |
| Fade End / `Fade_End` | Double | 100 | |

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Table 326 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorspace / `Colorspace` | Choice | sRGB | **sRGB**<br>**Linear RGB**<br>**Lab** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.140 G'MIC Gradient Norm node

*This documentation is for version 1.0 of G'MIC Gradient Norm (eu.gmic.GradientNorm).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Linearity / `Linearity` | Double | 0.5 | |
| Min Threshold / `Min_Threshold` | Double | 0 | |
| Max Threshold / `Max_Threshold` | Double | 100 | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 327 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.141 G'MIC Gradient RGB node

*This documentation is for version 1.0 of G'MIC Gradient RGB (eu.gmic.GradientRGB).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Min Threshold / `Min_Threshold` | Double | 0 | |
| Max Threshold / `Max_Threshold` | Double | 100 | |
| Orientation Only / `Orientation_Only` | Boolean | Off | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 328 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.142 G'MIC Gradient Radial node

*This documentation is for version 1.0 of G'MIC Gradient Radial (eu.gmic.GradientRadial).*

#### Description

Author: David Tschumperle. Latest Update: 2015/29/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Starting Color / `Starting_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Ending Color / `Ending_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Swap Colors / `Swap_Colors` | Boolean | Off | |
| Fade Start / `Fade_Start` | Double | 0 | |
| Fade End / `Fade_End` | Double | 100 | |
| Center / `Center` | Double | x: 0.5 y: 0.5 | |
| Colorspace / `Colorspace` | Choice | sRGB | **sRGB**<br>**Linear RGB**<br>**Lab** |

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Table 329 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.143 G'MIC Gradient Random node

*This documentation is for version 1.0 of G'MIC Gradient Random (eu.gmic.GradientRandom).*

### Description

Author: David Tschumperle. Latest Update: 2016/08/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Integer | 32 | |
| Seed / `Seed` | Integer | 0 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Color Balance / `Color_Balance` | Color | r: 0.501961 g: 0.501961 b: 0.501961 a: 0.501961 | |
| Opacity / `Opacity` | Double | 1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 330 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.144 G'MIC Gradient from Line node

*This documentation is for version 1.0 of G'MIC Gradient from Line (eu.gmic.GradientfromLine).*

#### Description

Note: Set length to 0 to release gradient length constraints.

Author: David Tschumperle. Latest Update: 2015/29/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Starting Point / `Starting_Point` | Double | x: 0 y: 0 | |
| Ending Point / `Ending_Point` | Double | x: 1 y: 1 | |
| Sampling / `Sampling` | Double | 100 | |
| Length / `Length` | Integer | 0 | |
| Sort Colors / `Sort_Colors` | Choice | Don't Sort | **Don't Sort**<br>**By Red Component**<br>**By Green Component**<br>**By Blue Component**<br>**By Luminance**<br>**By Blue Chrominance**<br>**By Red Chrominance**<br>**By Lightness** |
| Reverse Gradient / `Reverse_Gradient` | Boolean | Off | |
| Preview Gradient / `Preview_Gradient` | Boolean | On | |
| Save Gradient As / `Save_Gradient_As` | String | | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 331 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.145 G'MIC Grid Cartesian node

*This documentation is for version 1.0 of G'MIC Grid Cartesian (eu.gmic.GridCartesian).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Size / `XSize` | Integer | 10 | |
| Y-Size / `YSize` | Integer | 10 | |

continues on next page

Table 332 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.146 G'MIC Grid Hexagonal node

*This documentation is for version 1.0 of G'MIC Grid Hexagonal (eu.gmic.GridHexagonal).*

### Description

Author: David Tschumperle. Latest Update: 2015/12/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution / `Resolution` | Integer | 32 | |
| Outline / `Outline` | Double | 0.1 | |
| Anti-Aliasing / `AntiAliasing` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 333 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.147 G'MIC Grid Triangular node

*This documentation is for version 1.0 of G'MIC Grid Triangular (eu.gmic.GridTriangular).*

#### Description

Author: David Tschumperle. Latest Update: 2015/08/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Pattern Width / `Pattern_Width` | Integer | 10 | |
| Pattern Height / `Pattern_Height` | Integer | 18 | |
| Pattern Type / `Pattern_Type` | Choice | Horizontal | **Horizontal**<br>**Vertical**<br>**Crossed**<br>**Cube**<br>**Decreasing**<br>**Increasing** |
| Outline Color / `Outline_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |

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Table 334 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.148 G'MIC Halftone node

*This documentation is for version 1.0 of G'MIC Halftone (eu.gmic.Halftone).*

### Description

Image parameters :

Halftone parameters :

Author: David Tschumperle. Latest Update: 2012/23/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Number of Tones / `Number_of_Tones` | Integer | 5 | |
| Size for Dark Tones / `Size_for_Dark_Tones` | Integer | 8 | |
| Size for Bright Tones / `Size_for_Bright_Tones` | Integer | 8 | |
| Shape / `Shape` | Choice | Circle (Inv.) | **Square**<br>**Diamond**<br>**Circle**<br>**Square (Inv.)**<br>**Diamond (Inv.)**<br>**Circle (Inv.)** |
| Smoothness_2 / `Smoothness_2` | Double | 0.1 | |

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Table 335 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 335 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.149 G'MIC Hard Sketch node

*This documentation is for version 1.0 of G'MIC Hard Sketch (eu.gmic.HardSketch).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 300 | |
| Density / `Density` | Double | 50 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Opacity / `Opacity` | Double | 0.1 | |
| Edge / `Edge` | Double | 20 | |
| Fast Approximation / `Fast_Approximation` | Boolean | Off | |

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Table 336 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color Model / `Color_Model` | Choice | Color on white | **Black on white**<br>**White on black**<br>**Black on transparent white**<br>**White on transparent black**<br>**Color on white** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 336 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.150 G'MIC Heart node

*This documentation is for version 1.0 of G'MIC Heart (eu.gmic.Heart).*

#### Description

Author: David Tschumperle. Latest Update: 2018/01/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size (%) / `Size_` | Double | 75 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Antialiasing / `Antialiasing` | Boolean | On | |

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Table 337 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.151 G'MIC Hearts node

*This documentation is for version 1.0 of G'MIC Hearts (eu.gmic.Hearts).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Double | 2 | |

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Table 338 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 338 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 338 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.152 G'MIC Highlight Bloom node

*This documentation is for version 1.0 of G'MIC Highlight Bloom (eu.gmic.HighlightBloom).*

### Description

Author: David Tschumperle. Latest Update: 2016/24/10.

This effect has been inspired by:

This tutorial by Sebastien Guyader and Patrick David: https://pixls.us/articles/highlight-bloom-and-photoillustration-look/

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Details Strength (%) / `Details_Strength_` | Double | 90 | |
| Details Scale / `Details_Scale` | Double | 60 | |
| Smoothness / `Smoothness` | Double | 60 | |
| Highlight (%) / `Highlight_` | Integer | 30 | |
| Contrast (%) / `Contrast_` | Double | 20 | |

continues on next page

Table 339 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 339 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.153 G'MIC Histogram Analysis node

*This documentation is for version 1.0 of G'MIC Histogram Analysis (eu.gmic.HistogramAnalysis).*

#### Description

Author: David Tschumperle. Latest Update: 2016/20/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Clusters / `Number_of_Clusters` | Integer | 256 | |

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Table 340 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 340 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.154 G'MIC Hope Poster node

*This documentation is for version 1.0 of G'MIC Hope Poster (eu.gmic.HopePoster).*

### Description

Author: David Tschumperle. Latest Update: 2013/07/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Gamma / `Gamma` | Double | 0 | |
| Smoothness / `Smoothness` | Double | 3 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 341 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.155 G'MIC Hough Sketch node

*This documentation is for version 1.0 of G'MIC Hough Sketch (eu.gmic.HoughSketch).*

#### Description

Author: David Tschumperle. Latest Update: 2011/18/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 1.25 | |
| Density / `Density` | Double | 10 | |
| Radius / `Radius` | Integer | 5 | |
| Threshold / `Threshold` | Double | 80 | |
| Opacity / `Opacity` | Double | 0.1 | |
| Color Model / `Color_Model` | Choice | Color on white | **Black on white**<br>**White on black**<br>**Black on transparent white**<br>**White on transparent black**<br>**Color on white** |

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Table 342 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 342 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.156 G'MIC Illuminate 2D Shape node

*This documentation is for version 1.0 of G'MIC Illuminate 2D Shape (eu.gmic.Illuminate2DShape).*

#### Description

Input / Output:

Shape:

Parameter Minimal shape area is only active in Multiple colored shapes input mode.

Illumination:

Note: This filter automatically adds illumination to an opaque shape defined over a transparent background.

Author: David Tschumperle. Latest Update: 2018/05/18.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Input Type / `Input_Type` | Choice | Single Opaque Shapes Over Transp. BG | **Single Opaque Shapes Over Transp. BG**<br>**Multiple Colored Shapes Over Transp. BG**<br>**Bump Map**<br>**Normal Map** |

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Table 343 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Type / `Output_Type` | Choice | Illumination | **Illumination**<br>**Bump Map**<br>**Normal Map** |
| Input Guide Color / `Input_Guide_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Keep Base Layer as Input Background / `Keep_Base_Layer_as_Input_Background` | Boolean | On | |
| Keep Transparency in Output / `Keep_Transparency_in_Output` | Boolean | On | |
| Minimal Shape Area / `Minimal_Shape_Area` | Integer | 4 | |
| Preview Detected Shapes / `Preview_Detected_Shapes` | Boolean | Off | |
| Erosion / Dilation / `Erosion__Dilation` | Double | 0 | |
| Smoothness / `Smoothness` | Double | 3 | |
| Bump Factor / `Bump_Factor` | Double | 1 | |
| Avg / Max Weight / `Avg__Max_Weight` | Double | 1 | |
| Resolution / `Resolution` | Choice | 256 | **Full (Slower)**<br>**2048**<br>**1024**<br>**512**<br>**256**<br>**128**<br>**64 (Faster)** |

continues on next page

Table 343 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Blending Mode / `Blending_Mode` | Choice | Hard Light | **Normal**<br>**Lighten**<br>**Screen**<br>**Dodge**<br>**Add**<br>**Darken**<br>**Multiply**<br>**Burn**<br>**Overlay**<br>**Soft Light**<br>**Hard Light**<br>**Grain Merge** |
| Opacity (%) / `Opacity_` | Double | 75 | |
| Ambient (%) / `Ambient_` | Double | 30 | |
| Diffuse (%) / `Diffuse_` | Double | 40 | |
| Specular (%) / `Specular_` | Double | 40 | |
| Shininess / `Shininess` | Double | 80 | |
| Smoothness_2 / `Smoothness_2` | Double | 0.2 | |
| Flatness / `Flatness` | Double | 1 | |
| Linearity / `Linearity` | Double | 0 | |
| Levels / `Levels` | Integer | 0 | |
| Light-X / `LightX` | Double | 2 | |
| Light-Y / `LightY` | Double | -2 | |
| Light-Z / `LightZ` | Double | 2 | |
| Normalize Illumination / `Normalize_Illumination` | Boolean | Off | |
| Open Interactive Preview / `Open_Interactive_Preview` | Boolean | Off | |

continues on next page

Table 343 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 343 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.157 G'MIC Import Data node

*This documentation is for version 1.0 of G'MIC Import Data (eu.gmic.ImportData).*

#### Description

Note: This filter can import any image data read by the G'MIC language interpreter. It includes exotic formats as : Pandore, CImg, Inrimage, AVI/MPEG (requires FFMPEG installed), ...

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filename / `Filename` | N/A | | |
| Normalize / `Normalize` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

continues on next page

Table 344 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.158 G'MIC Ink Wash node

*This documentation is for version 1.0 of G'MIC Ink Wash (eu.gmic.InkWash).*

#### Description

Ink wash controls

Check if you wish visual control on this step

UNcheck to reactivate the other controls

To activate the sliders below chose 'Manual Controls

Author: PhotoComiX. Latest Update: 2011/05/04.

Forum thread about the filter discussion": : http://gimpchat.com/viewtopic.php?f=10&t=914

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `Size` | Double | 0.14 | |
| Amplitude / `Amplitude` | Double | 23 | |
| Skip All Other Steps / `Skip_All_Other_Steps` | Boolean | Off | |
| Smoother Sharpness / `Smoother_Sharpness` | Double | 0.5 | |
| Smoother Edge Protection / `Smoother_Edge_Protection` | Double | 0.54 | |
| Smoother Softness / `Smoother_Softness` | Double | 2.25 | |
| Stretch Contrast / `Stretch_Contrast` | Choice | None | **None**<br>**Automatic**<br>**Automatic & Contrast Mask**<br>**Manual Controls** |
| LN Amplitude / `LN_Amplitude` | Double | 2 | |
| LN Size / `LN_Size` | Double | 6 | |
| LN Neightborhood-Smoothness / `LN_NeightborhoodSmoothness` | Double | 5 | |
| LN Average-Smoothness / `LN_AverageSmoothness` | Double | 20 | |

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Table 345 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.159 G'MIC Inpaint Holes node

*This documentation is for version 1.0 of G'MIC Inpaint Holes (eu.gmic.InpaintHoles).*

### Description

Author: David Tschumperle. Latest Update: 2014/27/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Maximal Area / `Maximal_Area` | Double | 4 | |
| Tolerance / `Tolerance` | Double | 20 | |
| Connectivity / `Connectivity` | Choice | High | **Low**<br>**High** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

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Table 346 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.160 G'MIC Inpaint Morphological node

*This documentation is for version 1.0 of G'MIC Inpaint Morphological (eu.gmic.InpaintMorphological).*

### Description

Note: It is strongly suggested to apply this filter only on a selection around the region to inpaint, to save computation time!

Author: David Tschumperle. Latest Update: 2015/25/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mask Color / `Mask_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Mask Dilation / `Mask_Dilation` | Integer | 0 | |

continues on next page

Table 347 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.161 G'MIC Inpaint Multi-Scale node

*This documentation is for version 1.0 of G'MIC Inpaint Multi-Scale (eu.gmic.InpaintMultiScale).*

#### Description

(Set Number of scales to 0 for automatic scale detection)

Note: Preview and final result may strongly differ.

Author: David Tschumperle. Latest Update: 2015/25/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Scales / `Number_of_Scales` | Integer | 0 | |
| Patch Size / `Patch_Size` | Integer | 9 | |
| Number of Iterations per Scale / `Number_of_Iterations_per_Scale` | Integer | 10 | |
| Blend Size / `Blend_Size` | Integer | 5 | |
| Allow Outer Blending / `Allow_Outer_Blending` | Boolean | On | |
| Mask Color / `Mask_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Mask Dilation / `Mask_Dilation` | Integer | 0 | |
| Preview Progression While Running / `Preview_Progression_While_Running` | Boolean | Off | |

continues on next page

Table 348 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.162 G'MIC Inpaint Patch-Based node

*This documentation is for version 1.0 of G'MIC Inpaint Patch-Based (eu.gmic.InpaintPatchBased).*

### Description

A quick tutorial on how to use this filter can be found here:

G'MIC Inpainting tutorial on Patrick David's blog.: http://blog.patdavid.net/2014/02/getting-around-in-gimp-gmic-inpainting.html

Authors: David Tschumperle and Maxime Daisy. Latest Update: 2015/25/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Patch Size / `Patch_Size` | Integer | 7 | |
| Lookup Size / `Lookup_Size` | Double | 16 | |
| Lookup Factor / `Lookup_Factor` | Double | 0.1 | |
| Blend Size / `Blend_Size` | Double | 1.2 | |
| Blend Threshold / `Blend_Threshold` | Double | 0 | |
| Blend Decay / `Blend_Decay` | Double | 0.05 | |
| Blend Scales / `Blend_Scales` | Integer | 10 | |
| Allow Outer Blending / `Allow_Outer_Blending` | Boolean | On | |
| Mask Color / `Mask_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Mask Dilation / `Mask_Dilation` | Integer | 0 | |

continues on next page

Table 349 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Process by Blocs of Size / `Process_by_Blocs_of_Size` | Choice | 100% | **100%**<br>**75%**<br>**50%**<br>**25%**<br>**10%**<br>**5%**<br>**2%**<br>**1%** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 349 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.163 G'MIC Inpaint Transport-Diffusion node

*This documentation is for version 1.0 of G'MIC Inpaint Transport-Diffusion (eu.gmic.InpaintTransportDiffusion).*

#### Description

Author: David Tschumperle. Latest Update: 2016/10/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness (%) / `Smoothness_` | Double | 75 | |
| Regularization / `Regularization` | Choice | Delaunay-Oriented | **Isotropic**<br>**Delaunay-Oriented**<br>**Edge-Oriented** |
| Regularization Iterations / `Regularization_Iterations` | Integer | 20 | |
| Mask Color / `Mask_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Mask Dilation / `Mask_Dilation` | Integer | 0 | |

continues on next page

Table 350 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.164 G'MIC Intarsia node

*This documentation is for version 1.0 of G'MIC Intarsia (eu.gmic.Intarsia).*

#### Description

Note: Intarsia is a method of Crochet/Knitting with a number of colours, in which a separate ball of yarn is used for each area of colour. This filter creates a HTML version of a graph chart which is solely used for this purpose

Author: David Tschumperle. Latest Update: 2015/09/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Directory / `Output_Directory` | N/A | | |
| Output HTML File / `Output_HTML_File` | String | intarsia.html | |
| Maximum Image Size / `Maximum_Image_Size` | Integer | 512 | |
| Maximum Number of Image Colors / `Maximum_Number_of_Image_Colors` | Integer | 12 | |
| Starting Point / `Starting_Point` | Choice | Top Right | **Top Left**<br>**Top Right**<br>**Bottom Left**<br>**Bottom Right** |
| Loop Method / `Loop_Method` | Choice | Row by Row | **Row by Row**<br>**Column by Column** |
| Add Comment Area in HTML Page / `Add_Comment_Area_in_HTML_Page` | Boolean | On | |
| Preview Progress (%) / `Preview_Progress_` | Double | 100 | |

continues on next page

Table 351 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.165 G'MIC Isophotes node

*This documentation is for version 1.0 of G'MIC Isophotes (eu.gmic.Isophotes).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Levels / `Levels` | Integer | 8 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Filling / `Filling` | Choice | Colors | **Transparent**<br>**Colors** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.166 G'MIC JPEG Artefacts node

*This documentation is for version 1.0 of G'MIC JPEG Artefacts (eu.gmic.JPEGArtefacts).*

### Description

This filter simulates the JPEG compression artifacts, using DCT quantization on 8x8 blocs.

Author: David Tschumperle. Latest Update: 2017/05/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Quality (%) / `Quality_` | Integer | 50 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.167 G'MIC Kaleidoscope Blended node

*This documentation is for version 1.0 of G'MIC Kaleidoscope Blended (eu.gmic.KaleidoscopeBlended).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Angular Tiles / `Angular_Tiles` | Integer | 10 | |
| Smoothness / `Smoothness` | Double | 0.5 | |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 354 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.168 G'MIC Kaleidoscope Polar node

*This documentation is for version 1.0 of G'MIC Kaleidoscope Polar (eu.gmic.KaleidoscopePolar).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| X-Offset (%) / `XOffset_` | Double | 0 | |
| Y-Offset (%) / `YOffset_` | Double | 0 | |
| Radius Cut / `Radius_Cut` | Double | 100 | |
| Angle Cut / `Angle_Cut` | Double | 10 | |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.169 G'MIC Kaleidoscope Symmetry node

*This documentation is for version 1.0 of G'MIC Kaleidoscope Symmetry (eu.gmic.KaleidoscopeSymmetry).*

#### Description

Author: David Tschumperle. Latest Update: 2013/07/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Iterations / `Iterations` | Integer | 4 | |
| Angle / `Angle` | Double | 0 | |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Symmetry Sides / `Symmetry_Sides` | Choice | Backward | **Backward**<br>**Forward**<br>**Swap** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.170 G'MIC Kuwahara node

*This documentation is for version 1.0 of G'MIC Kuwahara (eu.gmic.Kuwahara).*

#### Description

Author: David Tschumperle. Latest Update: 2011/31/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Iterations / `Iterations` | Integer | 2 | |
| Radius / `Radius` | Integer | 5 | |

continues on next page

Table 357 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 357 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 357 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.171 G'MIC Laplacian node

*This documentation is for version 1.0 of G'MIC Laplacian (eu.gmic.Laplacian).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Min Threshold / `Min_Threshold` | Double | 0 | |
| Max Threshold / `Max_Threshold` | Double | 100 | |
| Absolute Value / `Absolute_Value` | Boolean | Off | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |

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Table 358 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 358 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.172 G'MIC Lava node

*This documentation is for version 1.0 of G'MIC Lava (eu.gmic.Lava).*

#### Description

Author: David Tschumperle. Latest Update: 2012/26/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Perturbation / `Perturbation` | Integer | 8 | |
| Smoothness / `Smoothness` | Double | 5 | |
| Scale / `Scale` | Double | 3 | |
| Sharpness / `Sharpness` | Double | 0 | |

continues on next page

Table 359 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 359 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.173 G'MIC Layers to Tiles node

*This documentation is for version 1.0 of G'MIC Layers to Tiles (eu.gmic.LayerstoTiles).*

#### Description

For both parameters, 0 means automatic.

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 0 | |
| Y-Tiles / `YTiles` | Integer | 0 | |

continues on next page

Table 360 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.174 G'MIC Light Glow node

*This documentation is for version 1.0 of G'MIC Light Glow (eu.gmic.LightGlow).*

### Description

Author: David Tschumperle. Latest Update: 2011/21/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Double | 30 | |
| Amplitude / `Amplitude` | Double | 0.5 | |
| Mode / `Mode` | Choice | Overlay | **Burn**<br>**Dodge**<br>**Freeze**<br>**Grain Merge**<br>**Hard Light**<br>**Interpolation**<br>**Lighten**<br>**Multiply**<br>**Overlay**<br>**Reflect**<br>**Soft Light**<br>**Stamp**<br>**Value** |
| Opacity / `Opacity` | Double | 0.8 | |

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Table 361 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 361 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 361 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.175 G'MIC Light Leaks node

*This documentation is for version 1.0 of G'MIC Light Leaks (eu.gmic.LightLeaks).*

#### Description

This filter uses the free light leaks dataset available at :

Lomo Light Leaks: http://www.photoshoptutorials.ws/downloads/mockups-graphics/lomo-light-leaks/

Author: David Tschumperle. Latest Update: 2015/01/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Leak Type / `Leak_Type` | Integer | 0 | |
| Angle / `Angle` | Double | 0 | |
| X-Scale / `XScale` | Double | 1 | |
| Y-Scale / `YScale` | Double | 1 | |
| Hue / `Hue` | Double | 0 | |
| Opacity / `Opacity` | Double | 0.85 | |

continues on next page

Table 362 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Blend Mode / `Blend_Mode` | Choice | Screen | **Normal**<br>**Lighten**<br>**Screen**<br>**Dodge**<br>**Add**<br>**Darken**<br>**Multiply**<br>**Burn**<br>**Overlay**<br>**Soft Light**<br>**Hard Light**<br>**Difference**<br>**Subtract**<br>**Grain Extract**<br>**Grain Merge**<br>**Divide**<br>**Hue**<br>**Saturation**<br>**Value** |
| Output as Separate Layers / `Output_as_Separate_Layers` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 362 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.176 G'MIC Light Patch node

*This documentation is for version 1.0 of G'MIC Light Patch (eu.gmic.LightPatch).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Integer | 5 | |
| Darkness / `Darkness` | Double | 0.7 | |
| Lightness / `Lightness` | Double | 2.5 | |

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Table 363 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 363 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.177 G'MIC Light Rays node

*This documentation is for version 1.0 of G'MIC Light Rays (eu.gmic.LightRays).*

### Description

Author: David Tschumperle. Latest Update: 2011/03/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Double | 80 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Length / `Length` | Double | 1 | |
| Attenuation / `Attenuation` | Double | 0.5 | |
| Transparency / `Transparency` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

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Table 364 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.178 G'MIC Lightning node

*This documentation is for version 1.0 of G'MIC Lightning (eu.gmic.Lightning).*

#### Description

Global parameters:

Initial streak:

Auxiliary streaks:

Author: David Tschumperle. Latest Update: 2014/27/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Streaks / `Number_of_Streaks` | Integer | 20 | |
| Size (%) / `Size_` | Double | 90 | |
| Resolution / `Resolution` | Integer | 256 | |
| Randomness / `Randomness` | Double | 3 | |
| Smoothness / `Smoothness` | Double | 1.5 | |

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Table 365 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Balance / `Balance` | Double | 0.75 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Seed / `Seed` | Integer | 0 | |
| XY-Coordinates / `XYCoordinates` | Double | x: 0.5 y: 0.05 | |
| Angle (deg) / `Angle_deg` | Double | 0 | |
| Thickness (px) / `Thickness_px` | Integer | 6 | |
| Blur / `Blur` | Double | 0.2 | |
| Min Offset (%) / `Min_Offset_` | Double | 25 | |
| Max Offset (%) / `Max_Offset_` | Double | 60 | |
| Min Length (%) / `Min_Length_` | Double | 95 | |
| Max Length (%) / `Max_Length_` | Double | 100 | |
| Min Angle Deviation (deg) / `Min_Angle_Deviation_deg` | Double | 30 | |
| Max Angle Deviation (deg) / `Max_Angle_Deviation_deg` | Double | 40 | |
| Thickness Factor / `Thickness_Factor` | Double | -0.25 | |
| Blur Factor / `Blur_Factor` | Double | -0.1 | |
| Opacity Factor / `Opacity_Factor` | Double | -0.2 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 365 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.179 G'MIC Linify node

*This documentation is for version 1.0 of G'MIC Linify (eu.gmic.Linify).*

### Description

Note:

- This filter is our own implementation of the nice algorithm proposed on the webpage http://linify.me.
- This is a quite resource-demanding filter, so please be patient when running it.
- It actually renders better when applied on small images (<1024).

Author: David Tschumperle. Latest Update: 2017/11/21.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Double | 40 | |
| Spreading / `Spreading` | Double | 2 | |
| Resolution (%) / `Resolution_` | Double | 40 | |
| Line Opacity / `Line_Opacity` | Double | 10 | |
| Line Precision / `Line_Precision` | Integer | 24 | |
| Color Mode / `Color_Mode` | Choice | Subtractive | **Subtractive**<br>**Additive** |
| Preview Progression While Running / `Preview_Progression_While_Running` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 366 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.180 G'MIC Lissajous node

*This documentation is for version 1.0 of G'MIC Lissajous (eu.gmic.Lissajous).*

### Description

Author: David Tschumperle. Latest Update: 2011/18/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution / `Resolution` | Integer | 4096 | |
| X-Size / `XSize` | Double | 0.9 | |
| Y-Size / `YSize` | Double | 0.9 | |
| Z-Size / `ZSize` | Double | 3 | |
| X-Multiplier / `XMultiplier` | Double | 8 | |
| Y-Multiplier / `YMultiplier` | Double | 7 | |
| Z-Multiplier / `ZMultiplier` | Double | 0 | |
| X-Offset / `XOffset` | Double | 0 | |
| Y-Offset / `YOffset` | Double | 0 | |
| Z-Offset / `ZOffset` | Double | 0 | |
| X-Angle / `XAngle` | Double | 0 | |
| Y-Angle / `YAngle` | Double | 0 | |
| Z-Angle / `ZAngle` | Double | 0 | |
| Thickness / `Thickness` | Double | 0 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.181 G'MIC Local Normalization node

*This documentation is for version 1.0 of G'MIC Local Normalization (eu.gmic.LocalNormalization).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 2 | |
| Radius / `Radius` | Integer | 6 | |
| Neighborhood Smoothness / `Neighborhood_Smoothness` | Double | 5 | |
| Average Smoothness / `Average_Smoothness` | Double | 20 | |
| Constrain Values / `Constrain_Values` | Boolean | On | |

continues on next page

Table 368 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 368 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 368 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.182 G'MIC Local Orientation node

*This documentation is for version 1.0 of G'MIC Local Orientation (eu.gmic.LocalOrientation).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Min Threshold / `Min_Threshold` | Double | 0 | |
| Max Threshold / `Max_Threshold` | Double | 100 | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |

continues on next page

Table 369 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 369 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 369 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.183 G'MIC Local Processing node

*This documentation is for version 1.0 of G'MIC Local Processing (eu.gmic.LocalProcessing).*

#### Description

Author: David Tschumperle. Latest Update: 2018/02/28.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Action / `Action` | Choice | Normalize | **Normalize**<br>**Equalize** |
| Strength (%) / `Strength_` | Double | 75 | |
| Neighborhood Size (%) / `Neighborhood_Size_` | Double | 10 | |
| Overlap (%) / `Overlap_` | Double | 50 | |
| Regularization (%) / `Regularization_` | Double | 20 | |
| Process Channels Individually / `Process_Channels_Individually` | Boolean | Off | |

continues on next page

Table 370 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | Linear RGB [All] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 370 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 370 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.184 G'MIC Lomo node

*This documentation is for version 1.0 of G'MIC Lomo (eu.gmic.Lomo).*

#### Description

Authors: Jerome Boulanger and David Tschumperle. Latest Update: 2012/06/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Vignette Size / `Vignette_Size` | Double | 20 | |

continues on next page

Table 371 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 371 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.185 G'MIC Lylejk's Painting node

*This documentation is for version 1.0 of G'MIC Lylejk's Painting (eu.gmic.LylejksPainting).*

#### Description

Authors: Lyle Kroll and David Tschumperle. Latest Update: 2015/23/02.

Filter Explained here: http://www.gimpchat.com/viewtopic.php?f=10&t=2624

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Iterations / `Iterations` | Integer | 10 | |
| Abstraction / `Abstraction` | Integer | 2 | |
| Radius / `Radius` | Integer | 4 | |
| Canvas / `Canvas` | Double | 10 | |

continues on next page

Table 372 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 372 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.186 G'MIC Magic Details node

*This documentation is for version 1.0 of G'MIC Magic Details (eu.gmic.MagicDetails).*

#### Description

Author: David Tschumperle. Latest Update: 2018/01/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 6 | |
| Spatial Scale / `Spatial_Scale` | Double | 3 | |
| Value Scale / `Value_Scale` | Double | 15 | |
| Edges / `Edges` | Double | -0.5 | |
| Smoothness / `Smoothness` | Double | 2 | |

continues on next page

Table 373 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | HSL [Lightness] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]** |

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Table 373 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 373 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.187 G'MIC Make Seamless Diffusion node

*This documentation is for version 1.0 of G'MIC Make Seamless Diffusion (eu.gmic.MakeSeamlessDiffusion).*

#### Description

Note: This filter helps in converting your input pattern as a seamless (a.k.a periodic) texture.

Author: David Tschumperle. Latest Update: 2015/24/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Equalize Light / `Equalize_Light` | Double | 0 | |
| Preview Original / `Preview_Original` | Boolean | Off | |
| Tiled Preview / `Tiled_Preview` | Choice | 2x2 | **None**<br>**2x1**<br>**1x2**<br>**2x2**<br>**3x3**<br>**4x4** |

continues on next page

Table 374 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 374 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.188 G'MIC Make Seamless Patch-Based node

*This documentation is for version 1.0 of G'MIC Make Seamless Patch-Based (eu.gmic.MakeSeamlessPatchBased).*

#### Description

Note: This filter helps in converting your input pattern as a seamless (a.k.a periodic) texture.

Author: David Tschumperle. Latest Update: 2015/15/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Size / `Frame_Size` | Integer | 32 | |
| Patch Size / `Patch_Size` | Integer | 9 | |
| Blend Size / `Blend_Size` | Integer | 0 | |
| Frame Type / `Frame_Type` | Choice | Outer | **Inner**<br>**Outer** |
| Equalize Light / `Equalize_Light` | Double | 100 | |
| Preview Original / `Preview_Original` | Boolean | Off | |

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Table 375 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Tiled Preview / `Tiled_Preview` | Choice | 2x2 | **None**<br>**2x1**<br>**1x2**<br>**2x2**<br>**3x3**<br>**4x4** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.189 G'MIC Mandelbrot Julia Sets node

*This documentation is for version 1.0 of G'MIC Mandelbrot Julia Sets (eu.gmic.MandelbrotJuliaSets).*

#### Description

Fractal Type:

Colormap:

Navigation:

Author: David Tschumperle. Latest Update: 2018/06/27.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Fractal Set / `Fractal_Set` | Choice | Mandelbrot | **Mandelbrot**<br>**Julia** |
| Iterations / `Iterations` | Integer | 1024 | |
| X-Seed (Julia) / `XSeed_Julia` | Double | 0.317 | |
| Y-Seed (Julia) / `YSeed_Julia` | Double | 0.03 | |
| Number of Colors / `Number_of_Colors` | Integer | 16 | |
| Smoothness / `Smoothness` | Integer | 8 | |
| Seed / `Seed` | Integer | 255 | |
| Zoom Center / `Zoom_Center` | Double | x: 0.5<br>y: 0.5 | |
| Zoom Factor / `Zoom_Factor` | Double | 0.25 | |
| Zoom In / `Zoom_In` | Boolean | Off | |
| Center / `Center` | Boolean | Off | |
| Zoom Out / `Zoom_Out` | Boolean | Off | |
| Display Coordinates / `Display_Coordinates` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.190 G'MIC Marble node

*This documentation is for version 1.0 of G'MIC Marble (eu.gmic.Marble).*

#### Description

Author: Preben Soeberg. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Image Weight / `Image_Weight` | Double | 0.5 | |
| Pattern Weight / `Pattern_Weight` | Double | 1 | |
| Pattern Angle / `Pattern_Angle` | Double | 0 | |
| Amplitude / `Amplitude` | Double | 0 | |
| Sharpness / `Sharpness` | Double | 0.4 | |
| Anisotropy / `Anisotropy` | Double | 0.6 | |
| Alpha / `Alpha` | Double | 0.6 | |
| Sigma / `Sigma` | Double | 1.1 | |
| Cut Low / `Cut_Low` | Double | 0 | |
| Cut High / `Cut_High` | Double | 100 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 377 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.191 G'MIC Maze node

*This documentation is for version 1.0 of G'MIC Maze (eu.gmic.Maze).*

#### Description

Author: David Tschumperle. Latest Update: 2011/02/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Cell Size / `Cell_Size` | Integer | 24 | |
| Thickness / `Thickness` | Integer | 1 | |
| Masking / `Masking` | Choice | None | **None**<br>**Render on Dark Areas**<br>**Render on White Areas** |
| Preserve Image Dimension / `Preserve_Image_Dimension` | Boolean | On | |

continues on next page

Table 378 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Maze Type / `Maze_Type` | Choice | Dark Walls | **Dark Walls**<br>**White Walls** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.192 G'MIC Mess with Bits node

*This documentation is for version 1.0 of G'MIC Mess with Bits (eu.gmic.MesswithBits).*

#### Description

Input processing:

Output processing:

Author: David Tschumperle. Latest Update: 2019/01/16.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Pre-Normalize / `PreNormalize` | Boolean | On | |
| Smoothness (%) / `Smoothness_` | Double | 15 | |
| Multiplier / `Multiplier` | Integer | 1 | |
| Reversing / `Reversing` | Choice | Reverse bits | **None**<br>**Reverse bits**<br>**Reverse bytes** |
| Bit Masking (Start) / `Bit_Masking_Start` | Integer | 0 | |
| Bit Masking (End) / `Bit_Masking_End` | Integer | 15 | |
| Opacity (%) / `Opacity_` | Double | 100 | |

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Table 379 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 379 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 379 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.193 G'MIC Mighty Details node

*This documentation is for version 1.0 of G'MIC Mighty Details (eu.gmic.MightyDetails).*

#### Description

Author: David Tschumperle. Latest Update: 2014/08/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 25 | |
| Details Amount / `Details_Amount` | Double | 1 | |
| Details Scale / `Details_Scale` | Double | 25 | |
| Details Smoothness / `Details_Smoothness` | Integer | 1 | |

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Table 380 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 380 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 380 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.194 G'MIC Mineral Mosaic node

*This documentation is for version 1.0 of G'MIC Mineral Mosaic (eu.gmic.MineralMosaic).*

#### Description

Author: David Tschumperle. Latest Update: 2013/01/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Double | 1 | |
| Area / `Area` | Double | 2 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Shade Strength / `Shade_Strength` | Double | 100 | |
| Shade Angle / `Shade_Angle` | Double | 0 | |

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Table 381 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.195 G'MIC Ministeck node

*This documentation is for version 1.0 of G'MIC Ministeck (eu.gmic.Ministeck).*

### Description

Author: David Tschumperle. Latest Update: 2015/14/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Colors / `Number_of_Colors` | Integer | 8 | |
| Resolution (px) / `Resolution_px` | Integer | 64 | |
| Piece Size (px) / `Piece_Size_px` | Integer | 8 | |
| Piece Complexity / `Piece_Complexity` | Integer | 2 | |
| Relief Amplitude / `Relief_Amplitude` | Double | 100 | |
| Relief Size / `Relief_Size` | Double | 0.3 | |
| Add 1px Outline / `Add_1px_Outline` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 382 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.196 G'MIC Mixer CMYK node

*This documentation is for version 1.0 of G'MIC Mixer CMYK (eu.gmic.MixerCMYK).*

### Description

Author: David Tschumperle. Latest Update: 2016/20/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Cyan Factor / `Cyan_Factor` | Double | 1 | |
| Cyan Shift / `Cyan_Shift` | Double | 0 | |
| Cyan Smoothness / `Cyan_Smoothness` | Double | 0 | |
| Magenta Factor / `Magenta_Factor` | Double | 1 | |
| Magenta Shift / `Magenta_Shift` | Double | 0 | |
| Magenta Smoothness / `Magenta_Smoothness` | Double | 0 | |
| Yellow Factor / `Yellow_Factor` | Double | 1 | |
| Yellow Shift / `Yellow_Shift` | Double | 0 | |
| Yellow Smoothness / `Yellow_Smoothness` | Double | 0 | |
| Key Factor / `Key_Factor` | Double | 1 | |
| Key Shift / `Key_Shift` | Double | 0 | |
| Key Smoothness / `Key_Smoothness` | Double | 0 | |
| Tones Range / `Tones_Range` | Choice | All tones | **All tones**<br>**Shadows**<br>**Mid-Tones**<br>**Highlights** |
| Tones Smoothness / `Tones_Smoothness` | Double | 2 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |

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Table 383 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.197 G'MIC Mixer HSV node

*This documentation is for version 1.0 of G'MIC Mixer HSV (eu.gmic.MixerHSV).*

#### Description

Author: David Tschumperle. Latest Update: 2016/20/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Hue Factor / `Hue_Factor` | Double | 1 | |
| Hue Shift / `Hue_Shift` | Double | 0 | |
| Hue Smoothness / `Hue_Smoothness` | Double | 0 | |
| Saturation Factor / `Saturation_Factor` | Double | 1 | |
| Saturation Shift / `Saturation_Shift` | Double | 0 | |
| Saturation Smoothness / `Saturation_Smoothness` | Double | 0 | |
| Value Factor / `Value_Factor` | Double | 1 | |
| Value Shift / `Value_Shift` | Double | 0 | |
| Value Smoothness / `Value_Smoothness` | Double | 0 | |
| Tones Range / `Tones_Range` | Choice | All Tones | **All Tones**<br>**Shadows**<br>**Mid-Tones**<br>**Highlights** |
| Tones Smoothness / `Tones_Smoothness` | Double | 2 | |

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Table 384 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 384 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.198 G'MIC Mixer Lab node

*This documentation is for version 1.0 of G'MIC Mixer Lab (eu.gmic.MixerLab).*

#### Description

Author: David Tschumperle. Latest Update: 2016/20/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Lightness Factor / `Lightness_Factor` | Double | 1 | |
| Lightness Shift / `Lightness_Shift` | Double | 0 | |
| Lightness Smoothness / `Lightness_Smoothness` | Double | 0 | |
| A-Color Factor / `AColor_Factor` | Double | 1 | |
| A-Color Shift / `AColor_Shift` | Double | 0 | |
| A-Color Smoothness / `AColor_Smoothness` | Double | 0 | |
| B-Color Factor / `BColor_Factor` | Double | 1 | |
| B-Color Shift / `BColor_Shift` | Double | 0 | |

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Table 385 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| B-Color Smoothness / `BColor_Smoothness` | Double | 0 | |
| Tones Range / `Tones_Range` | Choice | All Tones | **All Tones**<br>**Shadows**<br>**Mid-Tones**<br>**Highlights** |
| Tones Smoothness / `Tones_Smoothness` | Double | 2 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 385 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.199 G'MIC Mixer PCA node

*This documentation is for version 1.0 of G'MIC Mixer PCA (eu.gmic.MixerPCA).*

### Description

Author: David Tschumperle. Latest Update: 2018/07/18.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Primary Factor / `Primary_Factor` | Double | 0 | |
| Primary Shift / `Primary_Shift` | Double | 0 | |
| Primary Twist / `Primary_Twist` | Double | 0 | |
| Primary Gamma / `Primary_Gamma` | Double | 0 | |
| Secondary Factor / `Secondary_Factor` | Double | 0 | |
| Secondary Shift / `Secondary_Shift` | Double | 0 | |
| Secondary Twist / `Secondary_Twist` | Double | 0 | |
| Secondary Gamma / `Secondary_Gamma` | Double | 0 | |
| Tertiary Factor / `Tertiary_Factor` | Double | 0 | |
| Tertiary Shift / `Tertiary_Shift` | Double | 0 | |
| Tertiary Twist / `Tertiary_Twist` | Double | 0 | |
| Tertiary Gamma / `Tertiary_Gamma` | Double | 0 | |
| Display Color Axes / `Display_Color_Axes` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 386 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.200 G'MIC Mixer RGB node

*This documentation is for version 1.0 of G'MIC Mixer RGB (eu.gmic.MixerRGB).*

### Description

Author: David Tschumperle. Latest Update: 2016/20/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Red Factor / `Red_Factor` | Double | 1 | |
| Red Shift / `Red_Shift` | Double | 0 | |
| Red Smoothness / `Red_Smoothness` | Double | 0 | |
| Green Factor / `Green_Factor` | Double | 1 | |
| Green Shift / `Green_Shift` | Double | 0 | |
| Green Smoothness / `Green_Smoothness` | Double | 0 | |
| Blue Factor / `Blue_Factor` | Double | 1 | |
| Blue Shift / `Blue_Shift` | Double | 0 | |
| Blue Smoothness / `Blue_Smoothness` | Double | 0 | |
| Tones Range / `Tones_Range` | Choice | All Tones | **All Tones**<br>**Shadows**<br>**Mid-Tones**<br>**Highlights** |
| Tones Smoothness / `Tones_Smoothness` | Double | 2 | |

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Table 387 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 387 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.201 G'MIC Mixer YCbCr node

*This documentation is for version 1.0 of G'MIC Mixer YCbCr (eu.gmic.MixerYCbCr).*

#### Description

Author: David Tschumperle. Latest Update: 2016/20/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Luminance Factor / `Luminance_Factor` | Double | 1 | |
| Luminance Shift / `Luminance_Shift` | Double | 0 | |
| Luminance Smoothness / `Luminance_Smoothness` | Double | 0 | |
| Blue Chroma Factor / `Blue_Chroma_Factor` | Double | 1 | |
| Blue Chroma Shift / `Blue_Chroma_Shift` | Double | 0 | |
| Blue Chroma Smoothness / `Blue_Chroma_Smoothness` | Double | 0 | |
| Red Chroma Factor / `Red_Chroma_Factor` | Double | 1 | |
| Red Chroma Shift / `Red_Chroma_Shift` | Double | 0 | |

continues on next page

Table 388 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Red Chroma Smoothness / `Red_Chroma_Smoothness` | Double | 0 | |
| Tones Range / `Tones_Range` | Choice | All Tones | **All Tones**<br>**Shadows**<br>**Mid-Tones**<br>**Highlights** |
| Tones Smoothness / `Tones_Smoothness` | Double | 2 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.202 G'MIC Montage node

*This documentation is for version 1.0 of G'MIC Montage (eu.gmic.Montage).*

### Description

Instructions:

- Don't forget to set the Input layers... option on the left if you have multiple input layers for your montage.
- The Custom layout parameter is only active when Montage type is set to Custom layout. This is basically a string containing expressions such as:

```
\. H\(a,b\) or V\(a,b\) stand respectively for an horizontal and vertical merge of␣
↪two blocks a and b\.

\. R\(a\), stands for a 90\-deg\. rotated version of a block a\. Use RR\(a\) and RRR\
↪(a\) for resp\. 180\-deg and 270\-deg\. rotations\.

\. M\(a\), stands for a X\-mirrored version of a block a\. Use MRR\(a\) for a Y\-
↪mirrored version of a\.
```

- A block a can be a layer index or a nested montage expression itself.
- Layer indices start from 0 (top layer) and are treated periodically.

Click here for a tutorial: http://blog.patdavid.net/2014/05/gmic-montage.html

- video tutorial: http://www.youtube.com/watch?v=iM42vx22gwg

Author: David Tschumperle. Latest Update: 2014/22/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Montage Type / `Montage_Type` | Choice | Auto | **Auto**<br>**Custom Layout**<br>**Horizontal**<br>**Vertical**<br>**Horizontal Array**<br>**Vertical Array** |
| Custom Layout / `Custom_Layout` | String | V(H(0,1),H(2,V(3,4))) | |
| Merging Mode / `Merging_Mode` | Choice | Scaled | **Aligned**<br>**Scaled** |
| Centering / Scale / `Centering__Scale` | Double | 0.5 | |
| Padding (px) / `Padding_px` | Integer | 0 | |
| Frame (px) / `Frame_px` | Integer | 0 | |
| Frame Color / `Frame_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Angle / `Angle` | Double | 0 | |
| Angle Variations / `Angle_Variations` | Double | 0 | |
| Cycle Layers / `Cycle_Layers` | Integer | 0 | |
| Revert Layer Order / `Revert_Layer_Order` | Boolean | Off | |

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Table 389 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output As / `Output_As` | Choice | Single Layer | **Single Layer**<br>**Multiple Layers** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.203 G'MIC Morph Layers node

*This documentation is for version 1.0 of G'MIC Morph Layers (eu.gmic.MorphLayers).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Inter-Frames / `InterFrames` | Integer | 10 | |
| Smoothness / `Smoothness` | Double | 0.2 | |
| Precision / `Precision` | Double | 0.1 | |
| Revert Layers / `Revert_Layers` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.204 G'MIC Morphological Filter node

*This documentation is for version 1.0 of G'MIC Morphological Filter (eu.gmic.MorphologicalFilter).*

### Description

Parameter Size is inactive for Custom kernel.

Author: David Tschumperle. Latest Update: 2016/22/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Action / `Action` | Choice | Erosion | **Erosion**<br>**Dilation**<br>**Opening**<br>**Closing**<br>**Original - Erosion**<br>**Dilation - Original**<br>**Original - Opening**<br>**Closing - Original**<br>**Original - (Opening + Closing)/2**<br>**Closing - Opening** |
| Kernel / `Kernel` | Choice | Square | **Square**<br>**Octagonal**<br>**Circular**<br>**Custom** |
| Size / `Size` | Integer | 5 | |
| Custom Kernel / `Custom_Kernel` | String | 1,0,1; 0,1,0; 1,0,1 | |
| Negative / `Negative` | Boolean | Off | |
| Process Transparency / `Process_Transparency` | Boolean | Off | |

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Table 391 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Stretch** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.205 G'MIC Mosaic node

*This documentation is for version 1.0 of G'MIC Mosaic (eu.gmic.Mosaic).*

#### Description

Author: David Tschumperle. Latest Update: 2016/19/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density (%) / `Density_` | Double | 50 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 392 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 392 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.206 G'MIC Multiscale Operator node

*This documentation is for version 1.0 of G'MIC Multiscale Operator (eu.gmic.MultiscaleOperator).*

#### Description

Author: David Tschumperle. Latest Update: 2016/30/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Scales / `Number_of_Scales` | Integer | 4 | |
| Starting Scale (%) / `Starting_Scale_` | Double | 25 | |
| Ending Scale (%) / `Ending_Scale_` | Double | 100 | |
| Non-Linearity / `NonLinearity` | Double | 0 | |
| Rescaling / `Rescaling` | Choice | Lanczsos | **Bloc**<br>**Linear**<br>**Cubic**<br>**Lanczsos** |
| X-Centering / `XCentering` | Double | 0.5 | |

continues on next page

Table 393 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Y-Centering / `YCentering` | Double | 0.5 | |
| Angle / `Angle` | Double | 0 | |
| Enable Interpolated Motion / `Enable_Interpolated_Motion` | Boolean | Off | |
| Ending X-Centering / `Ending_XCentering` | Double | 0.5 | |
| Ending Y-Centering / `Ending_YCentering` | Double | 0.5 | |
| Ending Angle / `Ending_Angle` | Double | 0 | |
| G'MIC Operator / `GMIC_Operator` | String | | |
| Return Scaling / `Return_Scaling` | Choice | None | **None**<br>**Bloc**<br>**Linear**<br>**Cubic**<br>**Lanczos** |
| Lock Return Scaling to Source Layer / `Lock_Return_Scaling_to_Source_Layer` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 393 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.207 G'MIC Neon Lightning node

*This documentation is for version 1.0 of G'MIC Neon Lightning (eu.gmic.NeonLightning).*

### Description

Author: David Tschumperle. Latest Update: 2015/30/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Source / `Source` | Double | x: 0.5<br>y: 0.5 | |
| R0 / `R0` | Double | 0 | |
| Destination / `Destination` | Double | x: 0.5<br>y: 0.5 | |
| R1 / `R1` | Double | 100 | |
| Density / `Density` | Integer | 50 | |

continues on next page

Table 394 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Glow / `Glow` | Double | 0.7 | |
| Thickness / `Thickness` | Double | 3 | |
| Color / `Color` | Color | r: 0.509804 g: 0.313726 b: 0.196078 a: 0.196078 | |
| Color Dispersion / `Color_Dispersion` | Double | 0.25 | |
| Transparency / `Transparency` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 394 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.208 G'MIC Newton Fractal node

*This documentation is for version 1.0 of G'MIC Newton Fractal (eu.gmic.NewtonFractal).*

#### Description

Fractal Type:

Rendering:

Tips for Custom expressions:

- Variables i0,i1 stand for the real and imaginary parts of the iterated complex number.
- Variable i2 is the number of iterations required for convergence.
- Variable z is the complex number with value [ i0,i1 ].
- Functions p(z), dp(z) and d2p(z) are the expressions used for computing the fractal.

Note: Anti-aliasing is applied on final rendering only, not on preview.

Navigation:

Author: David Tschumperle. Latest Update: 2019/01/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Expression / `Expression` | Choice | z^^3 - 1 | **Custom**<br>**z^^2 - 1**<br>**z^^3 - 1**<br>**z^^5 - 1**<br>**z^^6 + z^^3 - 1**<br>**z^^8 + 15*z^^4 - 1** |
| p(z) / `pz` | String | rot(35)*z^^3 - z^^2 + 1 | |
| p'(z) / `pz2` | String | 3*z^^2 - 2*z | |
| p"(z) / `pz3` | String | 6*z - 2 | |
| Descent method / `Descent_method` | Choice | Newton | **Secant**<br>**Newton**<br>**Householder** |
| Max iterations / `Max_iterations` | Integer | 200 | |
| Precision / `Precision` | Double | 2 | |
| Coloring / `Coloring` | Choice | By Iteration | **By Custom Expression**<br>**By Iteration**<br>**By Value** |
| Number of Colors / `Number_of_Colors` | Integer | 16 | |
| Smoothness / `Smoothness` | Integer | 8 | |
| Seed / `Seed` | Integer | 255 | |
| Colorspace / `Colorspace` | Choice | HSV | **HSI**<br>**HSL**<br>**HSV** |
| Hue min (%) / `Hue_min_` | Double | 100 | |
| Hue max (%) / `Hue_max_` | Double | 150 | |
| Lightness min (%) / `Lightness_min_` | Double | 20 | |
| Lightness max (%) / `Lightness_max_` | Double | 400 | |

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Table 395 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorspace_2 / `Colorspace_2` | Choice | HSV | **RGB**<br>**HSI**<br>**HSL**<br>**HSV**<br>**Lab** |
| Pre-Process / `PreProcess` | Choice | Normalize | **None**<br>**Equalize**<br>**Normalize**<br>**Equalize and Normalize** |
| Channel #1 / `Channel_1` | String | carg(-z) | |
| Channel #2 / `Channel_2` | String | (i0 + i1)/2 | |
| Channel #3 / `Channel_3` | String | 10*(i2^0.4) | |
| Post-Process / `PostProcess` | Choice | None | **None**<br>**Equalize**<br>**Normalize**<br>**Equalize and Normalize** |
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Hue (%) / `Hue_` | Double | 0 | |
| Saturation (%) / `Saturation_` | Double | 0 | |
| Equalization (%) / `Equalization_` | Double | 0 | |
| Anti-aliasing / `Antialiasing` | Choice | x2 | **x1**<br>**x1.5**<br>**x2**<br>**x2.5**<br>**x3**<br>**x3.5**<br>**4** |

continues on next page

Table 395 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Zoom Center / `Zoom_Center` | Double | x: 0.5<br>y: 0.5 | |
| Zoom Factor / `Zoom_Factor` | Double | 0.5 | |
| Angle / `Angle` | Double | 0 | |
| Zoom In / `Zoom_In` | Boolean | Off | |
| Center / `Center` | Boolean | Off | |
| Zoom Out / `Zoom_Out` | Boolean | Off | |
| Reset View / `Reset_View` | Boolean | Off | |
| Display Coordinates on Preview Window / `Display_Coordinates_on_Preview_Window` | Boolean | On | |
| Preview subsampling / `Preview_subsampling` | Choice | x2 | **None**<br>**x1.5**<br>**x2**<br>**x2.5**<br>**x3**<br>**x3.5**<br>**x4** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

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Table 395 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.209 G'MIC Noise Additive node

*This documentation is for version 1.0 of G'MIC Noise Additive (eu.gmic.NoiseAdditive).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 10 | |
| Noise Type / `Noise_Type` | Choice | Gaussian | **Gaussian**<br>**Uniform**<br>**Salt and Pepper**<br>**Poisson** |

continues on next page

Table 396 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | Cut | **None**<br>**Cut**<br>**Normalize** |

continues on next page

Table 396 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 396 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.210 G'MIC Noise Perlin node

*This documentation is for version 1.0 of G'MIC Noise Perlin (eu.gmic.NoisePerlin).*

#### Description

1st scale:

2nd scale:

3rd scale:

4th scale:

Author: David Tschumperle. Latest Update: 2019/01/24.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Random Seed / `Random_Seed` | Integer | 0 | |
| Amplitude / `Amplitude` | Double | 100 | |
| Scale (%) / `Scale_` | Double | 8 | |
| X/Y-Ratio / `XYRatio` | Double | 0 | |
| Amplitude_2 / `Amplitude_2` | Double | 0 | |
| Scale (%)_2 / `Scale__2` | Double | 4 | |

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Table 397 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X/Y-Ratio_2 / `XYRatio_2` | Double | 0 | |
| Amplitude_3 / `Amplitude_3` | Double | 0 | |
| Scale (%)_3 / `Scale__3` | Double | 2 | |
| X/Y-Ratio_3 / `XYRatio_3` | Double | 0 | |
| Amplitude_4 / `Amplitude_4` | Double | 0 | |
| Scale (%)_4 / `Scale__4` | Double | 1 | |
| X/Y-Ratio_4 / `XYRatio_4` | Double | 0 | |

continues on next page

Table 397 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | RGB [All] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]** |

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Table 397 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 397 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.211 G'MIC Noise Spread node

*This documentation is for version 1.0 of G'MIC Noise Spread (eu.gmic.NoiseSpread).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Variations / `XVariations` | Double | 4 | |
| Y-Variations / `YVariations` | Double | 4 | |

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Table 398 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 398 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 398 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.212 G'MIC Old Photograph node

*This documentation is for version 1.0 of G'MIC Old Photograph (eu.gmic.OldPhotograph).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Vignette Strength / `Vignette_Strength` | Double | 200 | |
| Vignette Min Radius / `Vignette_Min_Radius` | Double | 50 | |
| Vignette Max Radius / `Vignette_Max_Radius` | Double | 85 | |

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Table 399 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.213 G'MIC Old-Movie Stripes node

*This documentation is for version 1.0 of G'MIC Old-Movie Stripes (eu.gmic.OldMovieStripes).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frequency / `Frequency` | Double | 10 | |

continues on next page

Table 400 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

continues on next page

Table 400 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 400 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.214 G'MIC Oldschool 8bits node

*This documentation is for version 1.0 of G'MIC Oldschool 8bits (eu.gmic.Oldschool8bits).*

#### Description

Author: David Tschumperle. Latest Update: 2011/02/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scale / `Scale` | Double | 25 | |
| Dithering / `Dithering` | Double | 800 | |
| Levels / `Levels` | Integer | 16 | |

continues on next page

Table 401 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 401 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.215 G'MIC Op Art node

*This documentation is for version 1.0 of G'MIC Op Art (eu.gmic.OpArt).*

#### Description

Note: If you set the parameter Shape to Custom layers, the different shapes used to map the pixel intensities will be defined as the Number of scales top layers of your image. Don't forget to set also Input layers to All to be sure these layers are passed to the filter.

Author: David Tschumperle. Latest Update: 2013/16/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Shape / Shape | Choice | Circles | **Custom Layers**<br>**Circles**<br>**Squares**<br>**Diamonds**<br>**Triangles**<br>**Horizontal Stripes**<br>**Vertical Stripes**<br>**Balls**<br>**Hearts**<br>**Stars**<br>**Arrows**<br>**Truchet**<br>**Circles (Outline)**<br>**Squares (Outline)**<br>**Diamonds (Outline)**<br>**Triangles (Outline)**<br>**Hearts (Outline)**<br>**Stars (Outline)**<br>**Arrows (Outline)** |
| Number of Scales / Number_of_Scales | Integer | 16 | |
| Resolution / Resolution | Double | 10 | |
| Zoom Factor / Zoom_Factor | Integer | 2 | |
| Minimal Size / Minimal_Size | Double | 5 | |
| Maximal Size / Maximal_Size | Double | 90 | |
| Stencil Type / Stencil_Type | Choice | Black & White | **Black & White**<br>**RGB**<br>**Color** |
| Allow Angle / Allow_Angle | Choice | 0 deg. | **0 deg.**<br>**90 deg.**<br>**180 deg.** |
| Negative / Negative | Boolean | On | |
| Antialiasing / Antialiasing | Boolean | On | |

continues on next page

Table 402 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 402 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.216 G'MIC Pack node

*This documentation is for version 1.0 of G'MIC Pack (eu.gmic.Pack).*

#### Description

This filter tries to pack all input layers into a single image, while trying to minimize the empty areas. This problem being NP-hard, the algorithm finds (of course) a non-optimal, but often acceptable solution to this packing problem.

Author: David Tschumperle. Latest Update: 2019/03/20.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Order By / `Order_By` | Choice | Maximum Dimension | **Width**<br>**Height**<br>**Maximum Dimension**<br>**Area**<br>**Name** |
| Tends to Be Square / `Tends_to_Be_Square` | Boolean | On | |
| Force Transparency / `Force_Transparency` | Boolean | On | |
| Add Image Label / `Add_Image_Label` | Boolean | Off | |

continues on next page

Table 403 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Font Height (px) / `Font_Height_px` | Double | 16 | |
| Font Colors / `Font_Colors` | Choice | Black on white | **White on black**<br>**Black on white** |
| Output Coordinates File / `Output_Coordinates_File` | Boolean | Off | |
| Output Folder / `Output_Folder` | N/A | | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 403 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.217 G'MIC Pack Sprites node

*This documentation is for version 1.0 of G'MIC Pack Sprites (eu.gmic.PackSprites).*

#### Description

Notes:

- Parameters Width and Height are considered only when No masking mode is selected.
- Set different sprites on different layers to pack multiple sprites at the same time.

Click here for a video tutorial: http://www.youtube.com/watch?v=bpg7CGH7vCM

Author: David Tschumperle. Latest Update: 2013/24/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Scales / `Number_of_Scales` | Integer | 5 | |
| Minimal Scale (%) / `Minimal_Scale_` | Double | 25 | |
| Allow Angle / `Allow_Angle` | Choice | Any | **0 deg.**<br>**180 deg.**<br>**90 deg.**<br>**Any** |

continues on next page

Table 404 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spacing / `Spacing` | Integer | 1 | |
| Precision / `Precision` | Integer | 7 | |
| Masking / `Masking` | Choice | No Masking | **No Masking**<br>**Mask as Bottom Layer** |
| Width / `Width` | Integer | 512 | |
| Height / `Height` | Integer | 512 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 404 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.218 G'MIC Painting node

*This documentation is for version 1.0 of G'MIC Painting (eu.gmic.Painting).*

#### Description

Authors: Lyle Kroll, Angelo Lama and David Tschumperle.

Latest Update: 2011/28/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Abstraction / `Abstraction` | Integer | 5 | |
| Details Scale / `Details_Scale` | Double | 2.5 | |
| Color / `Color` | Double | 1.5 | |
| Smoothness / `Smoothness` | Double | 50 | |
| Sharpen Shades / `Sharpen_Shades` | Boolean | On | |

continues on next page

Table 405 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 405 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.219 G'MIC Paper Texture node

*This documentation is for version 1.0 of G'MIC Paper Texture (eu.gmic.PaperTexture).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 406 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 406 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.220 G'MIC Pen Drawing node

*This documentation is for version 1.0 of G'MIC Pen Drawing (eu.gmic.PenDrawing).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 10 | |

continues on next page

Table 407 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 407 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.221 G'MIC Pencil node

*This documentation is for version 1.0 of G'MIC Pencil (eu.gmic.Pencil).*

#### Description

Author: David Tschumperle. Latest Update: 2013/05/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `Size` | Double | 0.3 | |
| Amplitude / `Amplitude` | Double | 60 | |
| Hue / `Hue` | Double | 0 | |
| Saturation / `Saturation` | Double | 0 | |

continues on next page

Table 408 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 408 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.222 G'MIC Pencil Portrait node

*This documentation is for version 1.0 of G'MIC Pencil Portrait (eu.gmic.PencilPortrait).*

#### Description

Authors: Jamac4k and David Tschumperle. Latest Update: 2015/29/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Stroke Length / `Stroke_Length` | Double | 30 | |
| Stroke Angle / `Stroke_Angle` | Double | 120 | |
| Contour Threshold / `Contour_Threshold` | Double | 1 | |
| Opacity / `Opacity` | Double | 0.5 | |
| Color / `Color` | Color | r: 0.564706<br>g: 0.309804<br>b: 0.0823529<br>a: 0.0823529 | |

continues on next page

Table 409 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 409 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.223 G'MIC Perspective node

*This documentation is for version 1.0 of G'MIC Perspective (eu.gmic.Perspective).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Angle / `XAngle` | Double | 1.73 | |
| Y-Angle / `YAngle` | Double | 0 | |
| Zoom / `Zoom` | Double | 1 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| X-Offset / `XOffset` | Double | 0 | |
| Y-Offset / `YOffset` | Double | 0 | |

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Table 410 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Boundary / `Boundary` | Choice | Periodic | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.224 G'MIC Pixel Sort node

*This documentation is for version 1.0 of G'MIC Pixel Sort (eu.gmic.PixelSort).*

### Description

Sorting parameters:

Masking parameters:

Note: This filter implements one version of the algorithm described here :

http://satyarth.me/articles/pixel-sorting/

Author: David Tschumperle. Latest Update: 2016/05/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Order / `Order` | Choice | Increasing | **Decreasing**<br>**Increasing** |
| Axis / `Axis` | Choice | X-axis | **X-axis**<br>**Y-axis**<br>**X-axis Then Y-axis**<br>**Y-axis Then X-axis** |

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Table 411 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Sorting Criterion / `Sorting_Criterion` | Choice | Red | **Red**<br>**Green**<br>**Blue**<br>**Intensity**<br>**Luminance**<br>**Lightness**<br>**Hue**<br>**Saturation**<br>**Minimum**<br>**Maximum**<br>**Random** |
| Mask By / `Mask_By` | Choice | Criterion | **Bottom Layer**<br>**Criterion**<br>**Contours**<br>**Random** |
| Lower Mask Threshold (%) / `Lower_Mask_Threshold_` | Double | 0 | |
| Higher Mask Threshold (%) / `Higher_Mask_Threshold_` | Double | 100 | |
| Mask Smoothness (%) / `Mask_Smoothness_` | Double | 0 | |
| Invert Mask / `Invert_Mask` | Boolean | Off | |
| Preview Mask / `Preview_Mask` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 411 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.225 G'MIC Plaid node

*This documentation is for version 1.0 of G'MIC Plaid (eu.gmic.Plaid).*

### Description

Author: David Tschumperle. Latest Update: 2011/16/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Line / `Line` | Double | 50 | |
| Number of Angles / `Number_of_Angles` | Integer | 2 | |
| Starting Angle / `Starting_Angle` | Double | 0 | |
| Angle Range / `Angle_Range` | Double | 90 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Sharpen / `Sharpen` | Double | 300 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.226 G'MIC Plasma node

*This documentation is for version 1.0 of G'MIC Plasma (eu.gmic.Plasma).*

### Description

Author: David Tschumperle. Latest Update: 2011/20/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Alpha / `Alpha` | Double | 0.5 | |
| Beta / `Beta` | Double | 0 | |
| Scale / `Scale` | Integer | 8 | |
| Randomize / `Randomize` | Boolean | Off | |
| Transparency / `Transparency` | Boolean | Off | |
| Color Balance / `Color_Balance` | Color | r: 0.501961 g: 0.501961 b: 0.501961 a: 0.501961 | |

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Table 413 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.227 G'MIC Polar Transform node

*This documentation is for version 1.0 of G'MIC Polar Transform (eu.gmic.PolarTransform).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset / `Preset` | Choice | Custom Transform | **Custom Transform**<br>**Inverse Radius**<br>**Swap Radius / Angle** |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Radius / `Radius` | String | r + R/10*cos(a*5) | |
| Angle / `Angle` | String | a | |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 414 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.228 G'MIC Polaroid node

*This documentation is for version 1.0 of G'MIC Polaroid (eu.gmic.Polaroid).*

#### Description

Author: David Tschumperle. Latest Update: 2016/20/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frame Size / `Frame_Size` | Integer | 10 | |
| Bottom Size / `Bottom_Size` | Integer | 20 | |
| X-Shadow / `XShadow` | Double | 0 | |
| Y-Shadow / `YShadow` | Double | 0 | |
| Smoothness / `Smoothness` | Double | 3 | |
| Curvature / `Curvature` | Double | 0 | |
| Angle / `Angle` | Double | 20 | |
| Vignette Strength / `Vignette_Strength` | Double | 50 | |
| Vignette Min Radius / `Vignette_Min_Radius` | Double | 70 | |
| Vignette Max Radius / `Vignette_Max_Radius` | Double | 95 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 415 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.229 G'MIC Polka Dots node

*This documentation is for version 1.0 of G'MIC Polka Dots (eu.gmic.PolkaDots).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `Size` | Double | 80 | |
| Density / `Density` | Double | 20 | |
| First Offset / `First_Offset` | Double | 50 | |
| Second Offset / `Second_Offset` | Double | 50 | |
| Angle / `Angle` | Double | 0 | |
| Aliasing / `Aliasing` | Double | 0.5 | |
| Shading / `Shading` | Double | 0.1 | |
| Opacity / `Opacity` | Double | 1 | |
| Color / `Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 416 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.230 G'MIC Polygonize Delaunay node

*This documentation is for version 1.0 of G'MIC Polygonize Delaunay (eu.gmic.PolygonizeDelaunay).*

### Description

Author: David Tschumperle. Latest Update: 2018/06/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density (%) / `Density_` | Double | 40 | |
| Edges / `Edges` | Double | 5 | |
| Boundaries (%) / `Boundaries_` | Double | 75 | |
| Smoothness / `Smoothness` | Double | 0.5 | |

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Table 417 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Filling / `Filling` | Choice | Average | **Black**<br>**White**<br>**Random**<br>**Average**<br>**Linear** |
| Outline (%) / `Outline_` | Double | 50 | |
| Outline Color / `Outline_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Anti-Aliasing / `AntiAliasing` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5 y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 417 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.231 G'MIC Polygonize Energy node

*This documentation is for version 1.0 of G'MIC Polygonize Energy (eu.gmic.PolygonizeEnergy).*

#### Description

Click here for a detailed description of this filter.: http://www.gimpchat.com/viewtopic.php?f=28&t=9174

Author: David Tschumperle. Latest Update: 2013/02/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Integer | 300 | |
| Smoothness / `Smoothness` | Double | 10 | |
| Minimal Area / `Minimal_Area` | Double | 10 | |
| X-Resolution / `XResolution` | Double | 10 | |
| Y-Resolution / `YResolution` | Double | 10 | |
| Outline Color / `Outline_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5 y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 418 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.232 G'MIC Pop Shadows node

*This documentation is for version 1.0 of G'MIC Pop Shadows (eu.gmic.PopShadows).*

#### Description

Authors: Morgan Hardwood and David Tschumperle. Latest Update: 2017/03/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Strength / `Strength` | Double | 0.75 | |
| Scale / `Scale` | Double | 5 | |
| Post-Normalize / `PostNormalize` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.233 G'MIC Poster Edges node

*This documentation is for version 1.0 of G'MIC Poster Edges (eu.gmic.PosterEdges).*

#### Description

Click here for a detailed description of this filter.: http://www.davidrevoy.com/article147/gmic-new-filter-poster-edges

Authors: David Tschumperle and David Revoy. Latest Update: 2012/30/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Image Smoothness / `Image_Smoothness` | Double | 20 | |
| Edge Threshold / `Edge_Threshold` | Double | 60 | |
| Edge Shade / `Edge_Shade` | Double | 5 | |
| Edge Thickness / `Edge_Thickness` | Double | 0 | |

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Table 420 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Edge Antialiasing / `Edge_Antialiasing` | Double | 10 | |
| Posterization Level / `Posterization_Level` | Integer | 0 | |
| Posterization Antialiasing / `Posterization_Antialiasing` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 420 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.234 G'MIC Posterize node

*This documentation is for version 1.0 of G'MIC Posterize (eu.gmic.Posterize).*

#### Description

Author: David Tschumperle. Latest Update: 2016/25/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 150 | |
| Edges (%) / `Edges_` | Double | 30 | |
| Paint / `Paint` | Double | 1 | |
| Colors / `Colors` | Integer | 12 | |
| Minimal Area / `Minimal_Area` | Integer | 0 | |

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Table 421 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Outline (%) / `Outline_` | Double | 0 | |
| Normalize Colors / `Normalize_Colors` | Boolean | Off | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |

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Table 421 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.235 G'MIC Puzzle node

*This documentation is for version 1.0 of G'MIC Puzzle (eu.gmic.Puzzle).*

#### Description

Pattern parameters:

Blending parameters:

Recomposition parameters:

Author: David Tschumperle. Latest Update: 2014/06/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 5 | |
| Y-Tiles / `YTiles` | Integer | 5 | |
| Curvature / `Curvature` | Double | 0.5 | |
| Connectors Centering / `Connectors_Centering` | Double | 0 | |

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Table 422 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Connectors Variability / `Connectors_Variability` | Double | 0 | |
| Relief Smoothness / `Relief_Smoothness` | Double | 0.3 | |
| Relief Contrast / `Relief_Contrast` | Double | 100 | |
| Outline Smoothness / `Outline_Smoothness` | Double | 0.2 | |
| Outline Contrast / `Outline_Contrast` | Double | 255 | |
| Scale / `Scale` | Double | 100 | |
| Scale Variations / `Scale_Variations` | Double | 0 | |
| Angle / `Angle` | Double | 0 | |
| Angle Variations / `Angle_Variations` | Double | 0 | |
| Shuffle Pieces / `Shuffle_Pieces` | Boolean | Off | |
| Additional Outline / `Additional_Outline` | Boolean | Off | |
| Output Each Piece on a Different Layer / `Output_Each_Piece_on_a_Different_Layer` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

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Table 422 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.236 G'MIC Quadrangle node

*This documentation is for version 1.0 of G'MIC Quadrangle (eu.gmic.Quadrangle).*

### Description

Author: David Tschumperle. Latest Update: 2017/10/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Top-Left Vertex / `TopLeft_Vertex` | Double | x: 0.05<br>y: 0.05 | |
| Top-Right Vertex / `TopRight_Vertex` | Double | x: 0.95<br>y: 0.25 | |
| Bottom-Right Vertex / `BottomRight_Vertex` | Double | x: 0.6<br>y: 0.95 | |
| Bottom-Left Vertex / `BottomLeft_Vertex` | Double | x: 0.4<br>y: 0.95 | |
| Interpolation / `Interpolation` | Choice | Linear | **Nearest Neighbor**<br>**Linear** |

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Table 423 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Preview Type / `Preview_Type` | Choice | Output | **Input**<br>**Output**<br>**Both** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 423 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.237 G'MIC Quadtree Variations node

*This documentation is for version 1.0 of G'MIC Quadtree Variations (eu.gmic.QuadtreeVariations).*

#### Description

For 'Ellipse painting' only:

Author: David Tschumperle. Latest Update: 2017/15/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mode / `Mode` | Choice | Squares | **Squares**<br>**Sierpinksi Design**<br>**Ellipse Painting** |
| Precision / `Precision` | Integer | 1024 | |
| Homogeneity / `Homogeneity` | Double | 0.5 | |
| Outline / `Outline` | Integer | 0 | |
| Primary Radius / `Primary_Radius` | Double | 3 | |
| Secondary Radius / `Secondary_Radius` | Double | 1.5 | |
| Anisotropy / `Anisotropy` | Double | 1 | |

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Table 424 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Only Leafs / `Only_Leafs` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 424 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.238 G'MIC Quick Copyright node

*This documentation is for version 1.0 of G'MIC Quick Copyright (eu.gmic.QuickCopyright).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Text / `Text` | String | \251 G'MIC | |
| Size / `Size` | Integer | 27 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Outline / `Outline` | Integer | 1 | |
| Position / `Position` | Choice | Bottom-Right | **Up-Left**<br>**Up-Right**<br>**Bottom-Left**<br>**Bottom-Right** |

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Table 425 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Offset / `Offset` | Integer | 5 | |
| Orientation / `Orientation` | Choice | 0 deg. | **-90 deg.**<br>**0 deg.**<br>**+90 deg.**<br>**+180 deg.** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.239 G'MIC Rain & Snow node

*This documentation is for version 1.0 of G'MIC Rain & Snow (eu.gmic.RainSnow).*

### Description

Author: David Tschumperle. Latest Update: 2015/29/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Angle / `Angle` | Double | 65 | |
| Speed / `Speed` | Double | 10 | |
| Density (%) / `Density_` | Double | 50 | |
| Radius / `Radius` | Double | 0.1 | |
| Gamma / `Gamma` | Double | 1 | |
| Opacity / `Opacity` | Double | 1 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 426 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.240 G'MIC Rainbow node

*This documentation is for version 1.0 of G'MIC Rainbow (eu.gmic.Rainbow).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Left Position / `Left_Position` | Double | 80 | |
| Right Position / `Right_Position` | Double | 80 | |
| Left Slope / `Left_Slope` | Double | 175 | |
| Right Slope / `Right_Slope` | Double | 175 | |
| Thinness / `Thinness` | Double | 3 | |
| Opacity / `Opacity` | Double | 80 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 427 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.241 G'MIC Raindrops node

*This documentation is for version 1.0 of G'MIC Raindrops (eu.gmic.Raindrops).*

#### Description

Author: David Tschumperle. Latest Update: 2012/28/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 80 | |
| Density / `Density` | Double | 0.1 | |
| Wavelength / `Wavelength` | Double | 1 | |
| Merging Steps / `Merging_Steps` | Integer | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 428 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.242 G'MIC Random node

*This documentation is for version 1.0 of G'MIC Random (eu.gmic.Random).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 10 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 429 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.243 G'MIC Random Color Ellipses node

*This documentation is for version 1.0 of G'MIC Random Color Ellipses (eu.gmic.RandomColorEllipses).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Integer | 400 | |
| Radius / `Radius` | Double | 8 | |
| Opacity / `Opacity` | Double | 0.1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 430 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.244 G'MIC Random Shade Stripes node

*This documentation is for version 1.0 of G'MIC Random Shade Stripes (eu.gmic.RandomShadeStripes).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Frequency / `Frequency` | Double | 30 | |
| Orientation / `Orientation` | Choice | Vertical | **Horizontal**<br>**Vertical** |
| Darkness / `Darkness` | Double | 0.8 | |
| Lightness / `Lightness` | Double | 1.3 | |

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Table 431 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 431 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 431 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.245 G'MIC Red-Eye Attenuation node

*This documentation is for version 1.0 of G'MIC Red-Eye Attenuation (eu.gmic.RedEyeAttenuation).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Threshold / `Threshold` | Double | 75 | |
| Smoothness / `Smoothness` | Double | 3.5 | |
| Factor / `Factor` | Double | 0.1 | |

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Table 432 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.246 G'MIC Reflection node

*This documentation is for version 1.0 of G'MIC Reflection (eu.gmic.Reflection).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Height / `Height` | Double | 50 | |
| Attenuation / `Attenuation` | Double | 1 | |
| Color / `Color` | Color | r: 0.431373 g: 0.627451 b: 0.745098 a: 0.745098 | |
| Waves Amplitude / `Waves_Amplitude` | Double | 0 | |
| Waves Smoothness / `Waves_Smoothness` | Double | 1.5 | |
| X-Angle / `XAngle` | Double | 0 | |
| Y-Angle / `YAngle` | Double | -3.3 | |
| Focale / `Focale` | Double | 7 | |
| Zoom / `Zoom` | Double | 1.5 | |

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Table 433 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.247 G'MIC Relief Light node

*This documentation is for version 1.0 of G'MIC Relief Light (eu.gmic.ReliefLight).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ambient Lightness / `Ambient_Lightness` | Double | 0.3 | |
| Specular Lightness / `Specular_Lightness` | Double | 0.2 | |
| Specular Size / `Specular_Size` | Double | 0.2 | |
| Darkness / `Darkness` | Double | 0 | |
| Light Smoothness / `Light_Smoothness` | Double | 1 | |
| XY-Light / `XYLight` | Double | x: 0.5<br>y: 0.5 | |
| Z-Light / `ZLight` | Double | 5 | |
| Z-Scale / `ZScale` | Double | 0.5 | |
| Opacity as Heightmap / `Opacity_as_Heightmap` | Boolean | Off | |
| Image Smoothness / `Image_Smoothness` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 434 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.248 G'MIC Remove Hot Pixels node

*This documentation is for version 1.0 of G'MIC Remove Hot Pixels (eu.gmic.RemoveHotPixels).*

#### Description

Author: Jerome Boulanger. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mask Size / `Mask_Size` | Integer | 3 | |
| Threshold / `Threshold` | Double | 10 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 435 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.249 G'MIC Resynthetize Texture FFT node

*This documentation is for version 1.0 of G'MIC Resynthetize Texture FFT (eu.gmic.ResynthetizeTextureFFT).*

#### Description

Note: This filter tries to re-synthetize a micro-texture (given as the input image) onto an output (seamless) image with an arbitrary size. It uses a phase randomization technique, as described in:

Micro-Texture Synthesis by Phase Randomization: http://www.ipol.im/pub/art/2011/ggm_rpn/

This filter is based on the work of Bruno Galerne, Yann Gousseau and Jean-Michel Morel.

Click here for a detailed description of this filter.: http://gimpchat.com/viewtopic.php?f=28&t=10141

Authors: David Tschumperle and Jerome Boulanger. Latest Update: 2014/09/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width / `Width` | Integer | 1024 | |
| Height / `Height` | Integer | 1024 | |
| Equalize Light / `Equalize_Light` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.250 G'MIC Resynthetize Texture Patch-Based node

*This documentation is for version 1.0 of G'MIC Resynthetize Texture Patch-Based (eu.gmic.ResynthetizeTexturePatchBased).*

### Description

Note: This filter tries to re-synthetize an input texture image onto a bigger output image (with an arbitrary size). Beware, this filter is quite slow to compute!

Authors: David Tschumperle. Latest Update: 2015/22/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width / `Width` | Integer | 512 | |
| Height / `Height` | Integer | 512 | |
| Number of Scales / `Number_of_Scales` | Integer | 0 | |
| Patch Size / `Patch_Size` | Integer | 7 | |
| Blending Size / `Blending_Size` | Integer | 5 | |
| Precision / `Precision` | Double | 1 | |
| Equalize Light / `Equalize_Light` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.251 G'MIC Retinex node

*This documentation is for version 1.0 of G'MIC Retinex (eu.gmic.Retinex).*

#### Description

Note: This filter implements the Multiscale Color Retinex algorithm, as described in:

http://www.ipol.im/pub/art/2014/107/

Author: David Tschumperle. Latest Update: 2016/13/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Strength (%) / `Strength_` | Double | 75 | |
| Value Offset / `Value_Offset` | Double | 16 | |
| Colorspace / `Colorspace` | Choice | HSV | **HSI**<br>**HSV**<br>**Lab**<br>**Linear RGB**<br>**RGB**<br>**YCbCr** |
| Min Cut (%) / `Min_Cut_` | Double | 1 | |
| Max Cut (%) / `Max_Cut_` | Double | 1 | |
| Regularization / `Regularization` | Double | 5 | |
| Low Scale / `Low_Scale` | Double | 15 | |
| Middle Scale / `Middle_Scale` | Double | 80 | |
| High Scale / `High_Scale` | Double | 250 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.252 G'MIC Retro Fade node

*This documentation is for version 1.0 of G'MIC Retro Fade (eu.gmic.RetroFade).*

### Description

Author: David Tschumperle. Latest Update: 2016/25/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Iterations / `Iterations` | Integer | 20 | |
| Colors / `Colors` | Integer | 6 | |
| Grain / `Grain` | Double | 40 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.253 G'MIC Ripple node

*This documentation is for version 1.0 of G'MIC Ripple (eu.gmic.Ripple).*

### Description

Author: David Tschumperle. Latest Update: 2011/23/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 10 | |
| Bandwidth / `Bandwidth` | Double | 20 | |
| Shape / `Shape` | Choice | Sine | **Bloc**<br>**Triangle**<br>**Sine**<br>**Sine+**<br>**Random** |
| Angle / `Angle` | Double | 0 | |
| Offset / `Offset` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.254 G'MIC Rodilius node

*This documentation is for version 1.0 of G'MIC Rodilius (eu.gmic.Rodilius).*

#### Description

Click here for a video tutorial: http://www.youtube.com/watch?v=RC07VUpzwGc

Authors: David Tschumperle and Rod/GimpChat. Latest Update: 2013/05/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 10 | |
| Thickness / `Thickness` | Double | 10 | |
| Sharpness / `Sharpness` | Double | 300 | |
| Orientations / `Orientations` | Integer | 5 | |
| Offset / `Offset` | Double | 30 | |
| Smoothness / `Smoothness` | Integer | 0 | |
| Color Mode / `Color_Mode` | Choice | Lighter | **Darker**<br>**Lighter** |

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Table 441 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

continues on next page

Table 441 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 441 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.255 G'MIC Rorschach node

*This documentation is for version 1.0 of G'MIC Rorschach (eu.gmic.Rorschach).*

#### Description

Author: David Tschumperle. Latest Update: 2011/12/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scale / `Scale` | Double | 3 | |
| Mirror / `Mirror` | Choice | X-Axis | **None**<br>**X-Axis**<br>**Y-Axis**<br>**XY-Axes** |
| Stencil Type / `Stencil_Type` | Choice | Color | **Black & White**<br>**RGB**<br>**Color** |

continues on next page

Table 442 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.256 G'MIC Sample Image node

*This documentation is for version 1.0 of G'MIC Sample Image (eu.gmic.SampleImage).*

### Description

Choosing 0 for parameters Width or Height means Automatic.

Author: David Tschumperle. Latest Update: 2017/16/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

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Table 443 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parameter / script name | Type | Default | Function |
| Input / `Input` | Choice | Random | **Random**<br>**Apples**<br>**Balloons**<br>**Barbara**<br>**Boats**<br>**Bottles**<br>**Butterfly**<br>**Cameraman**<br>**Car**<br>**Cat**<br>**Chick**<br>**Cliff**<br>**Colorful**<br>**David**<br>**Dog**<br>**Duck**<br>**Eagle**<br>**Elephant**<br>**Earth**<br>**Flower**<br>**Fruits**<br>**Gmicky (Deevad)**<br>**Gmicky (Mahvin)**<br>**Gmicky & Wilber**<br>**Greece**<br>**Gummy**<br>**House**<br>**Inside**<br>**Landscape**<br>**Leaf**<br>**Lena**<br>**Leno**<br>**Lion**<br>**Mandrill**<br>**Mona Lisa**<br>**Monkey**<br>**Parrots**<br>**Pencils**<br>**Peppers**<br>**Portrait0**<br>**Portrait1**<br>**Portrait2**<br>**Portrait3**<br>**Portrait4**<br>**Portrait5**<br>**Portrait6**<br>**Portrait7**<br>**Portrait8**<br>**Portrait9**<br>**Roddy** |

Table 443 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width / `Width` | Integer | 0 | |
| Height / `Height` | Integer | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.257 G'MIC Satin node

*This documentation is for version 1.0 of G'MIC Satin (eu.gmic.Satin).*

#### Description

This filter has been inspired by this tutorial from DeviantArt user fence-post.

Author: David Tschumperle. Latest Update: 2017/11/27.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Iterations / `Iterations` | Integer | 20 | |
| Smoothness (%) / `Smoothness_` | Double | 1 | |
| Seed / `Seed` | Integer | 0 | |
| Dark Color / `Dark_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Light Color / `Light_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Stretch Contrast / `Stretch_Contrast` | Boolean | Off | |
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | -50 | |
| Hue (%) / `Hue_` | Double | 0 | |
| Saturation (%) / `Saturation_` | Double | 0 | |

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Table 444 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.258 G'MIC Scanlines node

*This documentation is for version 1.0 of G'MIC Scanlines (eu.gmic.Scanlines).*

### Description

Author: David Tschumperle. Latest Update: 2014/19/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 60 | |
| Bandwidth / `Bandwidth` | Double | 2 | |
| Shape / `Shape` | Choice | Bloc | **Bloc**<br>**Triangle**<br>**Sine**<br>**Sine+**<br>**Random** |
| Angle / `Angle` | Double | 0 | |
| Offset / `Offset` | Double | 0 | |

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Table 445 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

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Table 445 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 445 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.259 G'MIC Seamcarve node

*This documentation is for version 1.0 of G'MIC Seamcarve (eu.gmic.Seamcarve).*

#### Description

Note: You can define a transparent top layer that will help the seam-carving algorithm to preserve or force removing image structures:

- Draw areas in red to force removing them.
- Draw areas in green to preserve them.
- Don't forget also to set the Input layers... parameter to input both layers to the filter.

Authors: Garagecoder and David Tschumperle. Latest Update: 2014/02/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width (%) / `Width_` | Double | 85 | |
| Height (%) / `Height_` | Double | 100 | |
| Maximal Seams per Iteration (%) / `Maximal_Seams_per_Iteration_` | Double | 15 | |

continues on next page

Table 446 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Use Top Layer as a Priority Mask / `Use_Top_Layer_as_a_Priority_Mask` | Boolean | Off | |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.260 G'MIC Seamless Turbulence node

*This documentation is for version 1.0 of G'MIC Seamless Turbulence (eu.gmic.SeamlessTurbulence).*

### Description

Author: David Tschumperle. Latest Update: 2013/02/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 15 | |
| Smoothness / `Smoothness` | Double | 20 | |
| Orientation / `Orientation` | Double | 0 | |
| Deviation / `Deviation` | Double | 1 | |
| Contrast / `Contrast` | Double | 3 | |
| Color Rendering / `Color_Rendering` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 447 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.261 G'MIC Segmentation node

*This documentation is for version 1.0 of G'MIC Segmentation (eu.gmic.Segmentation).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Edge Threshold / `Edge_Threshold` | Double | 2 | |
| Smoothness / `Smoothness` | Double | 1 | |

continues on next page

Table 448 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

continues on next page

Table 448 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 448 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.262 G'MIC Select-Replace Color node

*This documentation is for version 1.0 of G'MIC Select-Replace Color (eu.gmic.SelectReplaceColor).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Similarity Space / `Similarity_Space` | Choice | RGB[A] | **RGB[A]**<br>**RGB**<br>**YCbCr**<br>**Red**<br>**Green**<br>**Blue**<br>**Opacity**<br>**Luminance**<br>**Blue & Red Chrominances**<br>**Hue**<br>**Saturation** |
| Tolerance / `Tolerance` | Double | 20 | |

continues on next page

Table 449 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Fill Holes / `Fill_Holes` | Integer | 0 | |
| Selected Color / `Selected_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Output As / `Output_As` | Choice | Selected Colors | **Selected Colors**<br>**Selected Mask**<br>**Rejected Colors**<br>**Rejected Mask**<br>**Replaced Color** |
| Replacement Color / `Replacement_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5 y: 0.5 | |

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Table 449 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.263 G'MIC Selective Desaturation node

*This documentation is for version 1.0 of G'MIC Selective Desaturation (eu.gmic.SelectiveDesaturation).*

### Description

Author: David Tschumperle. Latest Update: 2015/15/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Reference Color / `Reference_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Desaturate / `Desaturate` | Choice | Reference Color | **Reference Color**<br>**All but Reference Color** |
| Strength / `Strength` | Double | 3 | |
| Regularization / `Regularization` | Integer | 0 | |
| Maximum Saturation / `Maximum_Saturation` | Choice | From Input | **From Input**<br>**From Reference Color**<br>**Maximum Value** |

continues on next page

Table 450 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 450 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.264 G'MIC Self Glitching node

*This documentation is for version 1.0 of G'MIC Self Glitching (eu.gmic.SelfGlitching).*

#### Description

Author: David Tschumperle. Latest Update: 2018/08/19.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Multiplier / `Multiplier` | Double | 0 | |
| Bias / `Bias` | Double | 0 | |
| Negate / `Negate` | Boolean | Off | |

continues on next page

Table 451 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Operator / `Operator` | Choice | Add | **Add**<br>**Mul**<br>**And**<br>**Or**<br>**Xor**<br>**Pow**<br>**Reverse Pow**<br>**Mod**<br>**Reverse Mod** |
| Shift Point / `Shift_Point` | Double | x: 0.5<br>y: 0.5 | |
| Boundary / `Boundary` | Choice | Mirror | **Zero**<br>**Nearest**<br>**Periodic**<br>**Mirror** |

continues on next page

Table 451 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 451 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 451 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.265 G'MIC Sepia node

*This documentation is for version 1.0 of G'MIC Sepia (eu.gmic.Sepia).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |

continues on next page

Table 452 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 452 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.266 G'MIC Shade Bobs node

*This documentation is for version 1.0 of G'MIC Shade Bobs (eu.gmic.ShadeBobs).*

#### Description

Bobs parameters :

Curve parameters :

Author: David Tschumperle. Latest Update: 2012/18/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Integer | 50 | |
| Radius / `Radius` | Integer | 5 | |
| Duration / `Duration` | Integer | 200 | |
| Velocity / `Velocity` | Double | 1 | |
| Rx / `Rx` | Double | -1 | |
| Ry / `Ry` | Double | 2 | |
| Rz / `Rz` | Double | 1 | |

continues on next page

Table 453 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Rt / `Rt` | Double | 0.8 | |
| Rcx / `Rcx` | Double | 0 | |
| Colormap / `Colormap` | Choice | Cube | **Grayscale**<br>**Standard**<br>**HSV**<br>**Lines**<br>**Hot**<br>**Cool**<br>**Jet**<br>**Flag**<br>**Cube** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 453 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.267 G'MIC Shadow Patch node

*This documentation is for version 1.0 of G'MIC Shadow Patch (eu.gmic.ShadowPatch).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Opacity / `Opacity` | Double | 0.7 | |

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Table 454 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 454 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.268 G'MIC Shapeism node

*This documentation is for version 1.0 of G'MIC Shapeism (eu.gmic.Shapeism).*

### Description

Note: Parameters Branches, Thickness and Angle are used only for Custom shapes.

Click here for a detailed description of this filter.: http://gimpchat.com/viewtopic.php?f=28&t=7500&sid=5b483979826903b8f8fc8fdaf1767dae

Author: David Tschumperle. Latest Update: 2013/11/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Shape / `Shape` | Choice | Circles | **Squares**<br>**Triangles**<br>**Circles**<br>**Diamond**<br>**Hexagon**<br>**Octagon**<br>**Stars**<br>**Custom** |
| Branches / `Branches` | Integer | 7 | |
| Thickness / `Thickness` | Double | 0.38 | |
| Angle / `Angle` | Double | 0 | |
| Antialiasing / `Antialiasing` | Boolean | On | |
| Scales / `Scales` | Integer | 5 | |
| Maximal Size / `Maximal_Size` | Integer | 32 | |
| Minimal Size / `Minimal_Size` | Integer | 8 | |
| Allow Angle / `Allow_Angle` | Choice | Any | **0 deg.**<br>**180 deg.**<br>**90 deg.**<br>**Any** |

continues on next page

Table 455 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spacing / `Spacing` | Integer | 1 | |
| Precision / `Precision` | Integer | 5 | |
| Edges / `Edges` | Double | 0.5 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Background / `Background` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.269 G'MIC Sharp Abstract node

*This documentation is for version 1.0 of G'MIC Sharp Abstract (eu.gmic.SharpAbstract).*

#### Description

Author: David Tschumperle. Latest Update: 2016/20/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spatial Scale / `Spatial_Scale` | Double | 4 | |
| Value Scale / `Value_Scale` | Double | 10 | |
| Precision / `Precision` | Double | 0.5 | |

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Table 456 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 456 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 456 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.270 G'MIC Sharpen Deblur node

*This documentation is for version 1.0 of G'MIC Sharpen Deblur (eu.gmic.SharpenDeblur).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `Radius` | Double | 2 | |
| Iterations / `Iterations` | Integer | 10 | |
| Time Step / `Time_Step` | Double | 20 | |
| Smoothness / `Smoothness` | Double | 0.1 | |
| Regularization / `Regularization` | Choice | Mean Curvature | **Tikhonov**<br>**Mean Curvature**<br>**Total Variation** |

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Table 457 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 457 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 457 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.271 G'MIC Sharpen Gold-Meinel node

*This documentation is for version 1.0 of G'MIC Sharpen Gold-Meinel (eu.gmic.SharpenGoldMeinel).*

#### Description

Author: Jerome Boulanger. Latest Update: 2013/29/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Sigma / `Sigma` | Double | 1 | |
| Iterations / `Iterations` | Integer | 5 | |
| Acceleration / `Acceleration` | Double | 1 | |
| Blur / `Blur` | Choice | Gaussian | **Exponential**<br>**Gaussian** |
| Cut / `Cut` | Boolean | On | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 458 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.272 G'MIC Sharpen Inverse Diffusion node

*This documentation is for version 1.0 of G'MIC Sharpen Inverse Diffusion (eu.gmic.SharpenInverseDiffusion).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 50 | |
| Iterations / `Iterations` | Integer | 2 | |
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.273 G'MIC Sharpen Multiscale node

*This documentation is for version 1.0 of G'MIC Sharpen Multiscale (eu.gmic.SharpenMultiscale).*

### Description

Author: David Tschumperle. Latest Update: 2020/01/14.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Strength (%) / `Strength_` | Double | 15 | |
| Regularity (%) / `Regularity_` | Double | 20 | |
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 460 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.274 G'MIC Sharpen Octave Sharpening node

*This documentation is for version 1.0 of G'MIC Sharpen Octave Sharpening (eu.gmic.SharpenOctaveSharpening).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scales / `Scales` | Integer | 4 | |
| Maximal Radius / `Maximal_Radius` | Double | 5 | |
| Amount / `Amount` | Double | 3 | |
| Threshold / `Threshold` | Double | 0 | |

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Table 461 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 461 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.275 G'MIC Sharpen Richardson-Lucy node

*This documentation is for version 1.0 of G'MIC Sharpen Richardson-Lucy (eu.gmic.SharpenRichardsonLucy).*

### Description

Author: Jerome Boulanger. Latest Update: 2013/29/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Sigma / `Sigma` | Double | 1 | |
| Iterations / `Iterations` | Integer | 10 | |
| Blur / `Blur` | Choice | Gaussian | **Exponential**<br>**Gaussian** |
| Cut / `Cut` | Boolean | On | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.276 G'MIC Sharpen Shock Filters node

*This documentation is for version 1.0 of G'MIC Sharpen Shock Filters (eu.gmic.SharpenShockFilters).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 150 | |
| Edge Threshold / `Edge_Threshold` | Double | 0.1 | |
| Gradient Smoothness / `Gradient_Smoothness` | Double | 0.8 | |
| Tensor Smoothness / `Tensor_Smoothness` | Double | 1.1 | |
| Iterations / `Iterations` | Integer | 1 | |

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Table 463 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 463 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.277 G'MIC Sharpen Texture node

*This documentation is for version 1.0 of G'MIC Sharpen Texture (eu.gmic.SharpenTexture).*

### Description

Author: David Tschumperle. Latest Update: 2016/20/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Strength / `Strength` | Double | 1 | |
| Radius / `Radius` | Double | 4 | |
| Channel(s) / `Channels` | Choice | Lab [Lightness] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 464 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.278 G'MIC Sharpen Unsharp Mask node

*This documentation is for version 1.0 of G'MIC Sharpen Unsharp Mask (eu.gmic.SharpenUnsharpMask).*

#### Description

Note: This filter is inspired by the original GIMP Unsharp Mask filter, with additional parameters.

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Sharpening Type / `Sharpening_Type` | Choice | Bilateral | **Gaussian**<br>**Bilateral** |
| Spatial Radius / `Spatial_Radius` | Double | 1.25 | |
| Bilateral Radius / `Bilateral_Radius` | Double | 10 | |
| Amount / `Amount` | Double | 2 | |
| Threshold / `Threshold` | Double | 0 | |
| Darkness Level / `Darkness_Level` | Double | 1 | |

continues on next page

Table 465 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Lightness Level / `Lightness_Level` | Double | 1 | |
| Iterations / `Iterations` | Integer | 1 | |
| Negative Effect / `Negative_Effect` | Boolean | Off | |
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 465 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 465 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.279 G'MIC Shock Waves node

*This documentation is for version 1.0 of G'MIC Shock Waves (eu.gmic.ShockWaves).*

#### Description

Author: David Tschumperle. Latest Update: 2014/01/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 10 | |
| Low Frequency / `Low_Frequency` | Double | 10 | |
| Frequency Range / `Frequency_Range` | Double | 20 | |

continues on next page

Table 466 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 466 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.280 G'MIC Sierpinski Triangle node

*This documentation is for version 1.0 of G'MIC Sierpinski Triangle (eu.gmic.SierpinskiTriangle).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Recursions / `Recursions` | Integer | 6 | |
| 1st X-Coord / `p1st_XCoord` | Double | 50 | |
| 1st Y-Coord / `p1st_YCoord` | Double | 0 | |
| 2nd X-Coord / `p2nd_XCoord` | Double | 0 | |
| 2nd Y-Coord / `p2nd_YCoord` | Double | 100 | |
| 3rd X-Coord / `p3rd_XCoord` | Double | 100 | |
| 3rd Y-Coord / `p3rd_YCoord` | Double | 100 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Opacity / `Opacity` | Double | 1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.281 G'MIC Simulate Film node

*This documentation is for version 1.0 of G'MIC Simulate Film (eu.gmic.SimulateFilm).*

#### Description

Note: The color LUTs proposed in this filter come from various free sources :

* RawTherapee Film Simulation.

* Pat David Film Emulation.

* Fuji Film Simulation Profiles.

* Print Film LUTs For Download.

Author: David Tschumperle. Latest Update: 2019/02/27.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Category / `Category` | Choice | Black & White (25) | **Black & White (25)**<br>**Instant [Consumer] (54)**<br>**Instant [Pro] (68)**<br>**Fuji XTrans III (15)**<br>**Negative [Color] (13)**<br>**Negative [New] (39)**<br>**Negative [Old] (44)**<br>**Print Films (12)**<br>**Slide [Color] (26)** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset / `Preset` | Choice | None | **All [Collage]**<br>**None**<br>**Agfa APX 100**<br>**Agfa APX 25**<br>**Fuji Neopan 1600**<br>**Fuji Neopan Acros 100**<br>**Ilford Delta 100**<br>**Ilford Delta 3200**<br>**Ilford Delta 400**<br>**Ilford FP4 Plus 125**<br>**Ilford HP5 Plus 400**<br>**Ilford HPS 800**<br>**Ilford Pan F Plus 50**<br>**Ilford XP2**<br>**Kodak BW 400 CN**<br>**Kodak HIE (HS Infra)**<br>**Kodak T-Max 100**<br>**Kodak T-Max 3200**<br>**Kodak T-Max 400**<br>**Kodak Tri-X 400**<br>**Polaroid 664**<br>**Polaroid 667**<br>**Polaroid 672**<br>**Rollei IR 400**<br>**Rollei Ortho 25**<br>**Rollei Retro 100 Tonal**<br>**Rollei Retro 80s** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_2 / `Preset_2` | Choice | None | **All [Collage]**<br>**None**<br>**Polaroid PX-100UV+ Cold –**<br>**Polaroid PX-100UV+ Cold -**<br>**Polaroid PX-100UV+ Cold**<br>**Polaroid PX-100UV+ Cold +**<br>**Polaroid PX-100UV+ Cold ++**<br>**Polaroid PX-100UV+ Cold +++**<br>**Polaroid PX-100UV+ Warm –**<br>**Polaroid PX-100UV+ Warm -**<br>**Polaroid PX-100UV+ Warm**<br>**Polaroid PX-100UV+ Warm +**<br>**Polaroid PX-100UV+ Warm ++**<br>**Polaroid PX-100UV+ Warm +++**<br>**Polaroid PX-680 –**<br>**Polaroid PX-680 -**<br>**Polaroid PX-680**<br>**Polaroid PX-680 +**<br>**Polaroid PX-680 ++**<br>**Polaroid PX-680 Cold –**<br>**Polaroid PX-680 Cold -**<br>**Polaroid PX-680 Cold**<br>**Polaroid PX-680 Cold +**<br>**Polaroid PX-680 Cold ++**<br>**Polaroid PX-680 Cold ++a**<br>**Polaroid PX-680 Warm –**<br>**Polaroid PX-680 Warm -**<br>**Polaroid PX-680 Warm**<br>**Polaroid PX-680 Warm +**<br>**Polaroid PX-680 Warm ++**<br>**Polaroid PX-70 –**<br>**Polaroid PX-70 -**<br>**Polaroid PX-70**<br>**Polaroid PX-70 +**<br>**Polaroid PX-70 ++**<br>**Polaroid PX-70 +++**<br>**Polaroid PX-70 Cold –**<br>**Polaroid PX-70 Cold -**<br>**Polaroid PX-70 Cold**<br>**Polaroid PX-70 Cold +**<br>**Polaroid PX-70 Cold ++**<br>**Polaroid PX-70 Warm –**<br>**Polaroid PX-70 Warm -**<br>**Polaroid PX-70 Warm**<br>**Polaroid PX-70 Warm +**<br>**Polaroid PX-70 Warm ++**<br>**Polaroid Time Zero (Expired) —**<br>**Polaroid Time Zero (Expired) –**<br>**Polaroid Time Zero (Expired) -**<br>**Polaroid Time Zero (Expired)**<br>**Polaroid Time Zero (Expired) +**<br>**Polaroid Time Zero (Expired) ++** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_3 / `Preset_3` | Choice | None | **All [Collage]**<br>**None**<br>**Fuji FP-100c –**<br>**Fuji FP-100c -**<br>**Fuji FP-100c**<br>**Fuji FP-100c (alt)**<br>**Fuji FP-100c +**<br>**Fuji FP-100c ++**<br>**Fuji FP-100c ++a**<br>**Fuji FP-100c +++**<br>**Fuji FP-100c Cool –**<br>**Fuji FP-100c Cool -**<br>**Fuji FP-100c Cool**<br>**Fuji FP-100c Cool +**<br>**Fuji FP-100c Cool ++**<br>**Fuji FP-100c Negative –**<br>**Fuji FP-100c Negative -**<br>**Fuji FP-100c Negative**<br>**Fuji FP-100c Negative +**<br>**Fuji FP-100c Negative ++**<br>**Fuji FP-100c Negative ++a**<br>**Fuji FP-100c Negative +++**<br>**Fuji FP-3000b –**<br>**Fuji FP-3000b -**<br>**Fuji FP-3000b**<br>**Fuji FP-3000b +**<br>**Fuji FP-3000b ++**<br>**Fuji FP-3000b +++**<br>**Fuji FP-3000b HC**<br>**Fuji FP-3000b Negative –**<br>**Fuji FP-3000b Negative -**<br>**Fuji FP-3000b Negative**<br>**Fuji FP-3000b Negative +**<br>**Fuji FP-3000b Negative ++**<br>**Fuji FP-3000b Negative +++**<br>**Fuji FP-3000b Negative Early**<br>**Polaroid 665 –**<br>**Polaroid 665 -**<br>**Polaroid 665**<br>**Polaroid 665 +**<br>**Polaroid 665 ++**<br>**Polaroid 665 Negative -**<br>**Polaroid 665 Negative**<br>**Polaroid 665 Negative +**<br>**Polaroid 665 Negative HC**<br>**Polaroid 669 –**<br>**Polaroid 669 -**<br>**Polaroid 669**<br>**Polaroid 669 +**<br>**Polaroid 669 ++**<br>**Polaroid 669 +++**<br>**Polaroid 669 Cold –** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_4 / `Preset_4` | Choice | None | **All [Collage]**<br>**None**<br>**Acros**<br>**Acros+G**<br>**Acros+R**<br>**Acros+Ye**<br>**Astia**<br>**Classic Chrome**<br>**Mono**<br>**Mono+G**<br>**Mono+R**<br>**Mono+Ye**<br>**Pro Neg Hi**<br>**Pro Neg Std**<br>**Provia**<br>**Sepia**<br>**Velvia** |
| Preset_5 / `Preset_5` | Choice | None | **All [Collage]**<br>**None**<br>**Agfa Ultra Color 100**<br>**Agfa Vista 200**<br>**Fuji Superia 200**<br>**Fuji Superia HG 1600**<br>**Fuji Superia Reala 100**<br>**Fuji Superia X-Tra 800**<br>**Kodak Ektar 100**<br>**Kodak Elite 100 XPRO**<br>**Kodak Elite Color 200**<br>**Kodak Elite Color 400**<br>**Kodak Portra 160 NC**<br>**Kodak Portra 160 VC**<br>**Lomography Redscale 100** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_6 / `Preset_6` | Choice | None | **All [Collage]**<br>**None**<br>**Fuji 160C -**<br>**Fuji 160C**<br>**Fuji 160C +**<br>**Fuji 160C ++**<br>**Fuji 400H -**<br>**Fuji 400H**<br>**Fuji 400H +**<br>**Fuji 400H ++**<br>**Fuji 800Z -**<br>**Fuji 800Z**<br>**Fuji 800Z +**<br>**Fuji 800Z ++**<br>**Fuji Ilford HP5 -**<br>**Fuji Ilford HP5**<br>**Fuji Ilford HP5 +**<br>**Fuji Ilford HP5 ++**<br>**Kodak Portra 160 -**<br>**Kodak Portra 160**<br>**Kodak Portra 160 +**<br>**Kodak Portra 160 ++**<br>**Kodak Portra 400 -**<br>**Kodak Portra 400**<br>**Kodak Portra 400 +**<br>**Kodak Portra 400 ++**<br>**Kodak Portra 800 -**<br>**Kodak Portra 800**<br>**Kodak Portra 800 +**<br>**Kodak Portra 800 ++**<br>**Kodak Portra 800 HC**<br>**Kodak T-MAX 3200 -**<br>**Kodak T-MAX 3200**<br>**Kodak T-MAX 3200 +**<br>**Kodak T-MAX 3200 ++**<br>**Kodak T-MAX 3200 (alt)**<br>**Kodak TRI-X 400 -**<br>**Kodak TRI-X 400**<br>**Kodak TRI-X 400 +**<br>**Kodak TRI-X 400 ++**<br>**Kodak TRI-X 400 (alt)** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_7 / `Preset_7` | Choice | None | **All [Collage]**<br>**None**<br>**Fuji Ilford Delta 3200 -**<br>**Fuji Ilford Delta 3200**<br>**Fuji Ilford Delta 3200 +**<br>**Fuji Ilford Delta 3200 ++**<br>**Fuji Neopan 1600 -**<br>**Fuji Neopan 1600**<br>**Fuji Neopan 1600 +**<br>**Fuji Neopan 1600 ++**<br>**Fuji Superia 100 -**<br>**Fuji Superia 100**<br>**Fuji Superia 100 +**<br>**Fuji Superia 100 ++**<br>**Fuji Superia 400 -**<br>**Fuji Superia 400**<br>**Fuji Superia 400 +**<br>**Fuji Superia 400 ++**<br>**Fuji Superia 800 -**<br>**Fuji Superia 800**<br>**Fuji Superia 800 +**<br>**Fuji Superia 800 ++**<br>**Fuji Superia 1600 -**<br>**Fuji Superia 1600**<br>**Fuji Superia 1600 +**<br>**Fuji Superia 1600 ++**<br>**Kodak Portra 160 NC -**<br>**Kodak Portra 160 NC**<br>**Kodak Portra 160 NC +**<br>**Kodak Portra 160 NC ++**<br>**Kodak Portra 160 VC -**<br>**Kodak Portra 160 VC**<br>**Kodak Portra 160 VC +**<br>**Kodak Portra 160 VC ++**<br>**Kodak Portra 400 UC -**<br>**Kodak Portra 400 UC**<br>**Kodak Portra 400 UC +**<br>**Kodak Portra 400 UC ++**<br>**Kodak Portra 400 VC -**<br>**Kodak Portra 400 VC**<br>**Kodak Portra 400 VC +**<br>**Kodak Portra 400 VC ++** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preset_8 / `Preset_8` | Choice | None | **All [Collage]**<br>**None**<br>**Fuji 3510 (Constlclip)**<br>**Fuji 3510 (Constlmap)**<br>**Fuji 3510 (Cuspclip)**<br>**Fuji 3513 (Constlclip)**<br>**Fuji 3513 (Constlmap)**<br>**Fuji 3513 (Cuspclip)**<br>**Kodak 2383 (Constlclip)**<br>**Kodak 2383 (Constlmap)**<br>**Kodak 2383 (Cuspclip)**<br>**Kodak 2393 (Constlclip)**<br>**Kodak 2393 (Constlmap)**<br>**Kodak 2393 (Cuspclip)** |
| Preset_9 / `Preset_9` | Choice | None | **All [Collage]**<br>**None**<br>**Agfa Precisa 100**<br>**Fuji Astia 100F**<br>**Fuji FP 100C**<br>**Fuji Provia 100F**<br>**Fuji Provia 400F**<br>**Fuji Provia 400X**<br>**Fuji Sensia 100**<br>**Fuji Superia 200 XPRO**<br>**Fuji Velvia 50**<br>**Generic Fuji Astia 100**<br>**Generic Fuji Provia 100**<br>**Generic Fuji Velvia 100**<br>**Generic Kodachrome 64**<br>**Generic Kodak Ektachrome 100 VS**<br>**Kodak E-100 GX Ektachrome 100**<br>**Kodak Ektachrome 100 VS**<br>**Kodak Elite Chrome 200**<br>**Kodak Elite Chrome 400**<br>**Kodak Elite ExtraColor 100**<br>**Kodak Kodachrome 200**<br>**Kodak Kodachrome 25**<br>**Kodak Kodachrome 64**<br>**Lomography X-Pro Slide 200**<br>**Polaroid 669**<br>**Polaroid 690**<br>**Polaroid Polachrome** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Thumbnail Size / `Thumbnail_Size` | Integer | 512 | |
| Strength (%) / `Strength_` | Double | 100 | |
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |
| Hue (%) / `Hue_` | Double | 0 | |
| Saturation (%) / `Saturation_` | Double | 0 | |
| Normalize Colors / `Normalize_Colors` | Choice | None | **None**<br>**Pre-Normalize**<br>**Post-Normalize**<br>**Both** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 468 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.282 G'MIC Skeleton node

*This documentation is for version 1.0 of G'MIC Skeleton (eu.gmic.Skeleton).*

#### Description

Author: David Tschumperle. Latest Update: 2011/07/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Method / `Method` | Choice | Distance (Fast) | **Distance (Fast)**<br>**Thinning (Slow)** |
| Smoothness / `Smoothness` | Double | 0 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 469 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.283 G'MIC Sketch node

*This documentation is for version 1.0 of G'MIC Sketch (eu.gmic.Sketch).*

#### Description

Author: David Tschumperle. Latest Update: 2018/05/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Orientations / `Number_of_Orientations` | Integer | 3 | |
| Starting Angle / `Starting_Angle` | Double | 45 | |
| Angle Range / `Angle_Range` | Double | 180 | |
| Stroke Length / `Stroke_Length` | Double | 30 | |
| Contour Threshold / `Contour_Threshold` | Double | 1.75 | |
| Opacity / `Opacity` | Double | 0.02 | |
| Background Intensity / `Background_Intensity` | Double | 0.5 | |
| Density / `Density` | Double | 0.75 | |
| Sharpness / `Sharpness` | Double | 0.1 | |
| Anisotropy / `Anisotropy` | Double | 0.7 | |
| Smoothness / `Smoothness` | Double | 3 | |
| Coherence / `Coherence` | Double | 6 | |
| Boost Stroke / `Boost_Stroke` | Boolean | Off | |
| Curved Stroke / `Curved_Stroke` | Boolean | On | |

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Table 470 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Color Model / `Color_Model` | Choice | Color on white | **Black on white**<br>**White on black**<br>**Black on transparent white**<br>**White on transparent black**<br>**Color on white** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 470 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.284 G'MIC Slice Luminosity node

*This documentation is for version 1.0 of G'MIC Slice Luminosity (eu.gmic.SliceLuminosity).*

### Description

Slice 1 (shadows):

Slice 2 (low midtones):

Slice 3 (high midtones):

Slice 4 (highlights):

Author: David Tschumperle. Latest Update: 2015/22/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Luminosity Type / `Luminosity_Type` | Choice | Luminance | **Average RGB**<br>**Luminance**<br>**Lightness**<br>**Value** |
| Output As / `Output_As` | Choice | Masked Image | **Mask**<br>**Masked Image** |
| Preview Type / `Preview_Type` | Choice | Image | **Mask**<br>**Mask + Background**<br>**Image**<br>**Image + Background** |
| Activate Slice 1 / `Activate_Slice_1` | Boolean | On | |
| Starting Value / `Starting_Value` | Integer | 0 | |
| Ending Value / `Ending_Value` | Integer | 64 | |
| Starting Feathering / `Starting_Feathering` | Integer | 0 | |
| Ending Feathering / `Ending_Feathering` | Integer | 0 | |
| Activate Slice 2 / `Activate_Slice_2` | Boolean | On | |
| Starting Value_2 / `Starting_Value_2` | Integer | 64 | |
| Ending Value_2 / `Ending_Value_2` | Integer | 128 | |
| Starting Feathering_2 / `Starting_Feathering_2` | Integer | 0 | |
| Ending Feathering_2 / `Ending_Feathering_2` | Integer | 0 | |
| Activate Slice 3 / `Activate_Slice_3` | Boolean | Off | |
| Starting Value_3 / `Starting_Value_3` | Integer | 128 | |
| Ending Value_3 / `Ending_Value_3` | Integer | 192 | |
| Starting Feathering_3 / `Starting_Feathering_3` | Integer | 0 | |
| Ending Feathering_3 / `Ending_Feathering_3` | Integer | 0 | |
| Activate Slice 4 / `Activate_Slice_4` | Boolean | Off | |

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Table 471 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Starting Value_4 / `Starting_Value_4` | Integer | 192 | |
| Ending Value_4 / `Ending_Value_4` | Integer | 255 | |
| Starting Feathering_4 / `Starting_Feathering_4` | Double | 0 | |
| Ending Feathering_4 / `Ending_Feathering_4` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.285 G'MIC Smooth Abstract node

*This documentation is for version 1.0 of G'MIC Smooth Abstract (eu.gmic.SmoothAbstract).*

### Description

Author: David Tschumperle. Latest Update: 2016/06/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness (%) / `Smoothness_` | Double | 75 | |
| Regularization / `Regularization` | Choice | Isotropic | **Isotropic**<br>**Delaunay-oriented**<br>**Edge-oriented** |
| Regularization Iterations / `Regularization_Iterations` | Integer | 20 | |
| Geometry / `Geometry` | Double | 1 | |
| Details / `Details` | Double | 30 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.286 G'MIC Smooth Anisotropic node

*This documentation is for version 1.0 of G'MIC Smooth Anisotropic (eu.gmic.SmoothAnisotropic).*

### Description

Author: David Tschumperle. Latest Update: 2013/08/27.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 60 | |
| Sharpness / `Sharpness` | Double | 0.7 | |
| Anisotropy / `Anisotropy` | Double | 0.3 | |
| Gradient Smoothness / `Gradient_Smoothness` | Double | 0.6 | |
| Tensor Smoothness / `Tensor_Smoothness` | Double | 1.1 | |
| Spatial Precision / `Spatial_Precision` | Double | 0.8 | |
| Angular Precision / `Angular_Precision` | Double | 30 | |
| Value Precision / `Value_Precision` | Double | 2 | |
| Interpolation / `Interpolation` | Choice | Nearest Neighbor | **Nearest Neighbor**<br>**Linear**<br>**Runge-Kutta** |
| Fast Approximation / `Fast_Approximation` | Boolean | On | |
| Iterations / `Iterations` | Integer | 1 | |

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Table 473 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 473 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 473 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.287 G'MIC Smooth Antialias node

*This documentation is for version 1.0 of G'MIC Smooth Antialias (eu.gmic.SmoothAntialias).*

#### Description

Author: David Tschumperle. Latest Update: 2016/11/13.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 5 | |
| Edge Threshold (%) / `Edge_Threshold_` | Double | 10 | |
| Smoothness / `Smoothness` | Double | 0.8 | |

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Table 474 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 474 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.288 G'MIC Smooth Bilateral node

*This documentation is for version 1.0 of G'MIC Smooth Bilateral (eu.gmic.SmoothBilateral).*

#### Description

Author: David Tschumperle. Latest Update: 2013/27/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spatial Variance / `Spatial_Variance` | Double | 10 | |
| Value Variance / `Value_Variance` | Double | 7 | |
| Iterations / `Iterations` | Integer | 2 | |

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Table 475 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 475 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 475 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.289 G'MIC Smooth Diffusion node

*This documentation is for version 1.0 of G'MIC Smooth Diffusion (eu.gmic.SmoothDiffusion).*

#### Description

Author: David Tschumperle. Latest Update: 2013/27/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Sharpness / `Sharpness` | Double | 0.7 | |
| Anisotropy / `Anisotropy` | Double | 0.3 | |
| Gradient Smoothness / `Gradient_Smoothness` | Double | 0.6 | |
| Tensor Smoothness / `Tensor_Smoothness` | Double | 1.1 | |
| Time Step / `Time_Step` | Double | 15 | |
| Iterations / `Iterations` | Integer | 8 | |

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Table 476 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 476 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 476 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.290 G'MIC Smooth Guided node

*This documentation is for version 1.0 of G'MIC Smooth Guided (eu.gmic.SmoothGuided).*

### Description

Author: David Tschumperle. Latest Update: 2019/10/02.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Guide As / `Guide_As` | Choice | Self | **Self**<br>**Top Layer**<br>**Bottom Layer** |
| Radius / `Radius` | Integer | 5 | |
| Smoothness / `Smoothness` | Double | 30 | |
| Iterations / `Iterations` | Integer | 1 | |

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Table 477 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 477 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 477 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.291 G'MIC Smooth Mean-Curvature node

*This documentation is for version 1.0 of G'MIC Smooth Mean-Curvature (eu.gmic.SmoothMeanCurvature).*

#### Description

Author: David Tschumperle. Latest Update: 2013/27/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Time Step / `Time_Step` | Double | 30 | |
| Iterations / `Iterations` | Integer | 4 | |
| Keep Iterations as Different Layers / `Keep_Iterations_as_Different_Layers` | Boolean | Off | |

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Table 478 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 478 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 478 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.292 G'MIC Smooth Median node

*This documentation is for version 1.0 of G'MIC Smooth Median (eu.gmic.SmoothMedian).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `Radius` | Integer | 3 | |
| Threshold / `Threshold` | Double | 255 | |
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 479 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 479 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.293 G'MIC Smooth NL-Means node

*This documentation is for version 1.0 of G'MIC Smooth NL-Means (eu.gmic.SmoothNLMeans).*

#### Description

Author: Jerome Boulanger. Latest Update: 2015/01/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Patch Size / `Patch_Size` | Double | 4 | |
| Spatial Bandwidth / `Spatial_Bandwidth` | Integer | 4 | |
| Tonal Bandwidth / `Tonal_Bandwidth` | Double | 10 | |
| Patch Measure / `Patch_Measure` | Choice | Luminance | **Linf-Norm**<br>**L1-Norm**<br>**L2-Norm**<br>**Luminance**<br>**Lightness**<br>**RGB** |

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Table 480 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 480 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 480 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.294 G'MIC Smooth Patch-Based node

*This documentation is for version 1.0 of G'MIC Smooth Patch-Based (eu.gmic.SmoothPatchBased).*

### Description

Author: David Tschumperle. Latest Update: 2013/27/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Spatial Variance / `Spatial_Variance` | Double | 10 | |
| Patch Variance / `Patch_Variance` | Double | 10 | |
| Patch Size / `Patch_Size` | Integer | 3 | |
| Lookup Size / `Lookup_Size` | Integer | 5 | |
| Patch Smoothness / `Patch_Smoothness` | Double | 0 | |
| Fast Approximation / `Fast_Approximation` | Boolean | On | |
| Iterations / `Iterations` | Integer | 1 | |

continues on next page

Table 481 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 481 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.295 G'MIC Smooth Patch-PCA node

*This documentation is for version 1.0 of G'MIC Smooth Patch-PCA (eu.gmic.SmoothPatchPCA).*

### Description

Note: Beware, this filter uses a very computationally intensive algorithm to denoise images. So, do not complain too much if you have less than 8 cores available for the computation :)

Authors: David Tschumperle and Jerome Boulanger. Latest Update: 2016/24/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Strength / `Strength` | Double | 4 | |
| Patch Size / `Patch_Size` | Integer | 7 | |
| Lookup Size / `Lookup_Size` | Integer | 11 | |
| Spatial Sampling / `Spatial_Sampling` | Integer | 7 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 482 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 482 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.296 G'MIC Smooth Perona-Malik node

*This documentation is for version 1.0 of G'MIC Smooth Perona-Malik (eu.gmic.SmoothPeronaMalik).*

#### Description

Author: David Tschumperle. Latest Update: 2014/26/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| K-Factor / `KFactor` | Double | 20 | |
| Time Step / `Time_Step` | Double | 5 | |
| Iterations / `Iterations` | Integer | 5 | |
| Keep Iterations as Different Layers / `Keep_Iterations_as_Different_Layers` | Boolean | Off | |

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Table 483 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 483 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 483 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.297 G'MIC Smooth Selective Gaussian node

*This documentation is for version 1.0 of G'MIC Smooth Selective Gaussian (eu.gmic.SmoothSelectiveGaussian).*

### Description

Author: David Tschumperle. Latest Update: 2013/27/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 5 | |
| Edges / `Edges` | Double | 0.5 | |
| Scales / `Scales` | Integer | 5 | |
| Iterations / `Iterations` | Integer | 1 | |

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Table 484 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 484 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 484 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.298 G'MIC Smooth Skin node

*This documentation is for version 1.0 of G'MIC Smooth Skin (eu.gmic.SmoothSkin).*

#### Description

Step 1: Skin detection

Step 2: Medium scale smoothing

Step 3: Details enhancement

Click here for a video tutorial: http://www.youtube.com/watch?v=H8pQfq-ybCc

Author: David Tschumperle. Latest Update: 2013/20/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Skin Estimation / `Skin_Estimation` | Choice | Automatic | **None**<br>**Manual**<br>**Automatic** |
| Tolerance / `Tolerance` | Double | 0.5 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Threshold / `Threshold` | Double | 1 | |
| Pre-Normalize Image / `PreNormalize_Image` | Boolean | On | |
| X-Coordinate [Manual] / `XCoordinate_Manual` | Double | 50 | |
| Y-Coordinate [Manual] / `YCoordinate_Manual` | Double | 50 | |
| Radius [Manual] / `Radius_Manual` | Double | 5 | |
| Base Scale / `Base_Scale` | Double | 2 | |
| Fine Scale / `Fine_Scale` | Double | 0.2 | |
| Smoothness_2 / `Smoothness_2` | Double | 3 | |
| Smoothness Type / `Smoothness_Type` | Choice | Bilateral | **Gaussian**<br>**Bilateral** |
| Gain / `Gain` | Double | 0.05 | |

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Table 485 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Data / `Preview_Data` | Choice | Result Image | **Skin Mask**<br>**Base Scale**<br>**Medium Scale (Original)**<br>**Medium Scale (Smoothed)**<br>**Fine Scale**<br>**Result Image** |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 485 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.299 G'MIC Smooth Thin Brush node

*This documentation is for version 1.0 of G'MIC Smooth Thin Brush (eu.gmic.SmoothThinBrush).*

### Description

Note: This set of anisotropic smoothing parameters has been suggested by PhotoComiX.

Author: PhotoComiX. Latest Update: 2010/26/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 60 | |
| Sharpness / `Sharpness` | Double | 0.9 | |
| Anisotropy / `Anisotropy` | Double | 0.64 | |
| Gradient Smoothness / `Gradient_Smoothness` | Double | 3.1 | |
| Tensor Smoothness / `Tensor_Smoothness` | Double | 1.1 | |
| Spatial Precision / `Spatial_Precision` | Double | 0.8 | |
| Angular Precision / `Angular_Precision` | Double | 30 | |
| Value Precision / `Value_Precision` | Double | 2 | |
| Interpolation / `Interpolation` | Choice | Nearest Neighbor | **Nearest Neighbor**<br>**Linear**<br>**Runge-Kutta** |
| Fast Approximation / `Fast_Approximation` | Boolean | On | |
| Iterations / `Iterations` | Integer | 1 | |
| Channel(s) / `Channels` | Choice | RGB | **RGB**<br>**Luminance**<br>**Blue & Red chrominances**<br>**Blue chrominance**<br>**Red chrominance** |
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |

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Table 486 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.300 G'MIC Smooth Total Variation node

*This documentation is for version 1.0 of G'MIC Smooth Total Variation (eu.gmic.SmoothTotalVariation).*

### Description

Author: David Tschumperle. Latest Update: 2013/27/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Time Step / `Time_Step` | Double | 30 | |
| Iterations / `Iterations` | Integer | 10 | |
| Keep Iterations as Different Layers / `Keep_Iterations_as_Different_Layers` | Boolean | Off | |

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Table 487 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 487 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 487 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.301 G'MIC Smooth Wavelets node

*This documentation is for version 1.0 of G'MIC Smooth Wavelets (eu.gmic.SmoothWavelets).*

### Description

Author: Jerome Boulanger and David Tschumperle. Latest Update: 2013/27/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Threshold / `Threshold` | Double | 1 | |
| Iterations / `Iterations` | Integer | 10 | |
| Scales / `Scales` | Integer | 10 | |

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Table 488 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 488 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Parallel Processing / `Parallel_Processing` | Choice | Auto | **Auto**<br>**One Thread**<br>**Two Threads**<br>**Four Threads**<br>**Eight Threads**<br>**Sixteen Threads** |
| ), Spatial Overlap / `_Spatial_Overlap` | Integer | 24 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 488 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.302 G'MIC Snowflake node

*This documentation is for version 1.0 of G'MIC Snowflake (eu.gmic.Snowflake).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Recursions / `Recursions` | Integer | 5 | |
| Opacity / `Opacity` | Double | 1 | |
| Color / `Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.303 G'MIC Solidify node

*This documentation is for version 1.0 of G'MIC Solidify (eu.gmic.Solidify).*

#### Description

Note: This filter reconstructs transparent regions of an image using a transport-diffusion algorithm. Useful only for images having an alpha-channel.

Author: David Tschumperle. Latest Update: 2016/07/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness (%) / `Smoothness_` | Double | 75 | |
| Regularization / `Regularization` | Choice | Delaunay-Oriented | **Isotropic**<br>**Delaunay-Oriented**<br>**Edge-Oriented** |
| Regularization Iterations / `Regularization_Iterations` | Integer | 20 | |
| Dilation / Erosion / `Dilation__Erosion` | Integer | 0 | |
| Colorspace / `Colorspace` | Choice | Linear RGB | **sRGB**<br>**Linear RGB** |

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Table 490 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 490 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.304 G'MIC Solve Maze node

*This documentation is for version 1.0 of G'MIC Solve Maze (eu.gmic.SolveMaze).*

#### Description

Author: David Tschumperle. Latest Update: 2011/01/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Starting Point / `Starting_Point` | Double | x: 0.05 y: 0.05 | |
| Ending Point / `Ending_Point` | Double | x: 0.95 y: 0.95 | |
| Smoothness / `Smoothness` | Double | 0.1 | |
| Thickness / `Thickness` | Integer | 3 | |
| Color / `Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Maze Type / `Maze_Type` | Choice | Dark Walls | **Dark Walls**<br>**White Walls** |

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Table 491 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.305 G'MIC Sphere node

*This documentation is for version 1.0 of G'MIC Sphere (eu.gmic.Sphere).*

### Description

Author: David Tschumperle. Latest Update: 2011/07/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width / `Width` | Integer | 512 | |
| Height / `Height` | Integer | 512 | |
| Radius / `Radius` | Double | 90 | |
| Dilation / `Dilation` | Double | 0.5 | |
| Angle / `Angle` | Double | 0 | |
| Border Smoothness / `Border_Smoothness` | Double | 0 | |
| Border Width / `Border_Width` | Double | 20 | |
| Orientation / `Orientation` | Choice | 0 deg. | **0 deg.**<br>**90 deg.**<br>**180 deg.**<br>**270 deg.** |
| Background / `Background` | Choice | Transparent | **Transparent**<br>**Mean Color** |
| Fading / `Fading` | Double | 0 | |
| Fading Shape / `Fading_Shape` | Double | 0.5 | |

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Table 492 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.306 G'MIC Spherize node

*This documentation is for version 1.0 of G'MIC Spherize (eu.gmic.Spherize).*

### Description

Author: David Tschumperle. Latest Update: 2017/10/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius (%) / `Radius_` | Double | 50 | |
| Strength / `Strength` | Double | 1 | |
| Smoothness (%) / `Smoothness_` | Double | 0 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Ratio / `Ratio` | Double | 0 | |
| Angle / `Angle` | Double | 0 | |
| Interpolation / `Interpolation` | Choice | Cubic | **Nearest Neighbor**<br>**Linear**<br>**Cubic** |
| Preview Grid / `Preview_Grid` | Boolean | Off | |

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Table 493 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.307 G'MIC Split Details Alpha node

*This documentation is for version 1.0 of G'MIC Split Details Alpha (eu.gmic.SplitDetailsAlpha).*

### Description

Author: David Tschumperle. Latest Update: 2014/22/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Levels / `Number_of_Levels` | Integer | 6 | |
| Base Scale / `Base_Scale` | Double | 10 | |
| Details Scale / `Details_Scale` | Double | 1 | |
| Opacity Gain / `Opacity_Gain` | Double | 5 | |
| Preview Without Alpha / `Preview_Without_Alpha` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.308 G'MIC Split Details Gaussian node

*This documentation is for version 1.0 of G'MIC Split Details Gaussian (eu.gmic.SplitDetailsGaussian).*

#### Description

Author: David Tschumperle. Latest Update: 2015/22/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Scales / `Number_of_Scales` | Integer | 6 | |
| Base Scale / `Base_Scale` | Double | 10 | |
| Details Scale / `Details_Scale` | Double | 1 | |
| Sharpen Details in Preview / `Sharpen_Details_in_Preview` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.309 G'MIC Split Details Wavelets node

*This documentation is for version 1.0 of G'MIC Split Details Wavelets (eu.gmic.SplitDetailsWavelets).*

#### Description

Note: This filter decomposes an image into several detail scales, using wavelet atrous. It should provide similar results to the Wavelet Decompose Plug-in (by Marco Rossini).

Author: David Tschumperle. Latest Update: 2016/23/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Scales / `Number_of_Scales` | Integer | 6 | |
| Add Alpha Channels to Detail Scale Layers / `Add_Alpha_Channels_to_Detail_Scale_Layers` | Boolean | Off | |
| Sharpen Details in Preview / `Sharpen_Details_in_Preview` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.310 G'MIC Sponge node

*This documentation is for version 1.0 of G'MIC Sponge (eu.gmic.Sponge).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `Size` | Integer | 13 | |
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.311 G'MIC Square to Circle node

*This documentation is for version 1.0 of G'MIC Square to Circle (eu.gmic.SquaretoCircle).*

#### Description

This filter implements the mapping functions described in this page, by C. Fong:

http://squircular.blogspot.com/2015/09/mapping-circle-to-square.html

Author: David Tschumperle. Latest Update: 2017/10/30.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mode / `Mode` | Choice | Square to Circle | **Square to Circle**<br>**Circle to Square** |
| Interpolation / `Interpolation` | Choice | Linear | **Nearest Neighbor**<br>**Linear** |

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Table 498 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Boundary / `Boundary` | Choice | Transparent | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| X-Factor (%) / `XFactor_` | Double | 0 | |
| Y-Factor (%) / `YFactor_` | Double | 0 | |
| X-Offset (%) / `XOffset_` | Double | 0 | |
| Y-Offset (%) / `YOffset_` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 498 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.312 G'MIC Stained Glass node

*This documentation is for version 1.0 of G'MIC Stained Glass (eu.gmic.StainedGlass).*

#### Description

Author: David Tschumperle. Latest Update: 2011/18/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Edges / `Edges` | Double | 20 | |
| Shading / `Shading` | Double | 0.1 | |
| Thin Separators / `Thin_Separators` | Boolean | On | |
| Equalize / `Equalize` | Boolean | On | |
| Colors / `Colors` | Double | 1 | |
| Brightness (%) / `Brightness_` | Double | 0 | |
| Contrast (%) / `Contrast_` | Double | 0 | |
| Gamma (%) / `Gamma_` | Double | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 499 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.313 G'MIC Stamp node

*This documentation is for version 1.0 of G'MIC Stamp (eu.gmic.Stamp).*

#### Description

Authors: Antaron, Mahvin and David Tschumperle. Latest Update: 2015/16/03.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Auto-Threshold / `AutoThreshold` | Boolean | On | |
| Threshold / `Threshold` | Integer | 50 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Sharpening / `Sharpening` | Double | 0 | |
| Grain / `Grain` | Double | 0 | |
| Negative / `Negative` | Boolean | Off | |
| Anti-Aliasing / `AntiAliasing` | Boolean | On | |

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Table 500 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 500 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.314 G'MIC Stars node

*This documentation is for version 1.0 of G'MIC Stars (eu.gmic.Stars).*

#### Description

Author: David Tschumperle. Latest Update: 2012/01/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Double | 10 | |
| Depth / `Depth` | Double | 0 | |
| Size / `Size` | Integer | 32 | |
| Branches / `Branches` | Integer | 5 | |
| Thickness / `Thickness` | Double | 0.38 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Color / `Color` | Color | r: 1 g: 1 b: 0.392157 a: 0.392157 | |

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Table 501 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.315 G'MIC Stencil node

*This documentation is for version 1.0 of G'MIC Stencil (eu.gmic.Stencil).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `Radius` | Double | 3 | |
| Smoothness / `Smoothness` | Double | 0 | |
| Iterations / `Iterations` | Integer | 8 | |
| Aliasing / `Aliasing` | Double | 0 | |
| Stencil Type / `Stencil_Type` | Choice | Color | **Black & White**<br>**RGB**<br>**Color** |
| Transparency / `Transparency` | Boolean | Off | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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Table 502 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.316 G'MIC Stereographic Projection node

*This documentation is for version 1.0 of G'MIC Stereographic Projection (eu.gmic.StereographicProjection).*

#### Description

Author: David Tschumperle. Latest Update: 2018/07/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Transform / `Transform` | Choice | Direct | **Direct**<br>**Inverse** |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Radius / Angle / `Radius__Angle` | Double | x: 0.5<br>y: 0.75 | |
| Horizon Leveling (deg) / `Horizon_Leveling_deg` | Double | 0 | |
| Left / Right Blur (%) / `Left__Right_Blur_` | Double | 0 | |
| Dilation / `Dilation` | Double | 0 | |
| Mirror / `Mirror` | Choice | None | **None**<br>**X-Axis**<br>**Y-Axis**<br>**XY-Axis** |
| Boundary / `Boundary` | Choice | Transparent | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |

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Table 503 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.317 G'MIC Streak node

*This documentation is for version 1.0 of G'MIC Streak (eu.gmic.Streak).*

#### Description

Author: David Tschumperle. Latest Update: 2017/12/22.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mask Color / `Mask_Color` | Color | r: 1 g: 0 b: 0 a: 0 | |
| Step (%) / `Step_` | Double | 0 | |
| Angle / `Angle` | Double | 0 | |
| Propagation / `Propagation` | Choice | Bidirectional [Smooth] | **Backward**<br>**Forward**<br>**Bidirectional [Sharp]**<br>**Bidirectional [Smooth]** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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Table 504 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.318 G'MIC Stroke node

*This documentation is for version 1.0 of G'MIC Stroke (eu.gmic.Stroke).*

#### Description

Author: David Tschumperle. Latest Update: 2015/24/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Thickness (px) / `Thickness_px` | Integer | 3 | |
| Threshold (%) / `Threshold_` | Double | 50 | |
| Smoothness (px) / `Smoothness_px` | Double | 0 | |
| Shape / `Shape` | Choice | Round | **Square**<br>**Diamond**<br>**Round** |
| Direction / `Direction` | Choice | Outward | **Inward**<br>**Outward** |
| Zoom (%) / `Zoom_` | Double | 100 | |
| X-Shift (px) / `XShift_px` | Integer | 0 | |
| Y-Shift (px) / `YShift_px` | Integer | 0 | |
| Starting Color / `Starting_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Ending Color / `Ending_Color` | Color | r: 1 g: 1 b: 1 a: 1 | |
| Inside Color / `Inside_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Outside Color / `Outside_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Output Stroke Layer On / `Output_Stroke_Layer_On` | Choice | Top | **Bottom**<br>**Top** |
| Keep Original Image Size / `Keep_Original_Image_Size` | Boolean | Off | |

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Table 505 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.319 G'MIC Stylize node

*This documentation is for version 1.0 of G'MIC Stylize (eu.gmic.Stylize).*

#### Description

Style/Target Parameters:

Image Matching Parameters:

Advanced Parameters:

Author: David Tschumperle. Latest Update: 2019/01/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Style / `Style` | Choice | Custom Style (Top Layer) | **Custom Style (Top Layer)**<br>**Custom Style (Bottom Layer)**<br>**Braque: Landscape near Antwerp**<br>**Braque: Le Viaduc à l'Estaque**<br>**Braque: Little Bay at La Ciotat**<br>**Braque: The Mandola**<br>**Delaunay: Windows Open Simultaneously**<br>**Delaunay: Portrait de Metzinger**<br>**Hokusai: The Great Wave**<br>**Kandinsky: Squares with Concentric Circles**<br>**Kandinsky: Yellow-Red-Blue**<br>**Klee: Death and Fire**<br>**Klee: In the Style of Kairouan**<br>**Klee: Oriental Pleasure Garden Anagoria**<br>**Klee: Polyphony 2**<br>**Klee: Red waistcoat**<br>**Klimt: The Kiss**<br>**Mondrian: Composition in Red-Yellow-Blue**<br>**Mondrian: Evening; Red Tree**<br>**Mondrian: Gray Tree**<br>**Monet: San Giorgio Maggiore at Dusk**<br>**Monet: Water-Lily Pond**<br>**Monet: Wheatstacks - End of Summer**<br>**Munch: The Scream**<br>**Picabia: Udnie**<br>**Picasso: Les Demoiselles d'Avignon**<br>**Picasso: Seated Woman**<br>**Picasso: The Reservoir - Horta de Ebro**<br>**Pollock: Convergence**<br>**Pollock: Summertime Number 9A**<br>**Van Gogh: Almond Blossom**<br>**Van Gogh: Irises**<br>**Van Gogh: The Starry Night**<br>**Van Gogh: Wheat Field with Crows** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scale Style to Fit Target Resolution / `Scale_Style_to_Fit_Target_Resolution` | Choice | 75% | **No rescaling**<br>**10%**<br>**20%**<br>**30%**<br>**50%**<br>**75%**<br>**100%**<br>**150%**<br>**200%**<br>**250%**<br>**300%** |
| Style Variations / `Style_Variations` | Choice | None | **None**<br>**All XY-flips**<br>**All 90° rotations**<br>**All 45° rotations** |
| Preview Progression While Running / `Preview_Progression_While_Running` | Boolean | On | |
| Fidelity to Target (Finest) / `Fidelity_to_Target_Finest` | Double | 0.5 | |
| Fidelity to Target (Coarsest) / `Fidelity_to_Target_Coarsest` | Double | 2 | |
| Fidelity Smoothness (Finest) / `Fidelity_Smoothness_Finest` | Double | 3 | |
| Fidelity Smoothness (Coarsest) / `Fidelity_Smoothness_Coarsest` | Double | 0.5 | |
| Fidelity Chromaticity / `Fidelity_Chromaticity` | Double | 0.1 | |
| Match Colors With / `Match_Colors_With` | Choice | PCA transfer | **Nothing**<br>**Gamma Balance**<br>**Histogram Transfer**<br>**PCA transfer** |

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Table 506 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Colorspace / `Colorspace` | Choice | YCbCr (Luma/Chroma) | **sRGB**<br>**Linear RGB**<br>**YCbCr**<br>**YCbCr (Luma/Chroma)**<br>**YCbCr (Luma Only)**<br>**YCbCr (Chroma Only)**<br>**Lab**<br>**Lab (Luma/Chroma)**<br>**Lab (Luma Only)**<br>**Lab (Chroma Only)** |
| Keep Color Channels / `Keep_Color_Channels` | Choice | All | **All**<br>**Luminance Only (YCbCr)**<br>**Luminance Only (Lab)**<br>**Chrominances Only (CbCr)**<br>**@gui : Chrominances Only (ab)** |
| Smoothness / `Smoothness` | Double | 0.7 | |
| Also Match Gradients / `Also_Match_Gradients` | Double | 1 | |
| Init. Type / `Init_Type` | Choice | Best Match | **Best Match**<br>**Identity**<br>**Randomized** |
| Init. Resolution / `Init_Resolution` | Choice | 16px | **8px**<br>**16px**<br>**32px**<br>**64px**<br>**128px**<br>**256px** |
| Init. With High Gradients Only / `Init_With_High_Gradients_Only` | Double | 0 | |
| Patch Size for Analysis / `Patch_Size_for_Analysis` | Integer | 5 | |
| Patch Size for Synthesis / `Patch_Size_for_Synthesis` | Integer | 5 | |

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Table 506 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Patch Size for Synthesis (Final) / `Patch_Size_for_Synthesis_Final` | Integer | 7 | |
| Number of Matches (Finest) / `Number_of_Matches_Finest` | Integer | 1 | |
| Number of Matches (Coarsest) / `Number_of_Matches_Coarsest` | Integer | 30 | |
| Penalize Patch Repetitions / `Penalize_Patch_Repetitions` | Integer | 10 | |
| Matching Precision (Smaller is Faster) / `Matching_Precision_Smaller_is_Faster` | Double | 2 | |
| Scale Factor / `Scale_Factor` | Double | 1.85 | |
| Skip Finest Scales / `Skip_Finest_Scales` | Integer | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 506 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.320 G'MIC Super-Pixels node

*This documentation is for version 1.0 of G'MIC Super-Pixels (eu.gmic.SuperPixels).*

### Description

Author: David Tschumperle. Latest Update: 2017/11/16.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Size / `Size` | Integer | 16 | |
| Regularity / `Regularity` | Double | 10 | |
| Iterations / `Iterations` | Integer | 5 | |
| Colors / `Colors` | Choice | Average | **Random**<br>**Average** |
| Border Opacity / `Border_Opacity` | Double | 1 | |
| Border Color / `Border_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 507 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.321 G'MIC Superformula node

*This documentation is for version 1.0 of G'MIC Superformula (eu.gmic.Superformula).*

#### Description

Author: David Tschumperle. Latest Update: 2011/18/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resolution / `Resolution` | Integer | 4096 | |
| X-Size / `XSize` | Double | 0.9 | |
| Y-Size / `YSize` | Double | 0.9 | |
| M / `M` | Integer | 8 | |
| N1 / `N1` | Double | 1 | |
| N2 / `N2` | Double | 5 | |
| N3 / `N3` | Double | 8 | |
| X-Angle / `XAngle` | Double | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Y-Angle / `YAngle` | Double | 0 | |
| Z-Angle / `ZAngle` | Double | 0 | |
| Thickness / `Thickness` | Double | 3 | |
| Color / `Color` | Color | r: 0.501961 g: 1 b: 0.501961 a: 0.501961 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.322 G'MIC Symmetric 2D Shape node

*This documentation is for version 1.0 of G'MIC Symmetric 2D Shape (eu.gmic.Symmetric2DShape).*

### Description

Author: David Tschumperle. Latest Update: 2019/06/17.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Subdivisions / `Subdivisions` | Integer | 5 | |
| Center / `Center` | Double | x: 0.5 y: 0.5 | |
| Angle / Size / `Angle__Size` | Double | x: 0.5 y: 0.3 | |
| Control Point 1 / `Control_Point_1` | Double | x: 0.5 y: 0.25 | |
| Control Point 2 / `Control_Point_2` | Double | x: 0.56 y: 0.42 | |
| Control Point 3 / `Control_Point_3` | Double | x: 0.52 y: 0.52 | |
| Control Point 4 / `Control_Point_4` | Double | x: 0.52 y: 0.52 | |
| Control Point 5 / `Control_Point_5` | Double | x: 0.52 y: 0.52 | |
| Control Point 6 / `Control_Point_6` | Double | x: 0.52 y: 0.52 | |
| Drawing Mode / `Drawing_Mode` | Choice | Filled | **Outlined**<br>**Filled** |
| Color / `Color` | Color | r: 1 g: 0 b: 1 a: 1 | |
| Opacity (%) / `Opacity_` | Double | 100 | |

continues on next page

Table 509 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.323 G'MIC Symmetrize node

*This documentation is for version 1.0 of G'MIC Symmetrize (eu.gmic.Symmetrize).*

### Description

Author: David Tschumperle. Latest Update: 2018/06/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Point 1 / `Point_1` | Double | x: 0.5<br>y: 0.5 | |
| Point 2 / `Point_2` | Double | x: 0.5<br>y: 0.75 | |
| Angle / `Angle` | Double | 0 | |
| Boundary / `Boundary` | Choice | Transparent | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Type / `Type` | Choice | Symmetry | **Symmetry**<br>**Antisymmetry** |
| Swap Sides / `Swap_Sides` | Boolean | Off | |

continues on next page

Table 510 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.324 G'MIC Taquin node

*This documentation is for version 1.0 of G'MIC Taquin (eu.gmic.Taquin).*

### Description

Author: David Tschumperle. Latest Update: 2014/13/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 7 | |
| Y-Tiles / `YTiles` | Integer | 7 | |
| Remove Tile / `Remove_Tile` | Choice | None | **None**<br>**First**<br>**Last**<br>**Random** |
| Relief / `Relief` | Double | 50 | |
| Border Thickness (%) / `Border_Thickness_` | Double | 5 | |
| Border Outline / `Border_Outline` | Integer | 0 | |
| Ouline Color / `Ouline_Color` | Color | r: 0 g: 0 b: 0 a: 0 | |
| Random Seed / `Random_Seed` | Integer | 0 | |

continues on next page

Table 511 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.325 G'MIC Tetris node

*This documentation is for version 1.0 of G'MIC Tetris (eu.gmic.Tetris).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scale / `Scale` | Integer | 10 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 512 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.326 G'MIC Textured Glass node

*This documentation is for version 1.0 of G'MIC Textured Glass (eu.gmic.TexturedGlass).*

#### Description

Author: David Tschumperle. Latest Update: 2013/21/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Amplitude / `XAmplitude` | Double | 40 | |
| Y-Amplitude / `YAmplitude` | Double | 40 | |
| X-Smoothness / `XSmoothness` | Double | 1 | |
| Y-Smoothness / `YSmoothness` | Double | 1 | |
| Edge Attenuation / `Edge_Attenuation` | Double | 0 | |
| Edge Influence / `Edge_Influence` | Double | 2 | |
| Noise Scale / `Noise_Scale` | Integer | 0 | |

continues on next page

Table 513 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 513 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.327 G'MIC Thin Edges node

*This documentation is for version 1.0 of G'MIC Thin Edges (eu.gmic.ThinEdges).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Smoothness / `Smoothness` | Double | 0 | |
| Threshold / `Threshold` | Double | 15 | |
| Negative Colors / `Negative_Colors` | Boolean | Off | |

continues on next page

Table 514 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 514 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.328 G'MIC Tileable Rotation node

*This documentation is for version 1.0 of G'MIC Tileable Rotation (eu.gmic.TileableRotation).*

#### Description

Note: This filter implements the tileable rotation technique described by Peter Yu, at:

[Peter Yu] Create rotated tileable patterns: http://www.peteryu.ca/tutorials/gimp/rotate_tileable_patterns

Author: David Tschumperle. Latest Update: 2011/26/05.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Angle / `Angle` | Double | 45 | |
| Maximum Size Factor / `Maximum_Size_Factor` | Integer | 8 | |
| Array Mode / `Array_Mode` | Choice | None | **None**<br>**x-axis**<br>**y-axis**<br>**xy-axes**<br>**2xy-axes** |

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Table 515 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.329 G'MIC Tiled Isolation node

*This documentation is for version 1.0 of G'MIC Tiled Isolation (eu.gmic.TiledIsolation).*

### Description

Author: David Tschumperle. Latest Update: 2011/13/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Size / `XSize` | Double | 10 | |
| Y-Size / `YSize` | Double | 10 | |
| X-Border / `XBorder` | Double | 5 | |
| Y-Border / `YBorder` | Double | 5 | |
| Keep Tiles Square / `Keep_Tiles_Square` | Boolean | On | |
| Keep Borders Square / `Keep_Borders_Square` | Boolean | On | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.330 G'MIC Tiled Normalization node

*This documentation is for version 1.0 of G'MIC Tiled Normalization (eu.gmic.TiledNormalization).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 25 | |
| Y-Tiles / `YTiles` | Integer | 25 | |
| Minimal Value / `Minimal_Value` | Double | 0 | |
| Maximal Value / `Maximal_Value` | Double | 255 | |

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Table 517 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 517 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.331 G'MIC Tiled Parameterization node

*This documentation is for version 1.0 of G'MIC Tiled Parameterization (eu.gmic.TiledParameterization).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 10 | |
| Y-Tiles / `YTiles` | Integer | 10 | |
| Fitting Function / `Fitting_Function` | Choice | Linear | **Linear**<br>**Quadratic** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

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Table 518 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.332 G'MIC Tiled Random Shifts node

*This documentation is for version 1.0 of G'MIC Tiled Random Shifts (eu.gmic.TiledRandomShifts).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 10 | |
| Y-Tiles / `YTiles` | Integer | 10 | |
| Amplitude / `Amplitude` | Double | 10 | |
| Opacity / `Opacity` | Double | 1 | |

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Table 519 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.333 G'MIC Tiled Rotation node

*This documentation is for version 1.0 of G'MIC Tiled Rotation (eu.gmic.TiledRotation).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 5 | |
| Y-Tiles / `YTiles` | Integer | 5 | |
| Angle / `Angle` | Double | 15 | |
| X-Shadow / `XShadow` | Double | 3 | |
| Y-Shadow / `YShadow` | Double | 3 | |
| Smoothness / `Smoothness` | Double | 1.8 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |

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Table 520 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.334 G'MIC Tiles to Layers node

*This documentation is for version 1.0 of G'MIC Tiles to Layers (eu.gmic.TilestoLayers).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 3 | |
| Y-Tiles / `YTiles` | Integer | 3 | |
| Force Tiles to Have Same Size / `Force_Tiles_to_Have_Same_Size` | Boolean | Off | |

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Table 521 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.335 G'MIC Tone Mapping node

*This documentation is for version 1.0 of G'MIC Tone Mapping (eu.gmic.ToneMapping).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Threshold / `Threshold` | Double | 0.5 | |
| Gamma / `Gamma` | Double | 0.7 | |
| Smoothness / `Smoothness` | Double | 0.1 | |
| Iterations / `Iterations` | Integer | 30 | |

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Table 522 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 522 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 522 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.336 G'MIC Tone Mapping Fast node

*This documentation is for version 1.0 of G'MIC Tone Mapping Fast (eu.gmic.ToneMappingFast).*

#### Description

Authors: Paul Nasca and David Tschumperle. Latest Update: 2011/10/06.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `Radius` | Double | 3 | |
| Power / `Power` | Double | 0.5 | |

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Table 523 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 523 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 523 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.337 G'MIC Tones to Layers node

*This documentation is for version 1.0 of G'MIC Tones to Layers (eu.gmic.TonestoLayers).*

#### Description

Author: David Tschumperle. Latest Update: 2014/05/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Number of Tones / `Number_of_Tones` | Integer | 3 | |
| Start of Mid-Tones / `Start_of_MidTones` | Integer | 85 | |
| End of Mid-Tones / `End_of_MidTones` | Integer | 170 | |
| Smoothness / `Smoothness` | Double | 0.5 | |
| Alpha / `Alpha` | Choice | Binary | **Binary**<br>**Scalar** |

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Table 524 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.338 G'MIC Transfer Colors Histogram node

*This documentation is for version 1.0 of G'MIC Transfer Colors Histogram (eu.gmic.TransferColorsHistogram).*

### Description

Note: This filter needs at least two layers to work properly. Set the Input layers option to handle multiple input layers.

Author: David Tschumperle. Latest Update: 2020/01/13.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Reference Colors / `Reference_Colors` | Choice | Bottom Layer | **Bottom Layer**<br>**Top Layer** |
| Preview_ref_point / `Preview_ref_point` | Double | x: 0.01<br>y: 0.01 | |

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Table 525 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 525 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.339 G'MIC Transfer Colors PCA node

*This documentation is for version 1.0 of G'MIC Transfer Colors PCA (eu.gmic.TransferColorsPCA).*

#### Description

Note: This filter needs at least two layers to work properly. Set the Input layers option to handle multiple input layers.

Author: David Tschumperle. Latest Update: 2020/01/13.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Reference Colors / `Reference_Colors` | Choice | Bottom Layer | **Bottom Layer**<br>**Top Layer** |
| Preview_ref_point / `Preview_ref_point` | Double | x: 0.01<br>y: 0.01 | |

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Table 526 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 526 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.340 G'MIC Transfer Colors Variational node

*This documentation is for version 1.0 of G'MIC Transfer Colors Variational (eu.gmic.TransferColorsVariational).*

#### Description

Instructions:

- This filter transfers the colors of one layer to all the others.
- Don't forget to set the Input layers... option on the left to manage your input layers.

Author: David Tschumperle. Latest Update: 2015/04/04.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Layer -1 | | Yes |
| Layer -2 | | Yes |
| Layer -3 | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Regularization / `Regularization` | Integer | 8 | |
| Preserve Luminance / `Preserve_Luminance` | Double | 0.2 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Precision / `Precision` | Choice | Normal | **Low**<br>**Normal**<br>**High**<br>**Very High** |
| Reference Colors / `Reference_Colors` | Choice | Bottom Layer | **Bottom Layer**<br>**Top Layer** |
| Add User-Defined Constraints (Interactive) / `Add_UserDefined_Constraints_Interactive` | Boolean | Off | |
| Preview_ref_point / `Preview_ref_point` | Double | x: 0.01<br>y: 0.01 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.341 G'MIC Truchet node

*This documentation is for version 1.0 of G'MIC Truchet (eu.gmic.Truchet).*

#### Description

Author: David Tschumperle. Latest Update: 2011/26/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scale / `Scale` | Integer | 32 | |
| Radius / `Radius` | Integer | 5 | |
| Smoothness / `Smoothness` | Double | 1 | |
| Type / `Type` | Choice | Curved | **Straight**<br>**Curved** |
| Color / `Color` | Choice | White on Black | **White on Black**<br>**Black on White**<br>**White on Transparent**<br>**Black on Transparent**<br>**Transparent on White**<br>**Transparent on Black**<br>**Random** |

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Table 528 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.342 G'MIC Tunnel node

*This documentation is for version 1.0 of G'MIC Tunnel (eu.gmic.Tunnel).*

### Description

Author: David Tschumperle. Latest Update: 2012/22/11.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Depth / `Depth` | Integer | 4 | |
| Factor / `Factor` | Double | 80 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Opacity / `Opacity` | Double | 0.2 | |
| Angle / `Angle` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.343 G'MIC Turbulence node

*This documentation is for version 1.0 of G'MIC Turbulence (eu.gmic.Turbulence).*

#### Description

Author: Preben Soeberg. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `Radius` | Double | 128 | |
| Octaves / `Octaves` | Integer | 6 | |
| Damping per Octave / `Damping_per_Octave` | Double | 4 | |
| Difference Mixing / `Difference_Mixing` | Double | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Mode / `Mode` | Choice | Turbulence | **Turbulence**<br>**Turbulence 2**<br>**Fractal Noise**<br>**Fractured Clouds**<br>**Stardust**<br>**Pea Soup** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.344 G'MIC Twirl node

*This documentation is for version 1.0 of G'MIC Twirl (eu.gmic.Twirl).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 1 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.345 G'MIC Upscale DCCI2x node

*This documentation is for version 1.0 of G'MIC Upscale DCCI2x (eu.gmic.UpscaleDCCI2x).*

#### Description

Directional Cubic Convolution Interpolation

Author: Garagecoder. Latest Update : 2015/11/07.

Note: This filter re-implements the scaling algorithm described at :

wikipedia.org: https://en.wikipedia.org/wiki/Directional_Cubic_Convolution_Interpolation

The algorithm is intended for enlarging images while avoiding

artifacts, e.g. staircase artifacts.

Threshold controls edge[lower] to texture[higher] balance.

Exponent controls texture edge sharpness[higher].

Warning: highly experimental…

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Threshold / `Threshold` | Double | 1.15 | |
| Exponent / `Exponent` | Integer | 5 | |
| Extend 1px / `Extend_1px` | Boolean | Off | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

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Table 532 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.346 G'MIC Upscale Diffusion node

*This documentation is for version 1.0 of G'MIC Upscale Diffusion (eu.gmic.UpscaleDiffusion).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width / `Width` | String | 200% | |
| Height / `Height` | String | 200% | |
| Smoothness / `Smoothness` | Double | 2 | |
| Anisotropy / `Anisotropy` | Double | 0.4 | |
| Sharpness / `Sharpness` | Double | 50 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.347 G'MIC Upscale Scale2x node

*This documentation is for version 1.0 of G'MIC Upscale Scale2x (eu.gmic.UpscaleScale2x).*

### Description

Note: This filter re-implements the scaling algorithm described at :

http://scale2x.sourceforge.net

This filter is useful for resizing images that have very few colors (e.g. indexed images). It is generally useless for 1 colors images.

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Scaling Factor / `Scaling_Factor` | Choice | x 2 | **x 2**<br>**x 3**<br>**x 4**<br>**x 6**<br>**x 8**<br>**x 9**<br>**x 12**<br>**x 16**<br>**x 18**<br>**x 27** |
| Colorbase / `Colorbase` | Choice | RGB | **RGB**<br>**YCbCr**<br>**Lab** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.348 G'MIC User-Defined node

*This documentation is for version 1.0 of G'MIC User-Defined (eu.gmic.UserDefined).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Red - Green - Blue - Alpha / `Red__Green__Blue__Alpha` | String | i | |
| Red - Green - Blue / `Red__Green__Blue` | String | i + 90*(x/w)*cos(i/10) | |
| Red / `Red` | String | i | |
| Green / `Green` | String | i | |
| Blue / `Blue` | String | i | |
| Alpha / `Alpha` | String | i | |
| Value Normalization / `Value_Normalization` | Choice | None | **None**<br>**RGB**<br>**RGBA** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.349 G'MIC Vector Painting node

*This documentation is for version 1.0 of G'MIC Vector Painting (eu.gmic.VectorPainting).*

### Description

Author: David Tschumperle.

Latest Update: 2015/25/08.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Details / `Details` | Double | 9 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.350 G'MIC Vignette node

*This documentation is for version 1.0 of G'MIC Vignette (eu.gmic.Vignette).*

### Description

Author: David Tschumperle. Latest Update: 2012/24/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Strength / `Strength` | Double | 70 | |
| Min Radius / `Min_Radius` | Double | 70 | |
| Max Radius / `Max_Radius` | Double | 95 | |
| Color / `Color` | Color | r: 0 g: 0 b: 0 a: 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.351 G'MIC Visible Watermark node

*This documentation is for version 1.0 of G'MIC Visible Watermark (eu.gmic.VisibleWatermark).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Text / `Text` | String | \251 G'MIC | |
| Opacity / `Opacity` | Double | 0.4 | |
| Size / `Size` | Integer | 50 | |
| Angle / `Angle` | Double | 25 | |
| Smoothness / `Smoothness` | Double | 0.5 | |
| Lightness / `Lightness` | Choice | Brighter | **Darker**<br>**Brighter** |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.352 G'MIC Warhol node

*This documentation is for version 1.0 of G'MIC Warhol (eu.gmic.Warhol).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Tiles / `XTiles` | Integer | 3 | |
| Y-Tiles / `YTiles` | Integer | 3 | |
| Smoothness / `Smoothness` | Double | 2 | |
| Color / `Color` | Double | 40 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |

continues on next page

Table 539 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.353 G'MIC Warp by Intensity node

*This documentation is for version 1.0 of G'MIC Warp by Intensity (eu.gmic.WarpbyIntensity).*

#### Description

Author: David Tschumperle. Latest Update: 2016/02/09.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| X-Factor / `XFactor` | Double | 0.04 | |
| Y-Factor / `YFactor` | Double | 0.04 | |
| X-Offset / `XOffset` | Double | 128 | |
| Y-Offset / `YOffset` | Double | 128 | |
| Correlated Channels / `Correlated_Channels` | Boolean | Off | |
| Interpolation / `Interpolation` | Choice | Linear | **Nearest Neighbor**<br>**Linear** |

continues on next page

Table 540 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Boundary / `Boundary` | Choice | Mirror | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

continues on next page

Table 540 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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Table 540 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.14.354 G'MIC Water node

*This documentation is for version 1.0 of G'MIC Water (eu.gmic.Water).*

### Description

Author: David Tschumperle. Latest Update: 2016/07/10.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 30 | |
| Smoothness / `Smoothness` | Double | 1.5 | |
| Angle / `Angle` | Double | 45 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.355 G'MIC Wave node

*This documentation is for version 1.0 of G'MIC Wave (eu.gmic.Wave).*

### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 10 | |
| Frequency / `Frequency` | Double | 0.4 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.356 G'MIC Weave node

*This documentation is for version 1.0 of G'MIC Weave (eu.gmic.Weave).*

#### Description

Author: David Tschumperle. Latest Update: 2013/18/01.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Integer | 6 | |
| Thickness / `Thickness` | Double | 65 | |
| Shadow / `Shadow` | Double | 0 | |
| Shading / `Shading` | Double | 0.5 | |
| Fibers Amplitude / `Fibers_Amplitude` | Double | 0 | |
| Fibers Smoothness / `Fibers_Smoothness` | Double | 0 | |

continues on next page

Table 543 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Angle / `Angle` | Choice | 0 deg. | **0 deg.**<br>**22.5 deg.**<br>**45 deg.**<br>**67.5 deg.** |
| X-Curvature / `XCurvature` | Double | 0 | |
| Y-Curvature / `YCurvature` | Double | 0 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.357 G'MIC Whirl Drawing node

*This documentation is for version 1.0 of G'MIC Whirl Drawing (eu.gmic.WhirlDrawing).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Double | 20 | |
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.358 G'MIC Whirls node

*This documentation is for version 1.0 of G'MIC Whirls (eu.gmic.Whirls).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Density / `Density` | Integer | 7 | |
| Smoothness / `Smoothness` | Double | 2 | |
| Darkness / `Darkness` | Double | 0.2 | |
| Lightness / `Lightness` | Double | 1.8 | |

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Table 545 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | YCbCr [Luminance] | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |

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Table 545 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 545 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.359 G'MIC Wind node

*This documentation is for version 1.0 of G'MIC Wind (eu.gmic.Wind).*

#### Description

Author: David Tschumperle. Latest Update: 2011/13/07.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Amplitude / `Amplitude` | Integer | 20 | |
| Angle / `Angle` | Double | 0 | |
| Attenuation / `Attenuation` | Double | 0.7 | |
| Threshold / `Threshold` | Double | 20 | |
| Mode / `Mode` | Choice | Brighter | **Darker**<br>**Brighter** |

continues on next page

Table 546 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Channel(s) / `Channels` | Choice | All | **All**<br>**RGBA [All]**<br>**RGB [All]**<br>**RGB [Red]**<br>**RGB [Green]**<br>**RGB [Blue]**<br>**RGBA [Alpha]**<br>**Linear RGB [All]**<br>**Linear RGB [Red]**<br>**Linear RGB [Green]**<br>**Linear RGB [Blue]**<br>**YCbCr [Luminance]**<br>**YCbCr [Blue-Red Chrominances]**<br>**YCbCr [Blue Chrominance]**<br>**YCbCr [Red Chrominance]**<br>**YCbCr [Green Chrominance]**<br>**Lab [Lightness]**<br>**Lab [ab-Chrominances]**<br>**Lab [a-Chrominance]**<br>**Lab [b-Chrominance]**<br>**Lch [ch-Chrominances]**<br>**Lch [c-Chrominance]**<br>**Lch [h-Chrominance]**<br>**HSV [Hue]**<br>**HSV [Saturation]**<br>**HSV [Value]**<br>**HSI [Intensity]**<br>**HSL [Lightness]**<br>**CMYK [Cyan]**<br>**CMYK [Magenta]**<br>**CMYK [Yellow]**<br>**CMYK [Key]**<br>**YIQ [Luma]**<br>**YIQ [Chromas]**<br>**RYB [All]**<br>**RYB [Red]**<br>**RYB [Yellow]**<br>**RYB [Blue]** |
| Value Action / `Value_Action` | Choice | None | **None**<br>**Cut**<br>**Normalize** |

continues on next page

Table 546 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Preview Type / `Preview_Type` | Choice | Full | **Full**<br>**Forward Horizontal**<br>**Forward Vertical**<br>**Backward Horizontal**<br>**Backward Vertical**<br>**Duplicate Top**<br>**Duplicate Left**<br>**Duplicate Bottom**<br>**Duplicate Right**<br>**Duplicate Horizontal**<br>**Duplicate Vertical**<br>**Checkered**<br>**Checkered Inverse** |
| Preview Split / `Preview_Split` | Double | x: 0.5<br>y: 0.5 | |
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Preview/Draft Mode / `PreviewDraft_Mode` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |

continues on next page

Table 546 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

### 2.14.360 G'MIC Zoom node

*This documentation is for version 1.0 of G'MIC Zoom (eu.gmic.Zoom).*

#### Description

Author: David Tschumperle. Latest Update: 2010/29/12.

Wrapper for the G'MIC framework (http://gmic.eu) written by Tobias Fleischer (http://www.reduxfx.com) and Frederic Devernay.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Factor / `Factor` | Double | 2 | |
| Center / `Center` | Double | x: 0.5<br>y: 0.5 | |
| Boundary / `Boundary` | Choice | Transparent | **Transparent**<br>**Nearest**<br>**Periodic**<br>**Mirror** |

continues on next page

Table 547 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Output Layer / `Output_Layer` | Choice | Layer 0 | **Merged**<br>**Layer 0**<br>**Layer -1**<br>**Layer -2**<br>**Layer -3**<br>**Layer -4**<br>**Layer -5**<br>**Layer -6**<br>**Layer -7**<br>**Layer -8**<br>**Layer -9** |
| Resize Mode / `Resize_Mode` | Choice | Dynamic | **Fixed (Inplace)**<br>**Dynamic**<br>**Downsample 1/2**<br>**Downsample 1/4**<br>**Downsample 1/8**<br>**Downsample 1/16** |
| Ignore Alpha / `Ignore_Alpha` | Boolean | Off | |
| Global Random Seed / `Global_Random_Seed` | Integer | 0 | |
| Animate Random Seed / `Animate_Random_Seed` | Boolean | Off | |
| Log Verbosity / `Log_Verbosity` | Choice | Off | **Off**<br>**Level 1**<br>**Level 2**<br>**Level 3** |

## 2.15 Extra nodes

The following sections contain documentation about every node in the Extra group. Node groups are available by clicking on buttons in the left toolbar, or by right-clicking the mouse in the Node Graph area.

### 2.15.1 Arc node

*This documentation is for version 4.2 of Arc (net.fxarena.openfx.Arc).*

#### Description

Arc Distort transform node.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Angle / `angle` | Double | 60 | Arc angle |
| Rotate / `rotate` | Double | 0 | Arc rotate |
| Top radius / `top` | Double | 0 | Arc top radius |
| Bottom radius / `bottom` | Double | 0 | Arc bottom radius |
| Flip / `flip` | Boolean | Off | Flip image |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect |

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Table 548 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Virtual Pixel / `pixel` | Choice | Trans-parent | Virtual Pixel Method<br>**Undefined**<br>**Background**<br>**Black**<br>**CheckerTile**<br>**Dither**<br>**Edge**<br>**Gray**<br>**HorizontalTile**<br>**HorizontalTileEdge**<br>**Mirror**<br>**Random**<br>**Tile**<br>**Transparent**<br>**VerticalTile**<br>**VerticalTileEdge**<br>**White** |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

## 2.15.2 Charcoal node

*This documentation is for version 2.2 of Charcoal (net.fxarena.openfx.Charcoal).*

### Description

Charcoal effect node.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `radius` | Double | 1 | Adjust radius |
| Sigma / `sigma` | Double | 0 | Adjust sigma |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

### 2.15.3 Edges node

*This documentation is for version 2.0 of Edges (net.fxarena.openfx.Edges).*

#### Description

Edge extraction node.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Width / `width` | Double | 2 | Width of edges |
| Brightness / `brightness` | Double | 5 | Adjust edge brightness |
| Smoothing / `smoothing` | Double | 1 | Adjust edge smoothing |
| Grayscale / `gray` | Boolean | Off | Convert to grayscale before effect |

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Kernel / `kernel` | Choice | Diamond-Kernel | Convolution Kernel<br>**BinomialKernel**<br>**LaplacianKernel**<br>**SobelKernel**<br>**FreiChenKernel**<br>**RobertsKernel**<br>**PrewittKernel**<br>**CompassKernel**<br>**KirschKernel**<br>**DiamondKernel**<br>**SquareKernel**<br>**RectangleKernel**<br>**OctagonKernel**<br>**DiskKernel**<br>**PlusKernel**<br>**CrossKernel**<br>**RingKernel**<br>**EdgesKernel**<br>**CornersKernel**<br>**DiagonalsKernel**<br>**LineEndsKernel**<br>**LineJunctionsKernel**<br>**RidgesKernel**<br>**ConvexHullKernel**<br>**ThinSEKernel**<br>**SkeletonKernel**<br>**ChebyshevKernel**<br>**ManhattanKernel**<br>**OctagonalKernel**<br>**EuclideanKernel** |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

### 2.15.4 Implode node

*This documentation is for version 2.3 of Implode (net.fxarena.openfx.Implode).*

### Description

Implode transform node.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Factor / `factor` | Double | 0.5 | Implode image by factor |
| Swirl / `swirl` | Double | 0 | Swirl image by degree |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

## 2.15.5 Modulate node

*This documentation is for version 1.2 of Modulate (net.fxarena.openfx.Modulate).*

### Description

Modulate color node.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Brightness / `brightness` | Double | 100 | Adjust brightness (%) |
| Saturation / `saturation` | Double | 100 | Adjust saturation (%) |
| Hue / `hue` | Double | 100 | Adjust hue (%) |
| OpenMP / `openmp` | Boolean | On | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |
| OpenCL / `opencl` | Boolean | Off | Enable/Disable OpenCL. This will enable the plugin to use supported GPU(s) for better performance. |

## 2.15.6 Morphology node

*This documentation is for version 1.0 of Morphology (net.fxarena.openfx.Morphology).*

### Description

Morphology modifies an image in various ways based on the nearby neighbourhood of the other pixels that surround it. This in turn can provide a huge range of effects, Shape expansion and contraction (dilate/erode), to distance from edge, to thining down to a skeleton, or mid-line axis. For more information read https://imagemagick.org/Usage/morphology/#basic

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect. |

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Table 553 – continued from previous page

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Virtual Pixel / `vpixel` | Choice | Transparent | Virtual Pixel Method.<br>**Undefined**<br>**Background**<br>**Black**<br>**CheckerTile**<br>**Dither**<br>**Edge**<br>**Gray**<br>**HorizontalTile**<br>**HorizontalTileEdge**<br>**Mirror**<br>**Random**<br>**Tile**<br>**Transparent**<br>**VerticalTile**<br>**VerticalTileEdge**<br>**White** |
| Iterations / `iterations` | Integer | 1 | Iterations used |
| Method / `method` | Choice | Dilate | Method used for Morphology.<br>https://imagemagick.org/Usage/morphology/#basic<br>**Convolve**<br>**Correlate**<br>**Erode**<br>**Dilate**<br>**ErodeIntensity**<br>**DilateIntensity**<br>**Distance**<br>**Open**<br>**Close**<br>**OpenIntensity**<br>**CloseIntensity**<br>**Smooth**<br>**EdgeIn**<br>**EdgeOut**<br>**Edge**<br>**TopHat**<br>**BottomHat**<br>**HitAndMiss**<br>**Thinning**<br>**Thicken**<br>**Voronoi**<br>**IterativeDistance** |

continues on next page

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| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| kernel / `kernel` | String | Octagon:3 | Kernel used for Morphology. https://imagemagick.org/Usage/morphology/#basic |

### 2.15.7 Oilpaint node

*This documentation is for version 2.1 of Oilpaint (net.fxarena.openfx.Oilpaint).*

#### Description

Oilpaint filter node.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `radius` | Double | 1 | Adjust radius |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

### 2.15.8 Polar node

*This documentation is for version 4.3 of Polar (net.fxarena.openfx.Polar).*

### Description

Polar Distort transform node.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Rotate / `rotate` | Double | 0 | Polar rotate |
| DePolar / `dePolar` | Boolean | Off | DePolar |
| Flip / `flip` | Boolean | Off | Polar Flip |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect |
| Virtual Pixel / `pixel` | Choice | Transparent | Virtual Pixel Method<br>**Undefined**<br>**Background**<br>**Black**<br>**CheckerTile**<br>**Dither**<br>**Edge**<br>**Gray**<br>**HorizontalTile**<br>**HorizontalTileEdge**<br>**Mirror**<br>**Random**<br>**Tile**<br>**Transparent**<br>**VerticalTile**<br>**VerticalTileEdge**<br>**White** |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. Note that this plugin is known to be unstable with this settings enabled, use at own risk. |

### 2.15.9 Polaroid node

*This documentation is for version 1.4 of Polaroid (net.fxarena.openfx.Polaroid).*

#### Description

Polaroid image effect node.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Angle / `angle` | Double | 5 | Adjust polaroid angle |
| Caption / `caption` | String | Enter text | Add caption to polaroid |
| Font family / `font` | Choice | | The name of the font to be used |
| Font size / `size` | Integer | 64 | The height of the characters to render in pixels |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

### 2.15.10 Reflection node

*This documentation is for version 3.2 of Reflection (net.fxarena.openfx.Reflection).*

#### Description

Mirror/Reflection transform node.

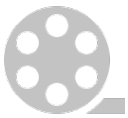
### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Reflection offset / `offset` | Integer | 0 | Reflection offset |
| Reflection spacing / `spacing` | Integer | 0 | Space between image and reflection |
| Reflection / `reflection` | Boolean | On | Apply reflection |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect |
| Mirror / `mirror` | Choice | Undefined | Select mirror type<br>**Undefined**<br>**North**<br>**South**<br>**East**<br>**West**<br>**NorthWest**<br>**NorthEast**<br>**SouthWest**<br>**SouthEast**<br>**Flip**<br>**Flop**<br>**Flip+Flop** |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

## 2.15.11 Roll node



*This documentation is for version 2.9 of Roll (net.fxarena.openfx.Roll).*

### Description

Roll effect using ImageMagick.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect. |
| Virtual Pixel / `vpixel` | Choice | Transparent | Virtual Pixel Method.<br>**Undefined**<br>**Background**<br>**Black**<br>**CheckerTile**<br>**Dither**<br>**Edge**<br>**Gray**<br>**HorizontalTile**<br>**HorizontalTileEdge**<br>**Mirror**<br>**Random**<br>**Tile**<br>**Transparent**<br>**VerticalTile**<br>**VerticalTileEdge**<br>**White** |
| X / `x` | Double | 0 | Adjust roll X |
| Y / `y` | Double | 0 | Adjust roll Y |

### 2.15.12 Sketch node

*This documentation is for version 2.2 of Sketch (net.fxarena.openfx.Sketch).*

#### Description

Sketch effect node.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Radius / `radius` | Double | 1 | Adjust radius |
| Sigma / `sigma` | Double | 0 | Adjust sigma |
| Angle / `angle` | Double | 0 | Adjust angle |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

### 2.15.13 Swirl node

*This documentation is for version 2.9 of Swirl (net.fxarena.openfx.Swirl).*

#### Description

Swirl effect using ImageMagick.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect. |
| Virtual Pixel / `vpixel` | Choice | Transparent | Virtual Pixel Method.<br>**Undefined**<br>**Background**<br>**Black**<br>**CheckerTile**<br>**Dither**<br>**Edge**<br>**Gray**<br>**HorizontalTile**<br>**HorizontalTileEdge**<br>**Mirror**<br>**Random**<br>**Tile**<br>**Transparent**<br>**VerticalTile**<br>**VerticalTileEdge**<br>**White** |
| Amount / `amount` | Double | 60 | Swirl amount. |

## 2.15.14 Texture node

*This documentation is for version 3.8 of Texture (net.fxarena.openfx.Texture).*

### Description

Texture/Background generator node.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Background / `background` | Choice | Misc/Stripes | Background type<br>**Plasma/Regular**<br>**Plasma/Fractal**<br>**Noise/Gaussian**<br>**Noise/Impulse**<br>**Noise/Laplacian**<br>**Misc/Checkerboard**<br>**Misc/Stripes**<br>**Gradient/Regular**<br>**Gradient/Linear**<br>**Misc/Loops 1**<br>**Misc/Loops 2**<br>**Misc/Loops 3** |
| Seed / `seed` | Integer | 0 | Seed the random generator |
| Width / `width` | Integer | 0 | Set canvas width, default (0) is project format |
| Height / `height` | Integer | 0 | Set canvas height, default (0) is project format |
| Color from / `fromColor` | String | | Set start color, you must set a end color for this to work. Valid values are: none (transparent), color name (red, blue etc) or hex colors |
| Color to / `toColor` | String | | Set end color, you must set a start color for this to work. Valid values are : none (transparent), color name (red, blue etc) or hex colors |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |
| Frame Range / `frameRange` | Integer | min: 1<br>max: 1 | Time domain. |

### 2.15.15 Tile node

*This documentation is for version 3.2 of Tile (net.fxarena.openfx.Tile).*

#### Description

Tile transform node.

#### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

#### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| Rows / `rows` | Integer | 2 | Rows in grid |
| Columns / `cols` | Integer | 2 | Columns in grid |
| Time Offset / `offset` | Integer | 0 | Set a time offset |
| Keep first frame / `keepFirst` | Boolean | On | Stay on first frame if offset |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect |
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |

### 2.15.16 Wave node

*This documentation is for version 2.9 of Wave (net.fxarena.openfx.Wave).*

### Description

Wave effect using ImageMagick.

### Inputs

| Input | Description | Optional |
|---|---|---|
| Source | | No |
| Mask | | Yes |

### Controls

| Parameter / script name | Type | Default | Function |
|---|---|---|---|
| OpenMP / `openmp` | Boolean | Off | Enable/Disable OpenMP support. This will enable the plugin to use as many threads as allowed by host. |
| Matte / `matte` | Boolean | Off | Merge Alpha before applying effect. |
| Virtual Pixel / `vpixel` | Choice | Transparent | Virtual Pixel Method.<br>**Undefined**<br>**Background**<br>**Black**<br>**CheckerTile**<br>**Dither**<br>**Edge**<br>**Gray**<br>**HorizontalTile**<br>**HorizontalTileEdge**<br>**Mirror**<br>**Random**<br>**Tile**<br>**Transparent**<br>**VerticalTile**<br>**VerticalTileEdge**<br>**White** |
| Amplitude / `amp` | Double | 25 | Adjust wave amplitude |
| Length / `length` | Double | 150 | Adjust wave length |

CHAPTER

# THREE

# DEVELOPERS GUIDE

## 3.1 Python API

All Python modules of the Natron API are referenced here.

### 3.1.1 NatronEngine

#### Detailed Description

Here are listed all classes being part of NatronEngine module. This module is always loaded by Natron natively, meaning access is granted to these classes in your scripts without importing anything.

#### AnimatedParam

**Inherits** *Param*

**Inherited by:** *StringParamBase*, *PathParam*, *OutputFileParam*, *FileParam*, *StringParam*, *BooleanParam*, *ChoiceParam*, *ColorParam*, *DoubleParam*, *Double2DParam*, *Double3DParam*, *IntParam*, *Int2DParam*, *Int3DParam*

#### Synopsis

This is the base class for all parameters which have the property `canAnimate` set to True. See the *detailed description* below

#### Functions

- def `deleteValueAtTime` (time[, dimension=0])
- def `getCurrentTime` ()
- def `getDerivativeAtTime` (time[, dimension=0])
- def `getExpression` (dimension)
- def `getIntegrateFromTimeToTime` (time1, time2[, dimension=0])
- def `getIsAnimated` ([dimension=0])
- def `getKeyIndex` (time[, dimension=0])
- def `getKeyTime` (index, dimension)
- def `getNumKeys` ([dimension=0])
- def `removeAnimation` ([dimension=0])
- def `setExpression` (expr, hasRetVariable[, dimension=0])

- def *setInterpolationAtTime* (time, interpolation[, dimension=0])

### Detailed Description

Animating parameters have values that may change throughout the time. To enable animation the parameter should have at least 1 keyframe. Keyframes can be added in the derived class (since function signature is type specific) with the *setValueAtTime* function. Once 2 keyframes are active on the parameter, the value of the parameter will be interpolated automatically by Natron for a given time. You can control keyframes by adding,removing, changing their values and their *KeyFrameTypeEnum* type.

Note that by default new keyframes are always with a **Smooth** interpolation.

Moreover parameters can have Python expressions set on them to control their value. In that case, the expression takes precedence over any animation that the parameter may have, meaning that the value of the parameter would be computed using the expression provided.

### Member functions description

NatronEngine.AnimatedParam.**deleteValueAtTime**(*time*[, *dimension=0* ])

**Parameters**

- **time** – float
- **dimension** – int

Removes a keyframe at the given *time* and *dimension* for this parameter, if such keyframe exists.

NatronEngine.AnimatedParam.**getCurrentTime**()

**Return type**
int

Convenience function: returns the current time on the timeline

NatronEngine.AnimatedParam.**getDerivativeAtTime**(*time*[, *dimension=0* ])

**Parameters**

- **time** – float
- **dimension** – int

**Return type**
double

Returns the derivative of the parameter at the given *time* and for the given *dimension*. The derivative is computed on the animation curve of the parameter. This function is irrelevant for parameters that have an expression.

NatronEngine.AnimatedParam.**getExpression**(*dimension*)

**Parameters**
**dimension** – int

**Return type**
str

Returns the Python expression set on the parameter at the given dimension. When no expression is set, this function returns an empty string.

NatronEngine.AnimatedParam.**getIntegrateFromTimeToTime**(*time1*, *time2*[, *dimension=0* ])

**Parameters**

- **time1** – float

- **time2** – float
- **dimension** – int

**Return type**
float

Integrates the value of the parameter over the range [*time1 - time2*]. This is done using the animation curve of the parameter of the given *dimension*. Note that if this parameter has an expression, the return value is irrelevant.

NatronEngine.AnimatedParam.**getIsAnimated**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
bool

Returns whether the given *dimension* has an animation or not. This returns true if the underlying animation curve has 1 or more keyframes.

NatronEngine.AnimatedParam.**getKeyIndex**(*time*[, *dimension=0* ])

**Parameters**

- **time** – float
- **dimension** – int

**Return type**
int

Returns the index of the keyframe at the given *time* for the animation curve at the given *dimension*, or -1 if no such keyframe could be found.

NatronEngine.AnimatedParam.**getKeyTime**(*index*, *dimension*)

**Parameters**

- **index** – int
- **dimension** – int

**Return type**
tuple

Returns a tuple [bool,float] where the first member is True if a keyframe exists at the given *index* for the animation curve at the given *dimension*. The second *float* member is the keyframe exact time.

NatronEngine.AnimatedParam.**getNumKeys**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
int

Returns the number of keyframes for the animation curve at the given *dimension*.

NatronEngine.AnimatedParam.**removeAnimation**([*dimension=0* ])

**Parameters**
**dimension** – int

Removes all animation for the animation curve at the given *dimension*. Note that this will not remove any expression set.

NatronEngine.AnimatedParam.**setExpression**(*expr*, *hasRetVariable*[, *dimension=0* ])

**Parameters**

- **expr** – str
- **hasRetVariable** – bool
- **dimension** – int

**Return type**
bool

Set the Python expression *expr* on the parameter at the given *dimension* If *hasRetVariable* is True, then *expr* is assumed to have a variable *ret* declared. Otherwise, Natron will declare the *ret* variable itself.

NatronEngine.AnimatedParam.**setInterpolationAtTime**(*time*, *interpolation*[, *dimension=0* ])

**Parameters**

- **time** – float
- **interpolation** – KeyFrameTypeEnum
- **dimension** – int

**Return type**
bool

Set the interpolation of the animation curve of the given dimension at the given keyframe. If no such keyframe could be found, this method returns False. Upon success, this method returns True.

Example:

```
app1.Blur2.size.setInterpolationAtTime(56,NatronEngine.Natron.KeyframeTypeEnum.
↪eKeyframeTypeConstant,0)
```

## App

**Inherits** *Group*

**Inherited by:** *GuiApp*

## Synopsis

The App object represents one instance of a project. See *detailed* description...

## Functions

- def *addProjectLayer* (layer)
- def *addFormat* (formatSpec)
- def *createNode* (pluginID[, majorVersion=-1[, group=None] [, properties=None]])
- def *createReader* (filename[, group=None] [, properties=None])
- def *createWriter* (filename[, group=None] [, properties=None])
- def *getAppID* ()
- def *getProjectParam* (name)
- def *getViewNames* ()
- def *render* (effect,firstFrame,lastFrame[,frameStep])

- def *render* (tasks)
- def *saveTempProject* (filename)
- def *saveProject* (filename)
- def *saveProjectAs* (filename)
- def *loadProject* (filename)
- def *resetProject* ()
- def *closeProject* ()
- def *newProject* ()
- def *timelineGetLeftBound* ()
- def *timelineGetRightBound* ()
- def *timelineGetTime* ()
- def *writeToScriptEditor* (message)

### Detailed Description

An App object is created automatically every times a new project is opened. For each instance of Natron opened, there's a new instance of App. You never create an App object by yourself, instead you can access them with variables that Natron pre-declared for you: The first instance will be named app1, the second app2,etc... See *this section* for an explanation of auto-declared variables.

When in background mode, (interpreter or render mode) there will always ever be a single App instance, so Natron will make the following assignment before running any other script:

```
app = app1
```

So you don't have to bother on which instance you're in. For *Group* Python plug-ins exported from Natron, they have a function with the following signature:

```
def createInstance(app,group):
```

So you don't have to bother again on which App instance your script is run. You should only ever need to refer to the *app1*, *app2*... variables when using the Script Editor.

Finally, you can always access the App object of any instance by calling the following function when your script is for command line (background mode):

```
natron.getInstance(index)
```

Or the following function when you want to use GUI functionalities:

```
natron.getGuiInstance(index)
```

**Warning:** Note that in both cases, *index* is a 0-based number. So to retrieve *app1* you would need to call the function with *index = 0*.

### Creating nodes

The App object is responsible for creating new nodes. To create a node, you need to specify which plug-in you want to instantiate and optionally specify which major version should your node instantiate if the plug-in has multiple versions. For instance we could create a new Reader node this way:

```
reader = app.createNode("fr.inria.openfx.ReadOIIO")
```

You can also specify the group into which the node should be created, None being the project's top level:

```
group = app.createNode("fr.inria.built-in.Group")
reader = app.createNode("fr.inria.openfx.ReadOIIO", -1, group)
```

For convenience, small wrapper functions have been made to directly create a Reader or Writer given a filename:

```
reader = app.createReader("/Users/me/Pictures/mySequence###.exr")
writer = app.createWriter("/Users/me/Pictures/myVideo.mov")
```

In case 2 plug-ins can decode/encode the same format, e.g. ReadPSD and ReadOIIO can both read .psd files, internally Natron picks the "best" OpenFX plug-in to decode/encode the image sequence/video according to the settings in the Preferences of Natron. If however you need a specific decoder/encoder to decode/encode the file format, you can use the *getSettings()* function with the exact plug-in ID.

In Natron you can call the following function to get a sequence with all plug-in IDs currently available:

```
natron.getPluginIDs()
```

You can also get a sub-set of those plug-ins with the *getPluginIDs(filter)* which returns only plug-in IDs containing the given filter (compared without case sensitivity).

### Accessing the settings of Natron

To modify the parameters in the *Preferences* of Natron, you can call the `getSettings()` function to get an object containing all the *parameters* of the preferences.

### Accessing the project settings

You can get a specific *parameter* of the project settings with the *getProjectParam(name)* function.

### Member functions description

NatronEngine.App.**addProjectLayer**(*layer*)

**Parameters**
**layer** – ImageLayer

Appends a new project-wide layer. It will be available to all layer menus of all nodes. Each layer menu must be refreshed individually with either a right click on the menu or by changing nodes connections to get access to the new layer. Layer names are unique: even if you add duplicates to the layers list, only the first one in the list with that name will be available in the menus.

NatronEngine.App.**addFormat**(*formatSpec*)

**Parameters**
**formatSpec** – str

Attempts to add a new format to the project's formats list. The *formatSpec* parameter must follow this spec: First the name of the format, without any spaces and without any non Python compliant characters; followed by a space and then the size of the format, in the form *width*x*height*; followed by a space and then the pixel aspect ratio of the format. For instance:

```
HD 1920x1080 1
```

Wrongly formatted format will be omitted and a warning will be printed in the *ScriptEditor*.

`NatronEngine.App.`**`createNode`**(*pluginID[, majorVersion=-1[, group=None] [, properties=None]]*)

**Parameters**

- **pluginID** – `str`
- **majorVersion** – `int`
- **group** – `Group`
- **properties** – `Dict`

**Return type**
`Effect`

Creates a new node instantiating the plug-in specified with the given *pluginID* at the given *majorVersion*. If *majorVersion* is -1, the highest version of the plug-in will be instantiated. The optional *group* parameter can be used to specify into which *group* the node should be created, *None* meaning the project's top level.

In Natron you can call the following function to get a sequence with all plug-in IDs currently available:

```
natron.getPluginIDs()
```

The optional parameter *properties* is a dictionary containing properties that may modify the creation of the node, such as hiding the node GUI, disabling auto-connection in the NodeGraph, etc...

The properties are values of type Bool, Int, Float or String and are mapped against a unique *key* identifying them.

Most properties have a default value and don't need to be specified, except the pluginID property.

Below is a list of all the properties available that are recognized by Natron. If you specify an unknown property, Natron will print a warning in the Script Editor.

All properties type have been wrapped to Natron types:

- A boolean property is represented by the **BoolNodeCreationProperty** class
- An int property is represented by the **IntNodeCreationProperty** class
- A float property is represented by the **FloatNodeCreationProperty** class
- A string property is represented by the **StringNodeCreationProperty** class

Here is an example on how to pass properties to the createNode function:

```
app.createNode("net.sf.cimg.CImgBlur", -1, app, dict([ (
↪"CreateNodeArgsPropSettingsOpened", NatronEngine.BoolNodeCreationProperty(True)), (
↪"CreateNodeArgsPropNodeInitialParamValues", NatronEngine.StringNodeCreationProperty(
↪"size")) ,("CreateNodeArgsPropParamValue_size",NatronEngine.
↪FloatNodeCreationProperty([2.3,5.1])) ]))
```

- *Name*: **CreateNodeArgsPropPluginID**

  *Dimension*: 1

  *Type*: string

  *Default*: None

  *Description*: Indicates the ID of the plug-in to create. This property is mandatory. It is set automatically by passing the pluginID to the createNode function

- *Name*: **CreateNodeArgsPropPluginVersion**

  *Dimension*: 2

  *Type*: int

  *Default*: -1,-1

  *Description*: Indicates the version of the plug-in to create. With the value (-1,-1) Natron will load the highest possible version available for that plug-in.

- *Name*: **CreateNodeArgsPropNodeInitialPosition**

  *Dimension*: 2

  *Type*: float

  *Default*: None

  *Description*: Indicates the initial position of the node in the nodegraph. By default Natron will position the node according to the state of the interface (current selection, position of the viewport, etc…)

- *Name*: **CreateNodeArgsPropNodeInitialName**

  *Dimension*: 1

  *Type*: string

  *Default*: None

  *Description*: Indicates the initial *script-name* of the node By default Natron will name the node according to the plug-in label and will add a digit afterwards dependending on the current number of instances of that plug-in.

- *Name*: **CreateNodeArgsPropNodeInitialParamValues**

  *Dimension*: N

  *Type*: string

  *Default*: None

  *Description*: Contains a sequence of parameter script-names for which a default value is specified by a property. Each default value must be specified by a property whose name is in the form *CreateNodeArgsPropParamValue_PARAMETERNAME* where *PARAMETERNAME* must be replaced by the *script-name* of the parameter. The property must have the same type as the data-type of the parameter (e.g. int for IntParam, float for FloatParam, bool for BooleanParam, String for StringParam).

- *Name*: **CreateNodeArgsPropOutOfProject**

  *Dimension*: 1

  *Type*: bool

  *Default*: False

  *Description*: When True the node will not be part of the project. The node can be used for internal used, e.g. in a Python script but will not appear to the user. It will also not be saved in the project.

- *Name*: **CreateNodeArgsPropNoNodeGUI**

  *Dimension*: 1

  *Type*: bool

  *Default*: False

  *Description*: * If True, the node will not have any GUI created. The property CreateNodeArgsPropOutOfProject set to True implies this.

- *Name*: **CreateNodeArgsPropSettingsOpened**

  *Dimension*: 1

*Type*: bool

*Default*: False

*Description*: * If True, the node settings panel will not be opened by default when created. If the property CreateNodeArgsPropNoNodeGUI is set to true or CreateNodeArgsPropOutOfProject is set to true, this property has no effet.

- *Name*: **CreateNodeArgsPropAutoConnect**

  *Dimension*: 1

  *Type*: bool

  *Default*: False

  *Description*: * If True, Natron will try to automatically connect the node to others depending on the user selection. If the property CreateNodeArgsPropNoNodeGUI is set to true or CreateNodeArgsPropOutOfProject is set to true, this property has no effet.

- *Name*: **CreateNodeArgsPropAddUndoRedoCommand**

  *Dimension*: 1

  *Type*: bool

  *Default*: False

  *Description*: Natron will push a undo/redo command to the stack when creating this node. If the property CreateNodeArgsPropNoNodeGUI is set to true or CreateNodeArgsPropOutOfProject is set to true, this property has no effect.

- *Name*: **CreateNodeArgsPropSilent**

  *Dimension*: 1

  *Type*: bool

  *Default*: True

  *Description*: When set to True, Natron will not show any information, error, warning, question or file dialog when creating the node.

`NatronEngine.App.createReader`(*filename[, group=None] [, properties=None]*)

**Parameters**

- **filename** – str
- **group** – Group

**Return type**
Effect

Creates a reader to decode the given *filename*. The optional *group* parameter can be used to specify into which *group* the node should be created, *None* meaning the project's top level.

In case 2 plug-ins can decode the same format, e.g. ReadPSD and ReadOIIO can both read .psd files, internally Natron picks the "best" OpenFX plug-in to decode the image sequence/video according to the settings in the Preferences of Natron. If however you need a specific decoder to decode the file format, you can use the *getSettings()* function with the exact plug-in ID.

`NatronEngine.App.createWriter`(*filename[, group=None] [, properties=None]*)

**Parameters**

- **filename** – str
- **group** – Group

**Return type**
Effect

Creates a reader to decode the given *filename*. The optional *group* parameter can be used to specify into which *group* the node should be created, *None* meaning the project's top level.

In case 2 plug-ins can encode the same format, e.g. WritePFM and WriteOIIO can both write .pfm files, internally Natron picks the "best" OpenFX plug-in to encode the image sequence/video according to the settings in the Preferences of Natron. If however you need a specific decoder to encode the file format, you can use the *getSettings()* function with the exact plug-in ID.

NatronEngine.App.**getAppID**()

**Return type**
int

Returns the **zero-based** ID of the App instance. *app1* would have the AppID 0, *app2* would have the AppID 1, and so on...

NatronEngine.App.**getProjectParam**(*name*)

**Parameters**
**name** – str

**Return type**
Param

Returns a project *Param* given its *name* (script-name). See *this section* for an explanation of *script-name* vs. *label*.

NatronEngine.App.**getViewNames**()

**Return type**
Sequence

Returns a sequence with the name of all the views in the project as setup by the user in the "Views" tab of the Project Settings.

NatronEngine.App.**render**(*effect*, *firstFrame*, *lastFrame*[, *frameStep* ])

**Parameters**

- **effect** – Effect
- **firstFrame** – int
- **lastFrame** – int
- **frameStep** – int

Starts rendering the given *effect* on the frame-range defined by [*firstFrame*,*lastFrame*]. The *frameStep* parameter indicates how many frames the timeline should step after rendering each frame. The value must be greater or equal to 1. The *frameStep* parameter is optional and if not given will default to the value of the **Frame Increment** parameter in the Write node.

For instance:

```
render(effect,1,10,2)
```

Would render the frames 1,3,5,7,9

This is a blocking function only in background mode. A blocking render means that this function returns only when the render finishes (from failure or success).

This function should only be used to render with a Write node or DiskCache node.

NatronEngine.App.**render**(*tasks*)

**Parameters**
**tasks** – sequence

This function takes a sequence of tuples of the form *(effect,firstFrame,lastFrame[,frameStep])* The *frameStep* is optional in the tuple and if not set will default to the value of the **Frame Increment** parameter in the Write node.

This is an overloaded function. Same as *render(effect,firstFrame,lastFrame,frameStep)* but all *tasks* will be rendered concurrently.

This function is called when rendering a script in background mode with multiple writers.

This is a blocking call only in background mode.

NatronEngine.App.**timelineGetLeftBound**()

**Return type**
int

Returns the *left bound* of the timeline, that is, the first member of the project's frame-range parameter

NatronEngine.App.**timelineGetRightBound**()

**Return type**
int

Returns the *right bound* of the timeline, that is, the second member of the project's frame-range parameter

NatronEngine.App.**timelineGetTime**()

**Return type**
int

Get the timeline's current time. In Natron there's only a single internal timeline and all Viewers are synchronised on that timeline. If the user seeks a specific frames, then all Viewers will render that frame.

NatronEngine.App.**writeToScriptEditor**(*message*)

**Parameters**
**message** – str

Writes the given *message* to the Script Editor panel of Natron. This can be useful to inform the user of various information, warnings or errors.

NatronEngine.App.**saveProject**(*filename*)

**Parameters**
**filename** – str

**Return type**
bool

Saves the current project under the current project name. If the project has never been saved so far, this function e saves the project to the file indicated by the *filename* parameter. In GUI mode, if *filename* is empty, it asks the user where to save the project in GUI mode.

This function returns *True* if it saved successfully, *False* otherwise.

NatronEngine.App.**saveProjectAs**(*filename*)

**Parameters**
**filename** – str

**Return type**
bool

Save the project under the given *filename*. In GUI mode, if *filename* is empty, it prompts the user where to save the project.

This function returns *True* if it saved successfully, *False* otherwise.

NatronEngine.App.**saveTempProject**(*filename*)

**Parameters**
**filename** – str

**Return type**
bool

Saves a copy of the project to the given *filename* without updating project properties such as the project path, last save time etc... This function returns *True* if it saved successfully, *False* otherwise.

NatronEngine.App.**loadProject**(*filename*)

**Parameters**
**filename** – str

**Return type**
App

Loads the project indicated by *filename*. In GUI mode, this will open a new window only if the current window has modifications. In background mode this will close the current project of this App and open the project indicated by *filename* in it. This function returns the App object upon success, *None* otherwise.

NatronEngine.App.**resetProject**()

**Return type**
bool

Attempts to close the current project, without wiping the window. In GUI mode, the user is first prompted to saved his/her changes and can abort the reset, in which case this function will return *False*. In background mode this function always succeeds, hence always returns *True*. this always succeed.

NatronEngine.App.**closeProject**()

**Return type**
bool

Same as *resetProject()* except that the window will close in GUI mode. Also, if this is the last App alive, Natron will close.

NatronEngine.App.**newProject**()

**Return type**
App

Creates a new App. In GUI mode, this will open a new window. Upon success, the App object is returned, otherwise *None* is returned.

## AppSettings

## Synopsis

This class gathers all settings of Natron. You can access them exactly like you would for the *Effect* class.

### Functions

- def *getParam* (scriptName)
- def *getParams* ()
- def *restoreDefaultSettings* ()
- def *saveSettings* ()

### Member functions description

NatronEngine.AppSettings.**getParam**(*scriptName*)

**Parameters**
**scriptName** – str

**Return type**
Param

Returns a *Param* by its *scriptName*. See *this* section for a detailed explanation of what is the *script-name*.

NatronEngine.AppSettings.**getParams**()

**Return type**
sequence

Returns a sequence with all *Param* composing the settings.

NatronEngine.AppSettings.**restoreDefaultSettings**()

Restores all settings to their default value shipped with Natron.

NatronEngine.AppSettings.**saveSettings**()

Saves all the settings on disk so that they will be restored with their current value on the following runs of Natron.

## BezierCurve

**Inherits** *ItemBase*

### Synopsis

A BezierCurve is the class used for beziers, ellipses and rectangles. See *detailed* description....

### Functions

- def *addControlPoint* (x, y)
- def *addControlPointOnSegment* (index, t)
- def *getActivatedParam* ()
- def *getColor* (time)
- def *getColorParam* ()
- def *getCompositingOperator* ()
- def *getCompositingOperatorParam* ()
- def *getControlPointPosition* (index,time)

- def *getFeatherDistance* (time)
- def *getFeatherDistanceParam* ()
- def *getFeatherFallOff* (time)
- def *getFeatherFallOffParam* ()
- def *getFeatherPointPosition* (index,time)
- def *getIsActivated* (time)
- def *getKeyframes* ()
- def *getNumControlPoints* ()
- def *getOpacity* (time)
- def *getOpacityParam* ()
- def *getOverlayColor* ()
- def *isCurveFinished* ()
- def *moveFeatherByIndex* (index, time, dx, dy)
- def *moveLeftBezierPoint* (index, time, dx, dy)
- def *movePointByIndex* (index, time, dx, dy)
- def *moveRightBezierPoint* (index, time, dx, dy)
- def *removeControlPointByIndex* (index)
- def *setActivated* (time, activated)
- def *setColor* (time, r, g, b)
- def *setCompositingOperator* (op)
- def *setCurveFinished* (finished)
- def *setFeatherDistance* (dist, time)
- def *setFeatherFallOff* (falloff, time)
- def *setFeatherPointAtIndex* (index, time, x, y, lx, ly, rx, ry)
- def *setOpacity* (opacity, time)
- def *setOverlayColor* (r, g, b)
- def *setPointAtIndex* (index, time, x, y, lx, ly, rx, ry)

### Detailed Description

Almost all functionalities available to the user have been made available to the Python API, although in practise making a shape just by calling functions might be tedious due to the potential huge number of control points and keyframes. You can use the Natron Group node's export functionality to generate automatically a script from a Roto node within that group.

A Bezier initially is in an *opened* state, meaning it doesn't produce a shape yet. At this stage you can then add control points using the *addControlPoint(x,y)* function. Once you're one adding control points, call the function *setCurveFinished(finished)* to close the shape by connecting the last control point with the first.

Once finished, you can refine the Bezier curve by adding control points with the *addControlPointOnSegment(index,t)* function. You can then move and remove control points of the Bezier.

To get the position of the control points of the Bezier as well as the position of the feather points, use the functions *getControlPointPosition* and *getFeatherPointPosition*. The *index* passed to the function must be between 0 and *getNumControlPoints* -1.

The *time* passed to the function corresponds to a time on the timeline's in frames. If it lands on a keyframe of the Bezier shape, then the position at that keyframe is returned, otherwise the position is sampled between the surrounding keyframes.

To get a list of all keyframes time for a Bezier call the function *getKeyframes()*.

A Bezier curve has several parameters that the API allows you to modify:

- opacity
- color
- feather distance
- feather fall-off
- enable state
- overlay color
- compositing operator

Each of them is a regular `Param` that you can access to modify or query its properties. All parameters can be retrieved with their *script-name* with the function *getParam(scriptName)*.

### Member functions description

`NatronEngine.BezierCurve.`**`CairoOperatorEnum`**

This enumeration represents the different blending modes of a shape. See the user interface for the different modes, or type help(NatronEngine.BezierCurve.CairoOperatorEnum) to see the different values.

`NatronEngine.BezierCurve.`**`addControlPoint`**`(`*x*, *y*`)`

**Parameters**

- **x** – `float`
- **y** – `float`

Adds a new control point to an *opened* shape (see *isCurveFinished()*) at coordinates (x,y). By default the feather point attached to this point will be equivalent to the control point. If the auto-keying is enabled in the user interface, then this function will set a keyframe at the timeline's current time for this shape.

`NatronEngine.BezierCurve.`**`addControlPointOnSegment`**`(`*index*, *t*`)`

**Parameters**

- **index** – `PySide.QtCore.int`
- **t** – `PySide.QtCore.double`

Adds a new control point to a *closed* shape (see *isCurveFinished()*). The *index* is the index of the Bezier segment linking the control points at *index* and *index* + *1*. *t* is a value between [0,1] indicating the distance from the control point *index* the new control point should be. The closer to 1 *t* is, the closer the new control point will be to the control point at *index +1*. By default the feather point attached to this point will be equivalent to the control point.

If the auto-keying is enabled in the user interface, then this function will set a keyframe at the timeline's current time for this shape.

`NatronEngine.BezierCurve.`**`getActivatedParam`**`()`

**Return type**
`BooleanParam`

Returns the *Param* controlling the enabled state of the Bezier.

NatronEngine.BezierCurve.**getColor**(*time*)

**Parameters**
**time** – int

**Return type**
*ColorTuple*

Returns the value of the color parameter at the given time as an [R,G,B,A] tuple. Note that alpha will always be 1.

NatronEngine.BezierCurve.**getColorParam**()

**Return type**
ColorParam

Returns the *Param* controlling the color of the Bezier.

NatronEngine.BezierCurve.**getCompositingOperator**()

**Return type**
*NatronEngine.BezierCurve.CairoOperatorEnum*

Returns the blending mode for this shape. Type help(NatronEngine.BezierCurve.CairoOperatorEnum) to see the different values possible.

NatronEngine.BezierCurve.**getCompositingOperatorParam**()

**Return type**
NatronEngine.ChoiceParam

Returns the *Param* controlling the blending mode of the Bezier.

NatronEngine.BezierCurve.**getControlPointPosition**(*index*, *time*)

**Parameters**

- **index** – int
- **time** – float

**Return type**
PyTuple

Returns a tuple with the position of the control point at the given *index* as well as the position of its left and right tangents.

The tuple is encoded as such:

```
(x,y, leftTangentX, leftTangentY, rightTangentX, rightTangentY)
```

The position of the left and right tangents is absolute and not relative to (x,y).

The *index* passed to the function must be between 0 and *getNumControlPoints* -1. The *time* passed to the function corresponds to a time on the timeline's in frames. If it lands on a keyframe of the Bezier shape, then the position at that keyframe is returned, otherwise the position is sampled between the surrounding keyframes.

To get a list of all keyframes time for a Bezier call the function *getKeyframes()*.

NatronEngine.BezierCurve.**getFeatherDistance**(*time*)

**Parameters**
**time** – int

**Return type**
float

Returns the feather distance of this shape at the given *time*.

NatronEngine.BezierCurve.**getFeatherDistanceParam**()

**Return type**
NatronEngine.DoubleParam

Returns the *Param* controlling the feather distance of the Bezier.

NatronEngine.BezierCurve.**getFeatherFallOff**(*time*)

**Parameters**
**time** – int

**Return type**
float

Returns the feather fall-off of this shape at the given *time*.

NatronEngine.BezierCurve.**getFeatherFallOffParam**()

**Return type**
DoubleParam

Returns the *Param* controlling the color of the Bezier.

NatronEngine.BezierCurve.**getFeatherPointPosition**(*index*, *time*)

**Parameters**

- **index** – int
- **time** – float

**Return type**
PyTuple

Returns a tuple with the position of the feather point at the given *index* as well as the position of its left and right tangents.

The tuple is encoded as such:

```
(x,y, leftTangentX, leftTangentY, rightTangentX, rightTangentY)
```

The position of the left and right tangents is absolute and not relative to (x,y).

The *index* passed to the function must be between 0 and *getNumControlPoints* -1. The *time* passed to the function corresponds to a time on the timeline's in frames. If it lands on a keyframe of the Bezier shape, then the position at that keyframe is returned, otherwise the position is sampled between the surrounding keyframes.

To get a list of all keyframes time for a Bezier call the function *getKeyframes()*.

NatronEngine.BezierCurve.**getIsActivated**(*time*)

**Parameters**
**time** – int

**Return type**
bool

Returns whether the curve is enabled or not at the given *time*. When not activated the curve will not be rendered at all in the image.

NatronEngine.BezierCurve.**getKeyframes**()

**Return type**
PyList

Returns a list of all keyframes set on the Bezier animation.

NatronEngine.BezierCurve.**getNumControlPoints**()

**Return type**
int

Returns the number of control points for this shape.

NatronEngine.BezierCurve.**getOpacity**(*time*)

**Parameters**
**time** – int

**Return type**
float

Returns the opacity of the curve at the given *time*.

NatronEngine.BezierCurve.**getOpacityParam**()

**Return type**
DoubleParam

Returns the *Param* controlling the opacity of the Bezier.

NatronEngine.BezierCurve.**getOverlayColor**()

**Return type**
*ColorTuple*

Returns the overlay color of this shape as a [R,G,B,A] tuple. Alpha will always be 1.

NatronEngine.BezierCurve.**isCurveFinished**()

**Return type**
bool

Returns whether the curve is finished or not. A finished curve will have a Bezier segment between the last control point and the first control point and the Bezier will be rendered in the image.

NatronEngine.BezierCurve.**moveFeatherByIndex**(*index*, *time*, *dx*, *dy*)

**Parameters**

- **index** – int
- **time** – int
- **dx** – float
- **dy** – float

Moves the feather point at the given *index* (zero-based) by the given delta (dx,dy). The *time* parameter is given so that if auto-keying is enabled a new keyframe will be set.

NatronEngine.BezierCurve.**moveLeftBezierPoint**(*index*, *time*, *dx*, *dy*)

**Parameters**

- **index** – int
- **time** – int
- **dx** – float
- **dy** – float

Moves the left Bezier point of the control point at the given *index* by the given delta. The *time* parameter is given so that if auto-keying is enabled a new keyframe will be set.

NatronEngine.BezierCurve.**movePointByIndex**(*index*, *time*, *dx*, *dy*)

**Parameters**

- **index** – int
- **time** – int
- **dx** – float
- **dy** – float

Moves the point at the given *index* (zero-based) by the given delta (dx,dy). The *time* parameter is given so that if auto-keying is enabled a new keyframe will be set.

NatronEngine.BezierCurve.**moveRightBezierPoint**(*index*, *time*, *dx*, *dy*)

**Parameters**

- **index** – int
- **time** – int
- **dx** – float
- **dy** – float

Moves the right Bezier point at the given *index* (zero-based) by the given delta (dx,dy). The *time* parameter is given so that if auto-keying is enabled a new keyframe will be set.

NatronEngine.BezierCurve.**removeControlPointByIndex**(*index*)

**Parameters**
**index** – int

Removes the control point at the given *index* (zero-based).

NatronEngine.BezierCurve.**setActivated**(*time*, *activated*)

**Parameters**

- **time** – int
- **activated** – bool

Set a new keyframe for the *activated* parameter at the given *time*

NatronEngine.BezierCurve.**setColor**(*time*, *r*, *g*, *b*)

**Parameters**

- **time** – int
- **r** – float
- **g** – float
- **b** – float

Set a new keyframe for the *color* parameter at the given *time*

NatronEngine.BezierCurve.**setCompositingOperator**(*op*)

**Parameters**
**op** – *NatronEngine.BezierCurve.CairoOperatorEnum*

Set the compositing operator for this shape.

NatronEngine.BezierCurve.**setCurveFinished**(*finished*)

**Parameters**
**finished** – bool

Set whether the curve should be finished or not. See *isCurveFinished()*

NatronEngine.BezierCurve.**setFeatherDistance**(*dist*, *time*)

**Parameters**

- **dist** – float
- **time** – int

Set a new keyframe for the *feather distance* parameter at the given *time*

NatronEngine.BezierCurve.**setFeatherFallOff**(*falloff*, *time*)

**Parameters**

- **falloff** – float
- **time** – int

Set a new keyframe for the *feather fall-off* parameter at the given *time*

NatronEngine.BezierCurve.**setFeatherPointAtIndex**(*index*, *time*, *x*, *y*, *lx*, *ly*, *rx*, *ry*)

**Parameters**

- **index** – int
- **time** – int
- **x** – float
- **y** – float
- **lx** – float
- **ly** – float
- **rx** – float
- **ry** – float

Set the feather point at the given *index* at the position (x,y) with the left Bezier point at (lx,ly) and right Bezier point at (rx,ry).

The *time* parameter is given so that if auto-keying is enabled a new keyframe will be set.

NatronEngine.BezierCurve.**setOpacity**(*opacity*, *time*)

**Parameters**

- **opacity** – float
- **time** – int

Set a new keyframe for the *opacity* parameter at the given *time*

NatronEngine.BezierCurve.**setOverlayColor**(*r*, *g*, *b*)

**Parameters**

- **r** – float
- **g** – float
- **b** – float

Set the overlay color of this shape

NatronEngine.BezierCurve.**setPointAtIndex**(*index*, *time*, *x*, *y*, *lx*, *ly*, *rx*, *ry*)

**Parameters**

- **index** – int

- **time** – int
- **x** – float
- **y** – float
- **lx** – float
- **ly** – float
- **rx** – float
- **ry** – float

Set the point at the given *index* at the position (x,y) with the left Bezier point at (lx,ly) and right Bezier point at (rx,ry).

The *time* parameter is given so that if auto-keying is enabled a new keyframe will be set.

### BooleanParam

**Inherits** *AnimatedParam*

### Synopsis

A parameter that contains a boolean value. See *detailed* description below

### Functions

- def *get* ()
- def *get* (frame)
- def *getDefaultValue* ()
- def *getValue* ()
- def *getValueAtTime* (time)
- def *restoreDefaultValue* ()
- def *set* (x)
- def *set* (x, frame)
- def *setDefaultValue* (value)
- def *setValue* (value)
- def *setValueAtTime* (value, time)

### Detailed Description

A BooleanParam looks like a checkbox in the user interface.

### Member functions description

NatronEngine.BooleanParam.**get**()

**Return type**
bool

Returns the value of the parameter at the current timeline's time.

NatronEngine.BooleanParam.**get**(*frame*)

**Parameters**
**frame** – float

**Return type**
bool

Returns the value of the parameter at the given *frame*. This value may be interpolated given the *interpolation* of the underlying animation curve.

NatronEngine.BooleanParam.**getDefaultValue**()

**Return type**
bool

Returns the default value for this parameter.

NatronEngine.BooleanParam.**getValue**()

**Return type**
bool

Same as *get()*

NatronEngine.BooleanParam.**getValueAtTime**(*time*)

**Parameters**
**time** – float

**Return type**
bool

Same as *get(frame)*

NatronEngine.BooleanParam.**restoreDefaultValue**()

Removes all animation and expression set on this parameter and set the value to be the default value.

NatronEngine.BooleanParam.**set**(*x*)

**Parameters**
**x** – bool

Set the value of this parameter to be *x*. If this parameter is animated (see *getIsAnimated(dimension)* then this function will automatically add a keyframe at the timeline's current time.

NatronEngine.BooleanParam.**set**(*x*, *frame*)

**Parameters**

- **x** – bool
- **frame** – float

Set a new keyframe on the parameter with the value *x* at the given *frame*.

NatronEngine.BooleanParam.**setDefaultValue**(*value*)

**Parameters**
**value** – bool

Set the default *value* for this parameter.

NatronEngine.BooleanParam.**setValue**(*value*)

**Parameters**
**value** – bool

Same as *set(value)*

NatronEngine.BooleanParam.**setValueAtTime**(*value*, *time*)

**Parameters**

- **value** – bool
- **time** – float

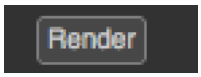
Same as *set(value,time)*

### ButtonParam

**Inherits** *Param*

### Synopsis

A button parameter that appears in the settings panel of the node.




To insert code to be executed upon a user click of the button, register a function to the onParamChanged callback on the node.

### Functions

- def *trigger* ()

### Member functions description

NatronEngine.ButtonParam.**trigger**()

Triggers the button action as though the user had pressed it.

### ChoiceParam

**Inherits** : *AnimatedParam*

### Synopsis

A choice parameter holds an integer value which corresponds to a choice. See *detailed description* below.

### Functions

- def *addOption* (option, help)
- def *get* ()
- def *get* (frame)
- def *getDefaultValue* ()
- def *getOption* (index)
- def *getNumOptions* ()
- def *getOptions* ()
- def *getValue* ()
- def *getValueAtTime* (time)
- def *restoreDefaultValue* ()
- def *set* (x)
- def *set* (x, frame)
- def *set* (label)
- def *setDefaultValue* (value)
- def *setDefaultValue* (label)
- def *setOptions* (options)
- def *setValue* (value)
- def *setValueAtTime* (value, time)

### Detailed Description

A choice is represented as a drop-down (combobox) in the user interface:

You can add options to the menu using the *addOption(option, help)* function. You can also set them all at once using the *setOptions(options)* function.

The value held internally is a 0-based index corresponding to an entry of the menu. the choice parameter behaves much like an *IntParam*.

### Member functions description

NatronEngine.ChoiceParam.**addOption**(*option*, *help*)

**Parameters**

- **option** – str
- **help** – str

Adds a new *option* to the menu. If *help* is not empty, it will be displayed when the user hovers the entry with the mouse.

NatronEngine.ChoiceParam.**get**(*frame*)

**Parameters**
**frame** – float

**Return type**
int

Get the value of the parameter at the given *frame*.

NatronEngine.ChoiceParam.**get**()

**Return type**
int

Get the value of the parameter at the current timeline's time.

NatronEngine.ChoiceParam.**getDefaultValue**()

**Return type**
int

Get the default value for this parameter.

NatronEngine.ChoiceParam.**getOption**(*index*)

**Parameters**
**index** – int

**Return type**
str

Get the menu entry at the given *index*.

NatronEngine.ChoiceParam.**getNumOptions**()

**Return type**
int

Returns the number of menu entries.

NatronEngine.ChoiceParam.**getOptions**()

**Return type**
sequence

Returns a sequence of string with all menu entries from top to bottom.

NatronEngine.ChoiceParam.**getValue**()

**Return type**
int

Same as *get()*

NatronEngine.ChoiceParam.**getValueAtTime**(*time*)

**Parameters**
**time** – float

**Return type**
float

Same as *get(frame)*

NatronEngine.ChoiceParam.**restoreDefaultValue**()

Removes all animation and expression set on this parameter and set the value to be the default value.

NatronEngine.ChoiceParam.**set**(*x*)

**Parameters**
**x** – int

Set the value of this parameter to be *x*. If this parameter is animated (see *getIsAnimated(dimension)* then this function will automatically add a keyframe at the timeline's current time.

NatronEngine.ChoiceParam.**set**(*x*, *frame*)

**Parameters**

- **x** – int
- **frame** – float

Set a new keyframe on the parameter with the value *x* at the given *frame*.

NatronEngine.ChoiceParam.**set**(*label*)

**Parameters**
**label** – str

Set the value of this parameter given a *label*. The *label* must match an existing option. Strings will be compared without case sensitivity. If not found, nothing happens.

NatronEngine.ChoiceParam.**setDefaultValue**(*value*)

**Parameters**
**value** – int

Set the default *value* for this parameter.

NatronEngine.ChoiceParam.**setDefaultValue**(*label*)

**Parameters**
**label** – str

Set the default value from the *label* for this parameter. The *label* must match an existing option. Strings will be compared without case sensitivity. If not found, nothing happens.

NatronEngine.ChoiceParam.**setOptions**(*options*)

**Parameters**
**options** – class::*sequence*

Clears all existing entries in the menu and add all entries contained in *options* to the menu.

NatronEngine.ChoiceParam.**setValue**(*value*)

**Parameters**
**value** – int

Same as *set*

NatronEngine.ChoiceParam.**setValueAtTime**(*value*, *time*)

**Parameters**

- **value** – int
- **time** – int

Same as set(time)<NatronEngine.ChoiceParam.set()

### ColorParam

**Inherits** *AnimatedParam*

### Synopsis

A color parameter is a RGB[A] value that can be animated throughout the time. See *detailed* description...

### Functions

- def *get* ()
- def *get* (frame)
- def *getDefaultValue* ([dimension=0])
- def *getDisplayMaximum* (dimension)
- def *getDisplayMinimum* (dimension)
- def *getMaximum* ([dimension=0])
- def *getMinimum* ([dimension=0])
- def *getValue* ([dimension=0])
- def *getValueAtTime* (time[, dimension=0])
- def *restoreDefaultValue* ([dimension=0])
- def *set* (r, g, b, a)
- def *set* (r, g, b, a, frame)
- def *setDefaultValue* (value[, dimension=0])
- def *setDisplayMaximum* (maximum[, dimension=0])
- def *setDisplayMinimum* (minimum[, dimension=0])
- def *setMaximum* (maximum[, dimension=0])
- def *setMinimum* (minimum[, dimension=0])
- def *setValue* (value[, dimension=0])
- def *setValueAtTime* (value, time[, dimension=0])

### Detailed Description

A color parameter can either be of dimension 3 (RGB) or dimension 4 (RGBA). The user interface for this parameter looks like this:

This parameter type is very similar to a *Double3DParam* except that it can have 4 dimensions and has some more controls.

### Member functions description

`NatronEngine.ColorParam.`**`get`**`(`*frame*`)`

**Parameters**
**frame** – `float`

**Return type**
*ColorTuple*

Returns a *ColorTuple* of the color held by the parameter at the given *frame*.

`NatronEngine.ColorParam.`**`get`**`()`

**Return type**
*ColorTuple*

Returns a *ColorTuple* of the color held by the parameter at the current timeline's time.

`NatronEngine.ColorParam.`**`getDefaultValue`**`(`[*dimension=0* ]`)`

**Parameters**
**dimension** – `int`

**Return type**
`float`

Returns the default value for this parameter at the given *dimension*.

`NatronEngine.ColorParam.`**`getDisplayMaximum`**`(`*dimension*`)`

**Parameters**
**dimension** – `int`

**Return type**
`float`

Returns the display maximum for this parameter at the given *dimension*. The display maximum is the maximum value visible on the slider, internally the value can exceed this range.

`NatronEngine.ColorParam.`**`getDisplayMinimum`**`(`*dimension*`)`

**Parameters**
**dimension** – `int`

**Return type**
`float`

Returns the display minimum for this parameter at the given *dimension*. The display minimum is the minimum value visible on the slider, internally the value can exceed this range.

NatronEngine.ColorParam.**getMaximum**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
float

Returns the maximum for this parameter at the given *dimension*. The maximum value cannot be exceeded and any higher value will be clamped to this value.

NatronEngine.ColorParam.**getMinimum**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
float

Returns the minimum for this parameter at the given *dimension*. The minimum value cannot be exceeded and any lower value will be clamped to this value.

NatronEngine.ColorParam.**getValue**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
float

Returns the value of this parameter at the given *dimension* at the current timeline's time.

NatronEngine.ColorParam.**getValueAtTime**(*time*[, *dimension=0* ])

**Parameters**

- **time** – float
- **dimension** – int

**Return type**
float

Returns the value of this parameter at the given *dimension* at the given *time*.

NatronEngine.ColorParam.**restoreDefaultValue**([*dimension=0* ])

**Parameters**
**dimension** – int

Removes all animation and expression set on this parameter and set the value to be the default value.

NatronEngine.ColorParam.**set**(*r*, *g*, *b*, *a*, *frame*)

**Parameters**

- **r** – float
- **g** – float
- **b** – float
- **a** – float
- **frame** – float

Set a keyframe on each of the 4 animations curves at [r,g,b,a] for the given *frame*. If this parameter is 3-dimensional, the *a* value is ignored.

NatronEngine.ColorParam.**set**(*r*, *g*, *b*, *a*)

**Parameters**

- **r** – float
- **g** – float
- **b** – float
- **a** – float

Set the value of this parameter to be [*r*,*g*,*b*,*a*]. If this parameter is animated (see *getIsAnimated(dimension)* then this function will automatically add a keyframe at the timeline's current time.

NatronEngine.ColorParam.**setDefaultValue**(*value*[, *dimension=0* ])

**Parameters**

- **value** – float
- **dimension** – int

Set the default value of this parameter at the given *dimension* to be *value*.

NatronEngine.ColorParam.**setDisplayMaximum**(*maximum*[, *dimension=0* ])

**Parameters**

- **maximum** – float
- **dimension** – int

Set the display maximum of the parameter to be *maximum* for the given *dimension*. See getDisplayMaximum

NatronEngine.ColorParam.**setDisplayMinimum**(*minimum*[, *dimension=0* ])

**Parameters**

- **minimum** – float
- **dimension** – int

Set the display minimum of the parameter to be *minmum* for the given *dimension*. See getDisplayMinimum

NatronEngine.ColorParam.**setMaximum**(*maximum*[, *dimension=0* ])

**Parameters**

- **maximum** – float
- **dimension** – int

Set the maximum of the parameter to be *maximum* for the given *dimension*. See getMaximum

NatronEngine.ColorParam.**setMinimum**(*minimum*[, *dimension=0* ])

**Parameters**

- **minimum** – float
- **dimension** – int

Set the minimum of the parameter to be *minimum* for the given *dimension*. See getMinimum

NatronEngine.ColorParam.**setValue**(*value*[, *dimension=0* ])

**Parameters**

- **value** – float
- **dimension** – int

Set the value of this parameter at the given *dimension* to be *value*. If this parameter is animated (see *getIsAnimated(dimension)* then this function will automatically add a keyframe at the timeline's current time.

NatronEngine.ColorParam.**setValueAtTime**(*value*, *time*[, *dimension=0* ])

**Parameters**

- **value** – float
- **time** – int
- **dimension** – int

Set a keyframe on each of the animation curve at the given *dimension*. The keyframe will be at the given *time* with the given *value*.

## ColorTuple

## Synopsis

Utility class used to return [R,G,B,[A]] values.

## Functions

- def *__getitem__* (arg__1)

**class** NatronEngine.**ColorTuple**

NatronEngine.ColorTuple.**g**

NatronEngine.ColorTuple.**r**

NatronEngine.ColorTuple.**a**

NatronEngine.ColorTuple.**b**

NatronEngine.ColorTuple.**__getitem__**(*index*)

**Parameters**
**arg__1** – int

**Return type**
float

Returns the item at the given index. This is the bracket operator *[]*

## Double2DParam

**Inherits** *DoubleParam*

**Inherited by:** *Double3DParam*

### Synopsis

See *DoubleParam* for more information on this class.

### Functions

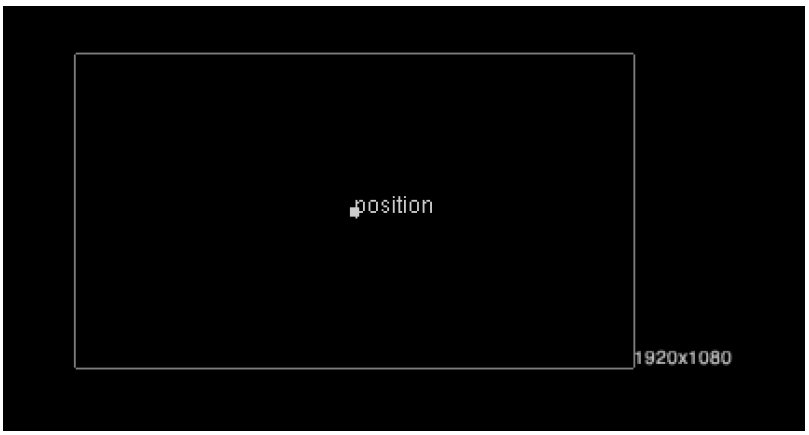
- def `setUsePointInteract<NatronEngine.Double2DParam.setUsePointInteract()` (enabled)
- def `setCanAutoFoldDimensions<NatronEngine.Double2DParam.setCanAutoFoldDimensions()` (enabled)
- def *get* ()
- def *get* (frame)
- def *set* (x, y)
- def *set* (x, y, frame)

### Member functions description

`NatronEngine.Double2DParam.`**`setUsePointInteract`**`(`*enabled*`)`

**Parameters**
**enabled** – `bool`

When called, the parameter will have its own overlay interact on the viewer as a point that the user can select and drag.




`NatronEngine.Double2DParam.`**`setCanAutoFoldDimensions`**`(`*enabled*`)`

**Parameters**
**enabled** – `bool`

Sets whether all dimensions should be presented as a single value/slider whenever they are equal.

`NatronEngine.Double2DParam.`**`get`**`()`

**Return type**
*Double2DTuple*

Returns a *Double2DTuple* with the [x,y] values for this parameter at the current timeline's time.

`NatronEngine.Double2DParam.`**`get`**`(`*frame*`)`

**Parameters**
**frame** – `float`

**Return type**
*Double2DTuple*

Returns a *Double2DTuple* with the [x,y] values for this parameter at the given *frame*.

NatronEngine.Double2DParam.**set**(*x*, *y*, *frame*)

**Parameters**

- **x** – float
- **y** – float
- **frame** – float

Same as *set(x,frame)* but for 2-dimensional doubles.

NatronEngine.Double2DParam.**set**(*x*, *y*)

**Parameters**

- **x** – float
- **y** – float

Same as *set(x)* but for 2-dimensional doubles.

## Double2DTuple

## Synopsis

Utility class to return pair of floating point values.

## Functions

- def *__getitem__* (arg__1)

## Detailed Description

**class** NatronEngine.**Double2DTuple**

NatronEngine.Double2DTuple.**x**

NatronEngine.Double2DTuple.**y**

NatronEngine.Double2DTuple.**__getitem__**(*index*)

**Parameters**
**index** – int

**Return type**
float

Returns the item at the given index. This is the bracket operator *[]*

### Double3DParam

**Inherits** *Double2DParam*

### Synopsis

See *DoubleParam* for more information on this class.

### Functions

- def *get* ()
- def *get* (frame)
- def *set* (x, y, z)
- def *set* (x, y, z, frame)

### Member functions description

NatronEngine.Double3DParam.**get**()

**Return type**
*Double3DTuple*

Returns a *Double3DTuple* with the [x,y,z] values for this parameter at the current timeline's time.

NatronEngine.Double3DParam.**get**(*frame*)

**Parameters**
**frame** – float

**Return type**
*Double3DTuple*

Returns a *Double3DTuple* with the [x,y,z] values for this parameter at the given *frame*.

NatronEngine.Double3DParam.**set**(*x*, *y*, *z*, *frame*)

**Parameters**

- **x** – float
- **y** – float
- **z** – float
- **frame** – PySide.QtCore.int

Same as *set(x,frame)* but for 3-dimensional doubles.

NatronEngine.Double3DParam.**set**(*x*, *y*, *z*)

**Parameters**

- **x** – float
- **y** – float
- **z** – float

Same as *set(x)* but for 3-dimensional doubles.

### Double3DTuple

### Synopsis

Utility class to return pair of floating point values.

### Functions

- def *__getitem__* (index)

### Detailed Description

**class** NatronEngine.**Double3DTuple**

NatronEngine.Double3DTuple.**x**

NatronEngine.Double3DTuple.**y**

NatronEngine.Double3DTuple.**z**

NatronEngine.Double3DTuple.**__getitem__**(*index*)

**Parameters**
**index** – int

**Return type**
float

Returns the item at the given index. This is the bracket operator *[]*

### DoubleParam

**Inherits** *AnimatedParam*

**Inherited by:** *Double2DParam*, *Double3DParam*

### Synopsis

A double param can contain one or multiple floating point values. See *detailed* description...

### Functions

- def *get* ()
- def *get* (frame)
- def *getDefaultValue* ([dimension=0])
- def *getDisplayMaximum* (dimension)
- def *getDisplayMinimum* (dimension)
- def *getMaximum* ([dimension=0])
- def *getMinimum* ([dimension=0])
- def *getValue* ([dimension=0])
- def *getValueAtTime* (time[, dimension=0])

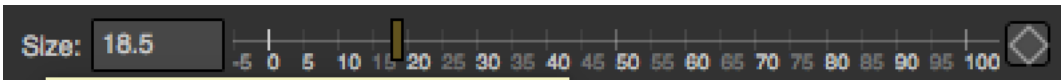
- def *restoreDefaultValue* ([dimension=0])
- def *set* (x)
- def *set* (x, frame)
- def *setDefaultValue* (value[, dimension=0])
- def *setDisplayMaximum* (maximum[, dimension=0])
- def *setDisplayMinimum* (minimum[, dimension=0])
- def *setMaximum* (maximum[, dimension=0])
- def *setMinimum* (minimum[, dimension=0])
- def *setValue* (value[, dimension=0])
- def *setValueAtTime* (value, time[, dimension=0])

## Detailed Description

A double param can have 1 to 3 dimensions. (See *Double2DParam* and *Double3DParam*). Usually this is used to represent a single floating point value that may animate over time.

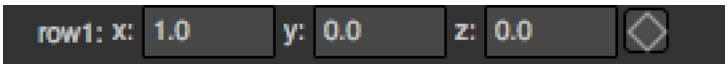
The user interface for them varies depending on the number of dimensions.

A 1-dimensional *DoubleParam*




A 2-dimensional *Double2DParam*

A 3-dimensional *Double3DParam*




## Member functions description

`NatronEngine.DoubleParam.get(`*frame*`)`

**Parameters**
**frame** – float

**Return type**
float

Returns the value of this parameter at the given *frame*. If the animation curve has an animation (see *getIsAnimated(dimension)* then the value will be interpolated using the *interpolation* chosen by the user for the curve.

`NatronEngine.DoubleParam.get()`

**Return type**
float

Returns the value of this parameter at the given current timeline's time.

NatronEngine.DoubleParam.**getDefaultValue**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
float

Returns the default value for this parameter. *dimension* is meaningless for the DoubleParam class because it is 1-dimensional, but is useful for inherited classes *Double2DParam* and *Double3DParam*

NatronEngine.DoubleParam.**getDisplayMaximum**(*dimension*)

**Parameters**
**dimension** – int

**Return type**
double

Returns the display maximum for this parameter at the given *dimension*. The display maximum is the maximum value visible on the slider, internally the value can exceed this range.

NatronEngine.DoubleParam.**getDisplayMinimum**(*dimension*)

**Parameters**
**dimension** – int

**Return type**
float

Returns the display minimum for this parameter at the given *dimension*. The display minimum is the minimum value visible on the slider, internally the value can exceed this range.

NatronEngine.DoubleParam.**getMaximum**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
float

Returns the maximum for this parameter at the given *dimension*. The maximum value cannot be exceeded and any higher value will be clamped to this value.

NatronEngine.DoubleParam.**getMinimum**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
float

Returns the minimum for this parameter at the given *dimension*. The minimum value cannot be exceeded and any lower value will be clamped to this value.

NatronEngine.DoubleParam.**getValue**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
float

Returns the value of this parameter at the given *dimension* at the current timeline's time.

NatronEngine.DoubleParam.**getValueAtTime**(*time*[, *dimension=0* ])

**Parameters**

- **time** – float
- **dimension** – int

**Return type**
float

Returns the value of this parameter at the given *dimension* at the given *time*.

If the animation curve has an animation (see *getIsAnimated(dimension)* then the value will be interpolated using the *interpolation* chosen by the user for the curve.

NatronEngine.DoubleParam.**restoreDefaultValue**([*dimension=0* ])

**Parameters**
**dimension** – int

Returns the value of this parameter at the given *dimension* at the given *time*.

NatronEngine.DoubleParam.**set**(*x*, *frame*)

**Parameters**

- **x** – float
- **frame** – float

Set a new keyframe on the parameter with the value *x* at the given *frame*.

NatronEngine.DoubleParam.**set**(*x*)

**Parameters**
**x** – float

Set the value of this parameter to be *x*. If this parameter is animated (see *getIsAnimated(dimension)* then this function will automatically add a keyframe at the timeline's current time.

NatronEngine.DoubleParam.**setDefaultValue**(*value*[, *dimension=0* ])

**Parameters**

- **value** – float
- **dimension** – int

Set the default *value* for this parameter at the given *dimension*.

NatronEngine.DoubleParam.**setDisplayMaximum**(*maximum*[, *dimension=0* ])

**Parameters**

- **maximum** – float
- **dimension** – int

Set the display maximum of the parameter to be *maximum* for the given *dimension*. See getDisplayMaximum

NatronEngine.DoubleParam.**setDisplayMinimum**(*minimum*[, *dimension=0* ])

**Parameters**

- **minimum** – float
- **dimension** – int

Set the display minimum of the parameter to be *minmum* for the given *dimension*. See getDisplayMinimum

NatronEngine.DoubleParam.**setMaximum**(*maximum*[, *dimension=0* ])

**Parameters**

- **maximum** – float

- **dimension** – int

Set the maximum of the parameter to be *maximum* for the given *dimension*. See getMaximum

NatronEngine.DoubleParam.**setMinimum**(*minimum*[, *dimension=0* ])

**Parameters**

- **minimum** – float
- **dimension** – int<PySide.QtCore.int<

Set the minimum of the parameter to be *minimum* for the given *dimension*. See getMinimum

NatronEngine.DoubleParam.**setValue**(*value*[, *dimension=0* ])

**Parameters**

- **value** – float
- **dimension** – int

Same as *set(value,dimension)*

NatronEngine.DoubleParam.**setValueAtTime**(*value*, *time*[, *dimension=0* ])

**Parameters**

- **value** – float
- **time** – float
- **dimension** – int

Same as *set(value,time,dimension)*

## Effect

**Inherits**: *Group* , *UserParamHolder*

## Synopsis

This object represents a single node in Natron, that is: an instance of a plug-in. See *Detailed Description*

## Functions

- def *addUserPlane* (planeName,channels)
- def *endChanges* ()
- def *beginChanges* ()
- def *canConnectInput* (inputNumber, node)
- def *connectInput* (inputNumber, input)
- def *destroy* ([autoReconnect=true])
- def *disconnectInput* (inputNumber)
- def *getAvailableLayers* ()
- def *getBitDepth* ()
- def *getColor* ()
- def *getCurrentTime* ()

- def *getOutputFormat* ()
- def *getFrameRate* ()
- def *getInput* (inputNumber)
- def *getInput* (inputName)
- def *getLabel* ()
- def *getInputLabel* (inputNumber)
- def *getMaxInputCount* ()
- def *getParam* (name)
- def *getParams* ()
- def *getPluginID* ()
- def *getPosition* ()
- def *getPremult* ()
- def *getPixelAspectRatio* ()
- def *getRegionOfDefinition* (time,view)
- def *getRotoContext* ()
- def *getTrackerContext* ()
- def *getScriptName* ()
- def *getSize* ()
- def *getUserPageParam* ()
- def *isUserSelected* ()
- def *isReaderNode* ()
- def *isWriterNode* ()
- def *isOutputNode* ()
- def *setColor* (r, g, b)
- def *setLabel* (name)
- def *setPosition* (x, y)
- def *setScriptName* (scriptName)
- def *setSize* (w, h)
- def *setSubGraphEditable* (editable)
- def *setPagesOrder* (pages)

### Detailed Description

The Effect object can be used to operate with a single node in Natron. To create a new Effect, use the *app.createNode(pluginID)* function.

Natron automatically declares a variable to Python when a new Effect is created. This variable will have a script-name determined by Natron as explained in the *Python Auto-declared variables* section.

Once an Effect is instantiated, it declares all its *Param* and inputs. See how to *manage* user parameters below

To get a specific *Param* by script-name, call the *getParam(name)* function

Input effects are mapped against a zero-based index. To retrieve an input Effect given an index, you can use the *getInput(inputNumber)* function.

To manage inputs, you can connect them and disconnect them with respect to their input index with the *connectInput(inputNumber,input)* and then *disconnectInput(inputNumber)* functions.

If you need to destroy permanently the Effect, just call *destroy()*.

For convenience some GUI functionalities have been made accessible via the Effect class to control the GUI of the node (on the node graph):

- Get/Set the node position with the *setPosition(x,y)* and *getPosition()* functions
- Get/Set the node size with the *setSize(width,height)* and *getSize()* functions
- Get/Set the node color with the *setColor(r,g,b)* and *getColor()* functions

### Creating user parameters

See *this section*

### Member functions description

NatronEngine.Effect.**addUserPlane**(*planeName*, *channels*)

**Parameters**

- **planeName** – str
- **channels** – sequence

**Return type**
bool

Adds a new plane to the Channels selector of the node in its settings panel. When selected, the end-user can choose to output the result of the node to this new custom plane. The *planeName* will identify the plane uniquely and must not contain spaces or non python compliant characters. The *channels* are a sequence of channel names, e.g.:

addUserPlane("MyLayer",["R", "G", "B", "A"])

**Note:** A plane cannot contain more than 4 channels and must at least have 1 channel.

This function returns *True* if the layer was added successfully, *False* otherwise.

NatronEngine.Effect.**beginChanges**()

Starts a begin/End bracket, blocking all evaluation (=renders and callback onParamChanged) that would be issued due to a call to *setValue* on any parameter of the Effect.

Similarly all input changes will not be evaluated until endChanges() is called.

Typically to change several values at once we bracket the changes like this:

```
node.beginChanges()
param1.setValue(...)
param2.setValue(...)
param3.setValue(...)
param4.setValue(...)
node.endChanges()  # This triggers a new render
```

A more complex call:

node.beginChanges() node.connectInput(0,otherNode) node.connectInput(1,thirdNode) param1.setValue(...) node.endChanges() # This triggers a new render

NatronEngine.Effect.**endChanges**()

Ends a begin/end bracket. If the begin/end bracket recursion reaches 0 and there were calls made to *setValue* this function will effectively compresss all evaluations into a single one. See *beginChanges()*

NatronEngine.Effect.**canConnectInput**(*inputNumber*, *node*)

**Parameters**

- **inputNumber** – int
- **node** – Effect

**Return type**
bool

Returns whether the given *node* can be connected at the given *inputNumber* of this Effect. This function could return False for one of the following reasons:

- The Effect already has an input at the given *inputNumber*
- The *node* is None
- The given *inputNumber* is out of range
- The *node* cannot have any node connected to it (such as a BackDrop or an Output)
- This Effect or the given *node* is a child of another node (for trackers only)
- Connecting *node* would create a cycle in the graph implying that it would create infinite recursions

NatronEngine.Effect.**connectInput**(*inputNumber*, *input*)

**Parameters**

- **inputNumber** – int
- **input** – Effect

**Return type**
bool

Connects *input* to the given *inputNumber* of this Effect. This function calls internally *canConnectInput()* to determine if a connection is possible.

NatronEngine.Effect.**destroy**([*autoReconnect=true* ])

**Parameters**
**autoReconnect** – bool

Removes this Effect from the current project definitively. If *autoReconnect* is True then any nodes connected to this node will try to connect their input to the input of this node instead.

NatronEngine.Effect.**disconnectInput**(*inputNumber*)

**Parameters**
**inputNumber** – int

Removes any input Effect connected to the given *inputNumber* of this node.

NatronEngine.Effect.**getAvailableLayers**()

**Return type**
dict

Returns the layer available on this node. This is a dict with a ImageLayer as key and Effect as value. The Effect is the closest node in the upstream tree (including this node) that produced that layer.

For example, in a simple graph Read –> Blur, if the Read node has a layer available named "RenderLayer.combined" but Blur is set to process only the color layer (RGBA), then calling this function on the Blur will return a dict containing for key "RenderLayer.combined" the Read node, whereas the dict will have for the key "RGBA" the Blur node.

NatronEngine.Effect.**getBitDepth**()

**Return type**
*ImageBitDepthEnum*

Returns the bit-depth of the image in output of this node.

NatronEngine.Effect.**getColor**()

**Return type**
tuple

Returns the color of this node as it appears on the node graph as [R,G,B] 3-dimensional tuple.

NatronEngine.Effect.**getCurrentTime**()

**Return type**
int

Returns the current time of timeline if this node is currently rendering, otherwise it returns the current time at which the node is currently rendering for the caller thread.

NatronEngine.Effect.**getOutputFormat**()

**Return type**
RectI

Returns the output format of this node in pixel units.

NatronEngine.Effect.**getFrameRate**()

**Return type**
float

Returns the frame-rate of the sequence in output of this node.

NatronEngine.Effect.**getInput**(*inputNumber*)

**Parameters**
**inputNumber** – int

**Return type**
Effect

Returns the node connected at the given *inputNumber*.

NatronEngine.Effect.**getInput**(*inputName*)

**param inputName**
str

**rtype**
Effect

Same as *getInput(inputNumber)* except that the parameter in input is the name of the input as displayed on the node-graph. This function is made available for convenience.

NatronEngine.Effect.**getLabel**()

**Return type**
str

Returns the *label* of the node. See *this section* for a discussion of the *label* vs the *script-name*.

NatronEngine.Effect.**getInputLabel**(*inputNumber*)

**Parameters**
**inputNumber** – int

**Return type**
str

Returns the label of the input at the given *inputNumber*. It corresponds to the label displayed on the arrow of the input in the node graph.

NatronEngine.Effect.**getMaxInputCount**()

**Return type**
int

Returns the number of inputs for the node. Graphically this corresponds to the number of arrows in input.

NatronEngine.Effect.**getParam**(*name*)

**Parameters**
**name** – str

**Return type**
Param

Returns a *parameter* by its script-name or None if no such parameter exists.

NatronEngine.Effect.**getParams**()

**Return type**
sequence

Returns all the Param of this Effect as a sequence.

NatronEngine.Effect.**getPluginID**()

**Return type**
str

Returns the ID of the plug-in that this node instantiate.

NatronEngine.Effect.**getPosition**()

**Return type**
tuple

Returns the current position of the node on the node-graph. This is a 2 dimensional [X,Y] tuple. Note that in background mode, if used, this function will always return [0,0] and should NOT be used.

NatronEngine.Effect.**getPremult**()

**Return type**
*ImagePremultiplicationEnum*

Returns the alpha premultiplication state of the image in output of this node.

NatronEngine.Effect.**getPixelAspectRatio**()

**Return type**
float

Returns the pixel aspect ratio of the image in output of this node.

NatronEngine.Effect.**getRegionOfDefinition**(*time*, *view*)

**Parameters**

- **time** – float
- **view** – int

**Return type**
RectD

Returns the bounding box of the image produced by this effect in canonical coordinates. This is exactly the value displayed in the "Info" tab of the settings panel of the node for the "Output". This can be useful for example to set the position of a point parameter to the center of the region of definition.

NatronEngine.Effect.**getRotoContext**()

**Return type**
Roto

Returns the roto context for this node. Currently only the Roto node has a roto context. The roto context is in charge of maintaining all information relative to *Beziers* and *Layers*. Most of the nodes don't have a roto context though and this function will return None.

NatronEngine.Effect.**getTrackerContext**()

**Return type**
Tracker

Returns the tracker context for this node. Currently only the Tracker node has a tracker context. The tracker context is in charge of maintaining all information relative to *Tracks*. Most of the nodes don't have a tracker context though and this function will return None.

NatronEngine.Effect.**getScriptName**()

**Return type**
str

Returns the script-name of this Effect. See *this* section for more information about the script-name.

NatronEngine.Effect.**getSize**()

**Return type**
tuple

Returns the size of this node on the node-graph as a 2 dimensional [Width,Height] tuple. Note that calling this function will in background mode will always return [0,0] and should not be used.

NatronEngine.Effect.**getUserPageParam**()

**Return type**
PageParam

Convenience function to return the user page parameter if this Effect has one.

NatronEngine.Effect.**isUserSelected**()

**Return type**
bool

Returns true if this node is selected in its containing nodegraph.

NatronEngine.Effect.**isReaderNode**()

**Return type**
bool

Returns True if this node is a reader node

NatronEngine.Effect.**isWriterNode**()

**Return type**
bool

Returns True if this node is a writer node

NatronEngine.Effect.**isOutputNode**()

**Return type**
bool

Returns True if this node is an output node (which also means that it has no output)

NatronEngine.Effect.**setColor**(*r*, *g*, *b*)

**Parameters**

- **r** – float
- **g** – float
- **b** – float

Set the color of the node as it appears on the node graph. Note that calling this function will in background mode will do nothing and should not be used.

NatronEngine.Effect.**setLabel**(*name*)

**Parameters**
**name** – str

Set the label of the node as it appears in the user interface. See *this* section for an explanation of the difference between the *label* and the *script-name*.

NatronEngine.Effect.**setPosition**(*x*, *y*)

**Parameters**

- **x** – float
- **y** – float

Set the position of the node as it appears on the node graph. Note that calling this function will in background mode will do nothing and should not be used.

NatronEngine.Effect.**setScriptName**(*scriptName*)

**Parameters**
**scriptName** – str

**Return type**
bool

Set the script-name of the node as used internally by Natron. See *this* section for an explanation of the difference between the *label* and the *script-name*.

**Warning:** Using this function will remove any previous variable declared using the old script-name and will create a new variable with the new script name if valid.

If your script was using for instance a node named:

```
app1.Blur1
```

and you renamed it BlurOne, it should now be available to Python this way:

```
app1.BlurOne
```

but using app1.Blur1 would report the following error:

```
Traceback (most recent call last):
File "<stdin>", line 1, in <module>
NameError: name 'Blur1' is not defined
```

NatronEngine.Effect.**setSize**(*w*, *h*)

**Parameters**

- **w** – float
- **h** – float

Set the size of the node as it appears on the node graph. Note that calling this function will in background mode will do nothing and should not be used.

NatronEngine.Effect.**setSubGraphEditable**(*editable*)

**Parameters**
**editable** – bool

Can be called to disable editing of the group via Natron's graphical user interface. This is handy to prevent users from accidentally breaking the sub-graph. This can always be reverted by editing the python script associated. The user will still be able to see the internal node graph but will not be able to unlock it.

NatronEngine.Effect.**setPagesOrder**(*pages*)

**Parameters**
**pages** – sequence

Given the string list *pages* try to find the corresponding pages by their-script name and order them in the given order.

## ExprUtils

**Inherits** *Double2DParam*

## Synopsis

Various functions useful for expressions. Most noise functions have been taken from the Walt Disney Animation Studio SeExpr library.

## Functions

- def *boxstep* (x,a)
- def *linearstep* (x,a,b)
- def *smoothstep* (x,a,b)
- def *gaussstep* (x,a,b)
- def *remap* (x,source,range,falloff,interp)
- def *mix* (x,y,alpha)
- def *hash* (args)
- def *noise* (x)
- def *noise* (p)
- def *noise* (p)
- def *noise* (p)
- def *snoise* (p)
- def *vnoise* (p)
- def *cnoise* (p)
- def *snoise4* (p)
- def *vnoise4* (p)

- def *cnoise4* (p)
- def *turbulence* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *vturbulence* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *cturbulence* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *fbm* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *vfbm* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *fbm4* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *vfbm4* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *cfbm* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *cfbm4* (p[,ocaves=6, lacunarity=2, gain=0.5])
- def *cellnoise* (p)
- def *ccellnoise* (p)
- def *pnoise* (p, period)

### Member functions description

NatronEngine.ExprUtils.**boxstep**(*x*, *a*)

**Parameters**

- **x** – float
- **a** – float

**Return type**

float

if x < a then 0 otherwise 1

NatronEngine.ExprUtils.**linearstep**(*x*, *a*, *b*)

**Parameters**

- **x** – float
- **a** – float
- **b** – float

**Return type**

float

Transitions linearly when a < x < b

NatronEngine.ExprUtils.**boxstep**(*x*, *a*, *b*)

**Parameters**

- **x** – float
- **a** – float
- **b** – float

**Return type**

float

Transitions smoothly (cubic) when a < x < b

NatronEngine.ExprUtils.**gaussstep**(*x*, *a*, *b*)

**Parameters**

- **x** – float
- **a** – float
- **b** – float

**Return type**
float

Transitions smoothly (exponentially) when a < x < b

NatronEngine.ExprUtils.**remap**(*x*, *source*, *range*, *falloff*, *interp*)

**Parameters**

- **x** – float
- **source** – float
- **range** – float
- **falloff** – float
- **interp** – float

**Return type**
float

General remapping function. When **x** is within +/- **range** of **source**, the result is 1. The result falls to 0 beyond that range over **falloff** distance. The falloff shape is controlled by **interp**: linear = 0 smooth = 1 gaussian = 2

NatronEngine.ExprUtils.**mix**(*x*, *y*, *alpha*)

**Parameters**

- **x** – float
- **y** – float
- **alpha** – float

**Return type**
float

Linear interpolation of a and b according to alpha

NatronEngine.ExprUtils.**hash**(*args*)

**Parameters**
**args** – Sequence

**Return type**
float

Like random, but with no internal seeds. Any number of seeds may be given and the result will be a random function based on all the seeds.

NatronEngine.ExprUtils.**noise**(*x*)

**Parameters**
**x** – float

**Return type**
float

Original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**noise**(*p*)

**Parameters**
**p** – *Double2DTuple*

**Return type**
float

Original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**noise**(*p*)

**Parameters**
**p** – *Double3DTuple*

**Return type**
float

Original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**noise**(*p*)

**Parameters**
**p** – *ColorTuple*

**Return type**
float

Original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**snoise**(*p*)

**Parameters**
**p** – *Double3DTuple*

**Return type**
float

Signed noise w/ range -1 to 1 formed with original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**vnoise**(*p*)

**Parameters**
**p** – *Double3DTuple*

**Return type**
*Double3DTuple*

Vector noise formed with original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**cnoise**(*p*)

**Parameters**
**p** – *Double3DTuple*

**Return type**
*Double3DTuple*

Color noise formed with original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**snoise4**(*p*)

**Parameters**
**p** – *ColorTuple*

**Return type**
float

4D signed noise w/ range -1 to 1 formed with original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**vnoise4**(*p*)

**Parameters**
**p** – *ColorTuple*

**Return type**
*Double3DTuple*

4D vector noise formed with original perlin noise at location (C2 interpolant)

NatronEngine.ExprUtils.**cnoise4**(*p*)

**Parameters**
**p** – *ColorTuple*

**Return type**
*Double3DTuple*

4D color noise formed with original perlin noise at location (C2 interpolant)"

NatronEngine.ExprUtils.**turbulence**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – int
- **lacunarity** – float
- **gain** – float

**Return type**

float

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**. The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

NatronEngine.ExprUtils.**vturbulence**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – int
- **lacunarity** – float
- **gain** – float

**Return type**

*Double3DTuple*

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**. The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

NatronEngine.ExprUtils.**cturbulence**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – int

- **lacunarity** – float
- **gain** – float

**Return type**

*Double3DTuple*

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**. The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

NatronEngine.ExprUtils.**fbm**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – int
- **lacunarity** – float
- **gain** – float

**Return type**

float

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**. The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

NatronEngine.ExprUtils.**vfbm**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – int
- **lacunarity** – float
- **gain** – float

**Return type**

*Double3DTuple*

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**. The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

NatronEngine.ExprUtils.**fbm4**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – int
- **lacunarity** – float
- **gain** – float

**Return type**

`float`

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**. The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

`NatronEngine.ExprUtils.`**`vfbm4`**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – `int`
- **lacunarity** – `float`
- **gain** – `float`

**Return type**

*Double3DTuple*

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**. The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

`NatronEngine.ExprUtils.`**`cfbm`**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – `int`
- **lacunarity** – `float`
- **gain** – `float`

**Return type**

*Double3DTuple*

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**. The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

`NatronEngine.ExprUtils.`**`cfbm4`**(*p*[, *ocaves=6*, *lacunarity=2*, *gain=0.5* ])

**Parameters**

- **p** – *Double3DTuple*
- **octaves** – `int`
- **lacunarity** – `float`
- **gain** – `float`

**Return type**

*Double3DTuple*

FBM (Fractal Brownian Motion) is a multi-frequency noise function. The base frequency is the same as the noise function. The total number of frequencies is controlled by **octaves**.

The **lacunarity** is the spacing between the frequencies - A value of 2 means each octave is twice the previous frequency. The **gain** controls how much each frequency is scaled relative to the previous frequency.

NatronEngine.ExprUtils.**cellnoise**(*p*)

**Parameters**
**p** – *Double3DTuple*

**Return type**
`float`

cellnoise generates a field of constant colored cubes based on the integer location This is the same as the prman cellnoise function

NatronEngine.ExprUtils.**ccellnoise**(*p*)

**Parameters**
**p** – *Double3DTuple*

**Return type**
*Double3DTuple*

cellnoise generates a field of constant colored cubes based on the integer location This is the same as the prman cellnoise function

NatronEngine.ExprUtils.**pnoise**(*p*, *period*)

**Parameters**

- **p** – *Double3DTuple*
- **period** – *Double3DTuple*

**Return type**
`float`

Periodic noise

## FileParam

**Inherits** *StringParamBase*

## Synopsis

This parameter is used to specify an input file (i.e: a file that already exist).

## Functions

- def *openFile* ()
- def *reloadFile* ()
- def *setSequenceEnabled* (enabled)

### Member functions description

NatronEngine.FileParam.**openFile**()

When called in GUI mode, this will open a file dialog for the user. Does nothing in background mode.

NatronEngine.FileParam.**reloadFile**()

Force a refresh of the data read from the file. Any cached data associated to the file will be discarded.

NatronEngine.FileParam.**setSequenceEnabled**(*enabled*)

**Parameters**
**enabled** – bool

Determines whether the file dialog opened by *openFile()* should have support for file sequences or not.

## Group

**Inherited by:** *Effect*, *App*, *GuiApp*

### Synopsis

Base class for *Effect* and *App*. See *detailed* description below.

### Functions

- def *getChildren* ()
- def *getNode* (fullyQualifiedName)

### Detailed Description

This is an abstract class, it is derived by 2 different classes:

- *App* which represents an instance of Natron, or more specifically the current project.
- *Effect* which represents a node in the node graph.

The *getNode(fullyQualifiedName)* can be used to retrieve a node in the project, although all nodes already have an *auto-declared* variable by Natron.

### Member functions description

NatronEngine.Group.**getChildren**()

**Return type**
sequence

Returns a sequence with all nodes in the group. Note that this function is not recursive and you'd have to call **getChildren()** on all sub-groups to retrieve their children, etc...

NatronEngine.Group.**getNode**(*fullyQualifiedName*)

**Parameters**
**fullySpecifiedName** – str

**Return type**
Effect

Retrieves a node in the group with its *fully qualified name*. The fully qualified name of a node is the *script-name* of the node prefixed by all the group hierarchy into which it is, e.g.:

Blur1 # the node is a top level node

Group1.Group2.Blur1 # the node is inside Group2 which is inside Group1

Basically you should never call this function because Natron already pre-declares a variable for each node upon its creation. If you were to create a new node named "Blur1" , you could the access it in the Script Editor the following way:

```
app1.Blur1
```

### GroupParam

**Inherits** *Param*

### Synopsis

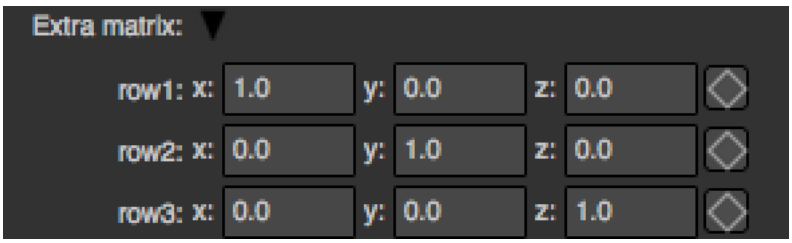
A group param is a container for other parameters. See *detailed* description.

### Functions

- def `addParam` (param)
- def `getIsOpened` ()
- def `setAsTab` ()
- def `setOpened` (opened)

### Detailed Description

A group param does not hold any relevant value. Rather this is a purely graphical element that is used to gather multiple parameters under a group. On the graphical interface a GroupParam looks like this:




When a *Param* is under a group, the `getParent()` will return the group as parent.

### Member functions description

NatronEngine.GroupParam.**addParam**(*param*)

**Parameters**
**param** – Param

Adds *param* into the group.

**Warning:** Note that this function cannot be called on groups that are not user parameters (i.e: created either by script or by the "Manage user parameters" user interface)

**Warning:** Once called, you should call `refreshUserParamsGUI()` to update the user interface.

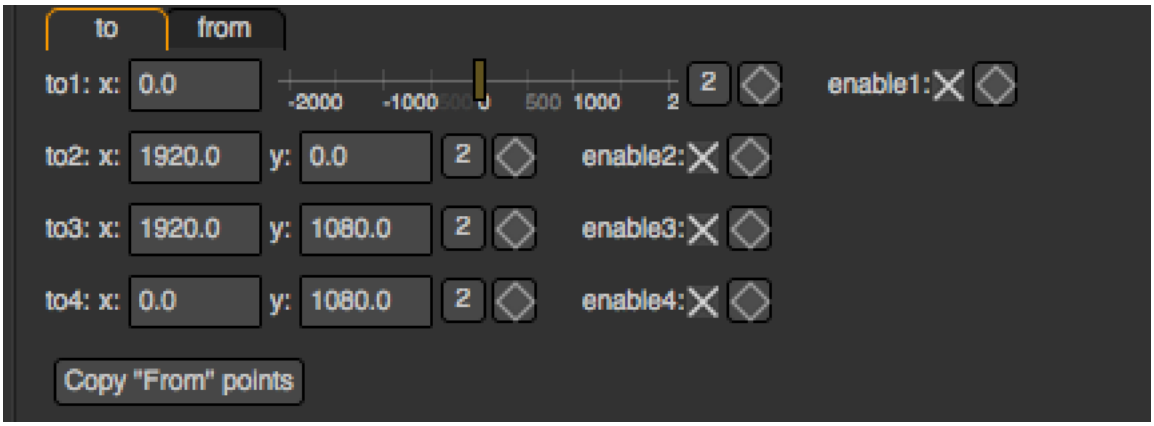
NatronEngine.GroupParam.**getIsOpened**()

**Return type**
bool

Returns whether the group is currently expanded (True) or folded (False).

NatronEngine.GroupParam.**setAsTab**()

Set this group as a tab. When set as a tab, it will be inserted into a special TabWidget of the Effect. For instance, on the following screenshot, *to* and *from* are 2 groups on which *setAsTab()* has been called.




NatronEngine.GroupParam.**setOpened**(*opened*)

**Parameters**
**opened** – bool

Set this group to be expanded (*opened* = True) or folded (*opened* = False)

### ImageLayer

### Synopsis

A small object representing a layer of an image. For example, the base image layer is the color layer, or sometimes called "RGBA". Some other default layers include ForwardMotion, BackwardMotion, DisparityLeft,DisparityRight, etc... .

See *detailed* description...

### Functions

- def *ImageLayer* (layerName,componentsPrettyName,componentsName)
- def *isColorPlane* ()
- def *getNumComponents* ()
- def *getLayerName* ()
- def *getComponentsNames* ()
- def *getComponentsPrettyName* ()
- def *getNoneComponents* ()
- def *getRGBAComponents* ()
- def *getRGBComponents* ()
- def *getAlphaComponents* ()
- def *getBackwardMotionComponents* ()
- def *getForwardMotionComponents* ()
- def *getDisparityLeftComponents* ()
- def *getDisparityRightComponents* ()

### Detailed Description

A Layer is constituted of a layer *name* and a set of channel names (also called components). You can get a sequence with all the channels in the layer with the function *getComponentsNames()*. For some default layers, the components may be represented by a prettier name for the end-user, such as *DisparityLeft* instead of XY. When the ImageLayer does not have a pretty name, its pretty name will just be a concatenation of all channel names in order.

There is one special layer in Natron: the color layer. It be represented as 3 different types: RGBA, RGB or Alpha. If the ImageLayer is a color layer, the method *isColorPlane()* will return True

### Member functions description

NatronEngine.ImageLayer.**ImageLayer**(*layerName*, *componentsPrettyName*, *componentsName*)

**Parameters**
**layerName** – str

Make a new image layer with the given layer name, optional components pretty name and the set of channels (also called components) in the layer.

NatronEngine.ImageLayer.**isColorPlane**()

**Return type**
bool

Returns True if this layer is a color layer, i.e: it is RGBA, RGB or alpha. The color layer is what is output by default by all nodes in Natron.

NatronEngine.ImageLayer.**getNumComponents**()

**Return type**
int

Returns the number of channels in this layer. Can be between 0 and 4 included.

NatronEngine.ImageLayer.**getLayerName**()

**Return type**
str

Returns the layer name

NatronEngine.ImageLayer.**getComponentsNames**()

**Return type**
Sequence

Returns a sequence with all channels in this layer in order

NatronEngine.ImageLayer.**getComponentsPrettyName**()

**Return type**
str

Returns the channels pretty name. E.g: DisparityLeft instead of XY

NatronEngine.ImageLayer.**getNoneComponents**()

**Return type**
ImageLayer

Returns the default "none" layer

NatronEngine.ImageLayer.**getRGBAComponents**()

**Return type**
ImageLayer

Returns the default "RGBA" layer

NatronEngine.ImageLayer.**getRGBComponents**()

**Return type**
ImageLayer

Returns the default "RGB" layer

NatronEngine.ImageLayer.**getAlphaComponents**()

**Return type**
ImageLayer

Returns the default "Alpha" layer

NatronEngine.ImageLayer.**getBackwardMotionComponents**()

**Return type**
ImageLayer

Returns the default "Backward" layer

NatronEngine.ImageLayer.**getForwardMotionComponents**()

**Return type**
ImageLayer

Returns the default “Forward” layer

NatronEngine.ImageLayer.**getDisparityLeftComponents**()

**Return type**
ImageLayer

Returns the default “DisparityLeft” layer

NatronEngine.ImageLayer.**getDisparityRightComponents**()

**Return type**
ImageLayer

Returns the default “DisparityRight” layer

### Int2DParam

**Inherits** *IntParam*

**Inherited by:** *Int3DParam*

### Synopsis

See *IntParam* for more details.

### Functions

- def *get* ()
- def *get* (frame)
- def *set* (x, y)
- def *set* (x, y, frame)

### Detailed Description

NatronEngine.Int2DParam.**get**()

**Return type**

**class**
*Int2DTuple*

Returns a *Int2DTuple* containing the [x,y] value of this parameter at the timeline’s current time.

NatronEngine.Int2DParam.**get**(*frame*)

**Param**
float

**Return type**

**class**
*Int2DTuple*

Returns a *Int2DTuple* containing the [x,y] value of this parameter at the given *frame*.

NatronEngine.Int2DParam.**set**(*x*, *y*)

**Parameters**

- **x** – int
- **y** – int

Same as *set(x)* but for 2-dimensional integers.

NatronEngine.Int2DParam.**set**(*x*, *y*, *frame*)

**Parameters**

- **x** – int
- **y** – int
- **frame** – float

Same as *set(x,frame)* but for 2-dimensional integers.

### Int2DTuple

### Synopsis

Utility class to return pair of integers values.

### Functions

- def *__getitem__* (index)

### Detailed Description

**class** NatronEngine.**Int2DTuple**

NatronEngine.Int2DTuple.**x**

NatronEngine.Int2DTuple.**y**

NatronEngine.Int2DTuple.**__getitem__**(*index*)

**Parameters**
**index** – int

**Return type**
PyObject

Returns the item at the given index. This is the bracket operator *[]*

### Int3DParam

**Inherits** *Int2DParam*

### Synopsis

See *IntParam* for more details.

### Functions

- def `set` ()
- def `set` (frame)
- def `set` (x, y, z)
- def `set` (x, y, z, frame)

### Detailed Description

`NatronEngine.Int3DParam.`**`get`**`()`

**Return type**
`<Int3DTuple>`

Returns a *Int3DTuple* containing the [x,y,z] value of this parameter at the timeline's current time.

`NatronEngine.Int3DParam.`**`get`**`(`*`frame`*`)`

**Parameters**
**frame** – `float`

**Return type**
`<Int3DTuple>`

Returns a *Int3DTuple* containing the [x,y,z] value of this parameter at the given *frame*

`NatronEngine.Int3DParam.`**`set`**`(`*`x`*`, `*`y`*`, `*`z`*`)`

**Parameters**

- **x** – `int`
- **y** – `int`
- **z** – `int`

Same as `set(x)` but for 3-dimensional integers.

`NatronEngine.Int3DParam.`**`set`**`(`*`x`*`, `*`y`*`, `*`z`*`, `*`frame`*`)`

**Parameters**

- **x** – `int`
- **y** – `int`
- **z** – `int`
- **frame** – `float`

Same as `set(x,frame)` but for 3-dimensional integers.

### Int3DTuple

### Synopsis

Utility class to return pair of integers values.

### Functions

- def *__getitem__* (index)

### Detailed Description

**class** NatronEngine.**Int3DTuple**

NatronEngine.Int3DTuple.**x**

NatronEngine.Int3DTuple.**y**

NatronEngine.Int3DTuple.**z**

NatronEngine.Int3DTuple.**__getitem__**(*index*)

**param index**
PySide.QtCore.int

**rtype**
PyObject

Returns the item at the given index. This is the bracket operator *[]*

### IntParam

*Inherits AnimatedParam*

**Inherited by:** *Int2DParam*, *Int3DParam*

### Synopsis

An IntParam can contain one or multiple int values. See *detailed* description...

### Functions

- def *get* ()
- def *get* (frame)
- def *getDefaultValue* ([dimension=0])
- def *getDisplayMaximum* (dimension)
- def *getDisplayMinimum* (dimension)
- def *getMaximum* ([dimension=0])
- def *getMinimum* ([dimension=0])
- def *getValue* ([dimension=0])
- def *getValueAtTime* (time[, dimension=0])

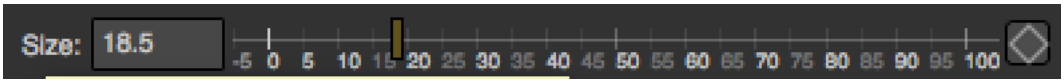
- def *restoreDefaultValue* ([dimension=0])
- def *set* (x)
- def *set* (x, frame)
- def *setDefaultValue* (value[, dimension=0])
- def *setDisplayMaximum* (maximum[, dimension=0])
- def *setDisplayMinimum* (minimum[, dimension=0])
- def *setMaximum* (maximum[, dimension=0])
- def *setMinimum* (minimum[, dimension=0])
- def *setValue* (value[, dimension=0])
- def *setValueAtTime* (value, time[, dimension=0])

### Detailed Description

An int param can have 1 to 3 dimensions. (See *Int2DParam* and *Int3DParam*). Usually this is used to represent a single integer value that may animate over time.

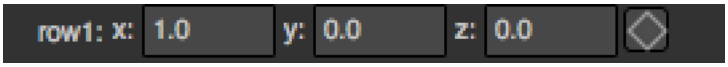
The user interface for them varies depending on the number of dimensions. *Screenshots are the same than for the :doc`DoubleParam` because the user interface is the same*

A 1-dimensional *IntParam*




A 2-dimensional *Int2DParam*

A 3-dimensional *Int3DParam*




### Member functions description

NatronEngine.IntParam.**get**(*frame*)

**Parameters**
**frame** – float

**Return type**
int

Returns the value of this parameter at the given *frame*. If the animation curve has an animation (see *getIsAnimated(dimension)* then the value will be interpolated using the *interpolation* chosen by the user for the curve.

NatronEngine.IntParam.**get**()

**Return type**
int

Returns the value of this parameter at the given current timeline's time.

NatronEngine.IntParam.**getDefaultValue**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
int

Returns the default value for this parameter. *dimension* is meaningless for the IntParam class because it is 1-dimensional, but is useful for inherited classes *Int2DParam* and *Int3DParam*

NatronEngine.IntParam.**getDisplayMaximum**(*dimension*)

**Parameters**
**dimension** – int

**Return type**
int

Returns the display maximum for this parameter at the given *dimension*. The display maximum is the maximum value visible on the slider, internally the value can exceed this range.

NatronEngine.IntParam.**getDisplayMinimum**(*dimension*)

**Parameters**
**dimension** – int

**Return type**
int

Returns the display minimum for this parameter at the given *dimension*. The display minimum is the minimum value visible on the slider, internally the value can exceed this range.

NatronEngine.IntParam.**getMaximum**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
int

Returns the maximum for this parameter at the given *dimension*. The maximum value cannot be exceeded and any higher value will be clamped to this value.

NatronEngine.IntParam.**getMinimum**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
int

Returns the minimum for this parameter at the given *dimension*. The minimum value cannot be exceeded and any lower value will be clamped to this value.

NatronEngine.IntParam.**getValue**([*dimension=0* ])

**Parameters**
**dimension** – int

**Return type**
int

Returns the value of this parameter at the given *dimension* at the current timeline's time.

NatronEngine.IntParam.**getValueAtTime**(*time*[, *dimension=0* ])

**Parameters**

- **time** – float
- **dimension** – int

**Return type**
int

Returns the value of this parameter at the given *dimension* at the given *time*.

If the animation curve has an animation (see *getIsAnimated(dimension)* then the value will be interpolated using the *interpolation* chosen by the user for the curve.

NatronEngine.IntParam.**restoreDefaultValue**([*dimension=0* ])

**Parameters**
**dimension** – int

Returns the value of this parameter at the given *dimension* at the given *time*.

NatronEngine.IntParam.**set**(*x*, *frame*)

**Parameters**

- **x** – int
- **frame** – float

Set a new keyframe on the parameter with the value *x* at the given *frame*.

NatronEngine.IntParam.**set**(*x*)

**Parameters**
**x** – int

Set the value of this parameter to be *x*. If this parameter is animated (see *getIsAnimated(dimension)* then this function will automatically add a keyframe at the timeline's current time.

NatronEngine.IntParam.**setDefaultValue**(*value*[, *dimension=0* ])

**Parameters**

- **value** – int
- **dimension** – int

Set the default *value* for this parameter at the given *dimension*.

NatronEngine.IntParam.**setDisplayMaximum**(*maximum*[, *dimension=0* ])

**Parameters**

- **maximum** – int
- **dimension** – int

Set the display maximum of the parameter to be *maximum* for the given *dimension*. See *getDisplayMaximum*

NatronEngine.IntParam.**setDisplayMinimum**(*minimum*[, *dimension=0* ])

**Parameters**

- **minimum** – int
- **dimension** – int

Set the display minimum of the parameter to be *minmum* for the given *dimension*. See *getDisplayMinimum*

NatronEngine.IntParam.**setMaximum**(*maximum*[, *dimension=0* ])

**Parameters**

- **maximum** – int

- **dimension** – int

Set the maximum of the parameter to be *maximum* for the given *dimension*. See *getMaximum*

NatronEngine.IntParam.**setMinimum**(*minimum*[, *dimension=0* ])

**Parameters**

- **minimum** – int
- **dimension** – int

Set the minimum of the parameter to be *minimum* for the given *dimension*. See *getMinimum*

NatronEngine.IntParam.**setValue**(*value*[, *dimension=0* ])

**Parameters**

- **value** – int
- **dimension** – int

Same as *set(value,dimension)*

NatronEngine.IntParam.**setValueAtTime**(*value*, *time*[, *dimension=0* ])

**Parameters**

- **value** – int
- **time** – float
- **dimension** – int

Same as *set(value,time,dimension)*

### ItemBase

**Inherited by:** *BezierCurve*, *Layer*

### Synopsis

This is an abstract class that serves as a base class for both *Layer* and *BezierCurve*. See *detailed* description…

### Functions

- def *getLabel* ()
- def *getLocked* ()
- def *getLockedRecursive* ()
- def *getParentLayer* ()
- def *getParam* (name)
- def *getScriptName* ()
- def *getVisible* ()
- def *setLabel* (name)
- def *setLocked* (locked)
- def *setScriptName* (name)
- def *setVisible* (activated)

### Detailed Description

This class gathers all common functions to both *layers* and *beziers*. An item has both a *script-name* and *label*. The *script-name* uniquely identifies an item within a roto node, while several items can have the same *label*.

### Member functions description

NatronEngine.ItemBase.**getLabel**()

**Return type**
str

Returns the label of the item, has visible in the table of the settings panel.

NatronEngine.ItemBase.**getLocked**()

**Return type**
bool

Returns whether this item is locked or not. When locked the item is no longer editable by the user.

NatronEngine.ItemBase.**getLockedRecursive**()

**Return type**
bool

Returns whether this item is locked or not. Unlike *getLocked()* this function looks parent layers recursively to find out if the item should be locked.

NatronEngine.ItemBase.**getParentLayer**()

**Return type**
Layer

Returns the parent *layer* of the item. All items must have a parent layer, except the base layer.

NatronEngine.ItemBase.**getParam**(*name*)

**Parameters**
**name** – str

**Return type**
Param

Returns a *parameter* by its script-name or None if no such parameter exists.

NatronEngine.ItemBase.**getScriptName**()

**Return type**
str

Returns the *script-name* of the item. The script-name is unique for each items in a roto node.

NatronEngine.ItemBase.**getVisible**()

**Return type**
bool

Returns whether the item is visible or not. On the user interface, this corresponds to the small *eye*. When hidden, an item will no longer have its overlay painted on the viewer, but it will still render in the image.

NatronEngine.ItemBase.**setLabel**(*name*)

**Parameters**
**name** – str

Set the item's label.

NatronEngine.ItemBase.**setLocked**(*locked*)

**Parameters**
**locked** – bool

Set whether the item should be locked or not. See *getLocked()*.

NatronEngine.ItemBase.**setScriptName**(*name*)

**Parameters**
**name** – str

**Return type**
bool

Set the script-name of the item. You should never call it yourself as Natron chooses automatically a unique script-name for each item. However this function is made available for internal technicalities, but be aware that changing the script-name of an item can potentially break other scripts relying on it.

NatronEngine.ItemBase.**setVisible**(*activated*)

**Parameters**
**activated** – bool

Set whether the item should be visible in the Viewer. See *getVisible()*.

## Layer

**Inherits** *ItemBase*

## Synopsis

This class is used to group several shapes together and to organize them so they are rendered in a specific order. See *detailed* description...

## Functions

- def *addItem* (item)
- def *getChildren* ()
- def *insertItem* (pos, item)
- def *removeItem* (item)

## Detailed Description

Currently a layer acts only as a group so that you can organize shapes and control in which order they are rendered. To add a new *item* to the layer, use the *addItem(item)* or the *insertItem(item)* function.

To remove an item from the layer, use the *removeItem(item)* function.

Items in a layer are rendered from top to bottom, meaning the bottom-most items will always be drawn on top of other items.

### Member functions description

NatronEngine.Layer.**addItem**(*item*)

**Parameters**
**item** – ItemBase

Adds a new item at the bottom of the layer.

NatronEngine.Layer.**getChildren**()

**Return type**
sequence

Returns a sequence with all *items* in the layer.

NatronEngine.Layer.**insertItem**(*pos*, *item*)

**Parameters**

- **pos** – int
- **item** – ItemBase

Inserts a new item at the given *pos* (0 based index) in the layer. If *pos* is out of range, it will be inserted at the bottom of the layer.

NatronEngine.Layer.**removeItem**(*item*)

**Parameters**
**item** – ItemBase

Removes the *item* from the layer.

## Natron

### Detailed Description

This class contains enumerations that are used by some functions of the API to return status that are more complicated than a simple boolean value.

NatronEngine.Natron.**StandardButtonEnum**

Can have the following values:

- eStandardButtonNoButton = 0x00000000,
- eStandardButtonEscape = 0x00000200, // obsolete
- eStandardButtonOk = 0x00000400,
- eStandardButtonSave = 0x00000800,
- eStandardButtonSaveAll = 0x00001000,
- eStandardButtonOpen = 0x00002000,
- eStandardButtonYes = 0x00004000,
- eStandardButtonYesToAll = 0x00008000,
- eStandardButtonNo = 0x00010000,
- eStandardButtonNoToAll = 0x00020000,
- eStandardButtonAbort = 0x00040000,
- eStandardButtonRetry = 0x00080000,
- eStandardButtonIgnore = 0x00100000,

- eStandardButtonClose = 0x00200000,
- eStandardButtonCancel = 0x00400000,
- eStandardButtonDiscard = 0x00800000,
- eStandardButtonHelp = 0x01000000,
- eStandardButtonApply = 0x02000000,
- eStandardButtonReset = 0x04000000,
- eStandardButtonRestoreDefaults = 0x08000000

NatronEngine.Natron.**ImagePlaneDescEnum**

Can have the following values:

- eImageComponentNone = 0,
- eImageComponentAlpha,
- eImageComponentRGB,
- eImageComponentRGBA

NatronEngine.Natron.**ImageBitDepthEnum**

Can have the following values:

- eImageBitDepthNone = 0,
- eImageBitDepthByte,
- eImageBitDepthShort,
- eImageBitDepthFloat

NatronEngine.Natron.**KeyframeTypeEnum**

Can have the following values:

- eKeyframeTypeConstant = 0,
- eKeyframeTypeLinear = 1,
- eKeyframeTypeSmooth = 2,
- eKeyframeTypeCatmullRom = 3,
- eKeyframeTypeCubic = 4,
- eKeyframeTypeHorizontal = 5,
- eKeyframeTypeFree = 6,
- eKeyframeTypeBroken = 7,
- eKeyframeTypeNone = 8

NatronEngine.Natron.**ValueChangedReasonEnum**

Can have the following values:

- eValueChangedReasonUserEdited = 0, A user change to the param triggered the call, gui will not be refreshed but onParamChanged will be called
- eValueChangedReasonPluginEdited , A plugin change triggered the call, gui will be refreshed but onParamChanged not called
- eValueChangedReasonNatronGuiEdited, Natron gui called setValue itself, onParamChanged will be called (with a reason of User edited) AND param gui refreshed
- eValueChangedReasonNatronInternalEdited, Natron engine called setValue itself, onParamChanged will be called (with a reason of plugin edited) AND param gui refreshed

- eValueChangedReasonTimeChanged , A time-line seek changed the call, called when timeline time changes
- eValueChangedReasonSlaveRefresh , A master parameter ordered the slave to refresh its value
- eValueChangedReasonRestoreDefault , The param value has been restored to its defaults

NatronEngine.Natron.**AnimationLevelEnum**

Can have the following values:

- eAnimationLevelNone = 0,
- eAnimationLevelInterpolatedValue = 1,
- eAnimationLevelOnKeyframe = 2

NatronEngine.Natron.**OrientationEnum**

Can have the following values:

- eOrientationHorizontal = 0x1,
- eOrientationVertical = 0x2

NatronEngine.Natron.**ImagePremultiplicationEnum**

Can have the following values:

- eImagePremultiplicationOpaque = 0,
- eImagePremultiplicationPremultiplied,
- eImagePremultiplicationUnPremultiplied,

NatronEngine.Natron.**StatusEnum**

Can have the following values:

- eStatusOK = 0,
- eStatusFailed = 1,
- eStatusReplyDefault = 14

NatronEngine.Natron.**ViewerCompositingOperatorEnum**

Can have the following values:

- eViewerCompositingOperatorNone,
- eViewerCompositingOperatorOver,
- eViewerCompositingOperatorMinus,
- eViewerCompositingOperatorUnder,
- eViewerCompositingOperatorWipe

NatronEngine.Natron.**PlaybackModeEnum**

Can have the following values:

- ePlaybackModeLoop = 0,
- ePlaybackModeBounce,
- ePlaybackModeOnce

NatronEngine.Natron.**PixmapEnum**

See here for potential values of this enumeration.

NatronEngine.Natron.**ViewerColorSpaceEnum**

Can have the following values:

- eViewerColorSpaceSRGB = 0,
- eViewerColorSpaceLinear,

- eViewerColorSpaceRec709

### OutputFileParam

**Inherits** *StringParamBase*

### Synopsis

This parameter is used to specify an output file

### Functions

- def *openFile* ()
- def *setSequenceEnabled* (enabled)

### Member functions description

`NatronEngine.OutputFileParam.`**`openFile`**`()`

When called in GUI mode, this will open a file dialog for the user. Does nothing in background mode.

`NatronEngine.OutputFileParam.`**`setSequenceEnabled`**`(`*`enabled`*`)`

**param enabled**
`bool`

Determines whether the file dialog opened by *openFile()* should have support for file sequences or not.

### PageParam

**Inherits** *Param*

### Synopsis

A page param is a container for other parameters. See *detailed* description.

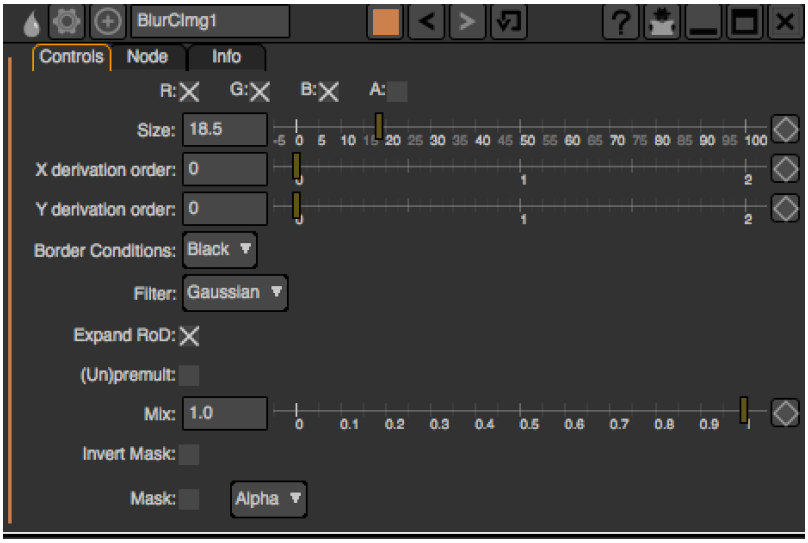
### Functions

- def *addParam* (param)

### Detailed Description

A page param does not hold any relevant value. Rather this is a purely graphical element that is used to gather parameters under a tab. On the graphical interface a PageParam looks like this (e.g. the *Controls* tab of the panel)

**Warning:** All parameters **MUST** be in a container, being a *group* or a *page*. If a *Param* is not added into any container, Natron will add it by default to the *User* page.




NatronEngine.PageParam.**addParam**(*param*)

**param param**
Param

Adds *param* into the page.

**Warning:** Note that this function cannot be called on pages that are not user parameters (i.e: created either by script or by the "Manage user parameters" user interface)

**Warning:** Once called, you should call `refreshUserParamsGUI()` to update the user interface.

## Param

**Inherited by:** *ParametricParam*, *PageParam*, *GroupParam*, *ButtonParam*, *AnimatedParam*, *StringParamBase*, *PathParam*, *OutputFileParam*, *FileParam*, *StringParam*, *BooleanParam*, *ChoiceParam*, *ColorParam*, *DoubleParam*, *Double2DParam*, *Double3DParam*, *IntParam*, *Int2DParam*, *Int3DParam*

## Synopsis

This is the base class for all parameters. Parameters are the controls found in the settings panel of a node. See *details here*.

## Functions

- def *copy* (param[, dimension=-1])
- def *curve* (time[, dimension=-1])
- def *getAddNewLine* ()
- def *getCanAnimate* ()
- def *getEvaluateOnChange* ()
- def *getHelp* ()

- def *getIsAnimationEnabled* ()
- def *getIsEnabled* ([dimension=0])
- def *getIsPersistant* ()
- def *getIsVisible* ()
- def *getLabel* ()
- def *getNumDimensions* ()
- def *getParent* ()
- def *getScriptName* ()
- def *getTypeName* ()
- def random<NatronEngine.Param.random() ([min=0.,max=1.])
- def random<NatronEngine.Param.random() (seed)
- def randomInt<NatronEngine.Param.randomInt() (min,max)
- def randomInt<NatronEngine.Param.randomInt() (seed)
- def *setAddNewLine* (a)
- def *setAnimationEnabled* (e)
- def *setEnabled* (enabled[, dimension=0])
- def *setEnabledByDefault* (enabled)
- def *setEvaluateOnChange* (eval)
- def *setIconFilePath* (icon)
- def *setHelp* (help)
- def *setPersistant* (persistant)
- def *setVisible* (visible)
- def *setVisibleByDefault* (visible)
- def *setAsAlias* (otherParam)
- def *slaveTo* (otherParam, thisDimension, otherDimension)
- def *unslave* (dimension)

### Detailed Description

The Param object can be used to control a specific parameter of a node. There are different types of parameters, ranging from the single checkbox (boolean) to parametric curves. Each type of parameter has specific functions to control the parameter according to its internal value type. In this base class, all common functionalities for parameters have been gathered.

**Warning:** Note that since each child class has a different value type, all the functions to set/get values, and set/get keyframes are specific for each class.

A Param can have several functions to control some properties, namely:

- addNewLine: When True, the next parameter declared will be on the same line as this parameter
- canAnimate: This is a static property that you cannot control which tells whether animation can be enabled for a specific type of parameter

- animationEnabled: For all parameters that have canAnimate=True, this property controls whether this parameter should be able to animate (= have keyframes) or not
- evaluateOnChange: This property controls whether a new render should be issues when the value of this parameter changes
- help: This is the tooltip visible when hovering the parameter with the mouse
- enabled: Should this parameter be editable by the user or not. Generally, disabled parameters have their text in painted in black.
- visible: Should this parameter be visible in the user interface or not
- persistant: If true then the parameter value will be saved in the project
- dimension: How many dimensions this parameter has. For instance a *Double3DParam* has 3 dimensions. A *ParametricParam* has as many dimensions as there are curves.

Note that most of the functions in the API of Params take a *dimension* parameter. This is a 0-based index of the dimension on which to operate.

The following table sums up the different properties for all parameters including type-specific properties not listed above.

Note that most of the properties are not dynamic: they need to be set before calling `refreshUserParamsGUI()` which will create the GUI for these parameters.

**Warning:** A non-dynamic property can no longer be changed once refreshUserParamsGUI() has been called.

For non *user-parameters* (i.e: parameters that were defined by the underlying OpenFX plug-in), only their **dynamic** properties can be changed since `refreshUserParamsGUI()` will only refresh user parameters.

If a Setter function contains a (*) that means it can only be called for user parameters, it has no effect on already declared non-user parameters.

| Name: | Type: | Dynamic: | Setter: | Getter: | Default: |
|---|---|---|---|---|---|
| name | string | no | None | getScriptName | “” |
| label | string | no | None | getLabel | “” |
| help | string | yes | setHelp(*) | getHelp | “” |
| addNewLine | bool | no | setAddNewLine(*) | getAddNewLine | True |
| persistent | bool | yes | setPersistant(*) | getIsPersistant | True |
| evaluatesOnChange | bool | yes | setEvaluateOnChange(*) | getEvaluateOnChange | True |
| animates | bool | no | setAnimationEnabled(*) | getIsAnimationEnabled | See *(1)* |
| visible | bool | yes | setVisible | getIsVisible | True |
| enabled | bool | yes | setEnabled | getIsEnabled | True |
| *Properties on IntParam, Int2DParam, Int3DParam, DoubleParam, Double2DParam, Double3DParam, ColorParam only:* | | | | | |
| min | int/double | yes | setMinimum(*) | getMinimum | INT_MIN |
| max | int/double | yes | setMaximum(*) | getMaximum | INT_MAX |
| displayMin | int/double | yes | setDisplayMinimum(*) | getDisplayMinimum | INT_MIN |
| displayMax | int/double | yes | setDisplayMaximum(*) | getDisplayMaximum | INT_MAX |
| *Properties on ChoiceParam only:* | | | | | |
| options | list<string> | yes | setOptions/addOption(*) | getOption | empty list |
| *Properties on FileParam, OutputFileParam only:* | | | | | |
| sequenceDialog | bool | yes | setSequenceEnabled(*) | None | False |
| *Properties on StringParam only:* | | | | | |
| type | TypeEnum | no | setType(*) | None | eStringTypeDefault |
| *Properties on PathParam only:* | | | | | |
| multiPathTable | bool | no | setAsMultiPathTable(*) | None | False |
| *Properties on GroupParam only:* | | | | | |
| isTab | bool | no | setAsTab(*) | None | False |

(1): animates is set to True by default only if it is one of the following parameters: IntParam Int2DParam Int3DParam DoubleParam Double2DParam Double3DParam ColorParam

Note that ParametricParam , GroupParam, PageParam, ButtonParam, FileParam, OutputFileParam, PathParam cannot animate at all.

### Member functions description

`NatronEngine.Param.`**`copy`**`(`*other*`[`, *dimension=-1* `])`

**Parameters**

- **other** – `Param`
- **dimension** – `int`

**Return type**
`bool`

Copies the *other* parameter values, animation and expressions at the given *dimension*. If *dimension* is -1, all dimensions in **min(getNumDimensions(), other.getNumDimensions())** will be copied.

**Note:** Note that types must be convertible:

IntParam,DoubleParam, ChoiceParam, ColorParam and BooleanParam can convert between types but StringParam cannot.

**Warning:** When copying a parameter, only values are copied, not properties, hence if copying a choice parameter, make sure that the value you copy has a meaning to the receiver otherwise you might end-up with an undefined behaviour, e.g.:

If ChoiceParam1 has 3 entries and the current index is 2 and ChoiceParam2 has 15 entries and current index is 10, copying ChoiceParam2 to ChoiceParam1 will end-up in undefined behaviour.

This function returns **True** upon success and **False** otherwise.

`NatronEngine.Param.`**`curve`**`(`*time*`[`, *dimension=-1* `])`

**Parameters**

- **time** – `float`
- **dimension** – `int`

**Return type**
`float`

If this parameter has an animation curve on the given *dimension*, then the value of that curve at the given *time* is returned. If the parameter has an expression on top of the animation curve, the expression will be ignored, ie.g. the value of the animation curve will still be returned. This is useful to write custom expressions for motion design such as looping, reversing, etc…

`NatronEngine.Param.`**`getAddNewLine`**`()`

**Return type**
`bool`

Returns whether the parameter is on a new line or not.

`NatronEngine.Param.`**`getCanAnimate`**`()`

**Return type**
`bool`

Returns whether this class can have any animation or not. This cannot be changed. calling *setAnimationEnabled(True)* will not enable animation for parameters that cannot animate.

`NatronEngine.Param.`**`getEvaluateOnChange`**`()`

**Return type**
`bool`

Returns whether this parameter can evaluate on change. A parameter evaluating on change means that a new render will be triggered when its value changes due to a call of one of the setValue functions.

`NatronEngine.Param.`**`getHelp`**`()`

**Return type**
`str`

Returns the help tooltip visible when hovering the parameter with the mouse on the GUI;

`NatronEngine.Param.`**`getIsAnimationEnabled`**`()`

**Return type**
`bool`

Returns whether animation is enabled for this parameter. This is dynamic and can be changed by *setAnimationEnabled(bool)* if the parameter *can animate*.

NatronEngine.Param.**getIsEnabled**([*dimension=0*])

**Parameters**
**dimension** – int

**Return type**
bool

Returns whether the given *dimension* is enabled or not.

NatronEngine.Param.**getIsPersistant**()

**Return type**
bool

Returns whether this parameter should be persistant in the project or not. Non-persistant parameter will not have their value saved when saving a project.

NatronEngine.Param.**getIsVisible**()

**Return type**
bool

Returns whether the parameter is visible on the user interface or not.

NatronEngine.Param.**getLabel**()

**Return type**
str

Returns the *label* of the parameter. This is what is displayed in the settings panel of the node. See *this section* for an explanation of the difference between the *label* and the *script name*

NatronEngine.Param.**getNumDimensions**()

**Return type**
int

Returns the number of dimensions. For exampel a *Double3DParam* has 3 dimensions. A *ParametricParam* has as many dimensions as there are curves.

NatronEngine.Param.**getParent**()

**Return type**
NatronEngine.Param

If this param is within a *group*, then the parent will be the group. Otherwise the param's parent will be the:doc:*page<PageParam>* onto which the param appears in the settings panel.

NatronEngine.Param.**getScriptName**()

**Return type**
str

Returns the *script-name* of the param as used internally. The script-name is visible in the tooltip of the parameter when hovering the mouse over it on the GUI. See *this section* for an explanation of the difference between the *label* and the *script name*

NatronEngine.Param.**getTypeName**()

**Return type**
str

Returns the type-name of the parameter.

NatronEngine.Param.**random**([*min=0.*, *max=1.* ])

**Parameters**

- **min** – float
- **max** – float

**Return type**
float

Returns a pseudo-random value in the interval [*min*, *max*[. The value is produced such that for a given parameter it will always be the same for a given time on the timeline, so that the value can be reproduced exactly.

---

**Note:** Note that if you are calling multiple times random() in the same parameter expression, each call would return a different value, but they would all return the same value again if the expressions is interpreted at the same time, e.g.:

# Would always return the same value at a given timeline's time. random() - random()

---

Note that you can ensure that random() returns a given value by calling the overloaded function *random(min, max,time,seed)* instead.

NatronEngine.Param.**random**(*min*, *max*, *time*[, *seed=0* ])

**Parameters**

- **min** – float
- **max** – float
- **time** – float
- **seed** – unsigned int

**Return type**
float

Same as *random()* but takes **time** and **seed** in parameters to control the value returned by the function. E.g:

```
ret = random(0,1,frame,2) - random(0,1,frame,2)
# ret == 0 always
```

NatronEngine.Param.**randomInt**(*min*, *max*)

**Parameters**

- **min** – int
- **max** – int

**Return type**
int

Same as *random(min,max)* but returns an integer in the range [*min*,*max*[

NatronEngine.Param.**randomInt**(*min*, *max*, *time*[, *seed=0* ])

**Parameters**

- **min** – int
- **max** – int
- **time** – float
- **seed** – unsigned int

**Return type**
int

Same as *random(min,max,time,seed)* but returns an integer in the range [0, INT_MAX] instead.

NatronEngine.Param.**setAddNewLine**(*a*)

**Parameters**
**a** – bool

Set whether the parameter should be on a new line or not. See *getAddNewLine()*

NatronEngine.Param.**setAnimationEnabled**(*e*)

**Parameters**
**e** – bool

Set whether animation should be enabled (= can have keyframes). See *getIsAnimationEnabled()*

NatronEngine.Param.**setEnabled**(*enabled*[, *dimension=0* ])

**Parameters**

- **enabled** – bool
- **dimension** – int

Set whether the given *dimension* of the parameter should be enabled or not. When disabled, the parameter will be displayed in black and the user will not be able to edit it. See *getIsEnabled(dimension)*

NatronEngine.Param.**setEnabledByDefault**(*enabled*)

**Parameters**
**enabled** – bool

Set whether the parameter should be enabled or not by default. When disabled, the parameter will be displayed in black and the user will not be able to edit it.

NatronEngine.Param.**setEvaluateOnChange**(*eval*)

**Parameters**
**eval** – bool

Set whether evaluation should be enabled for this parameter. When True, calling any function that change the value of the parameter will trigger a new render. See *getEvaluateOnChange()*

NatronEngine.Param.**setIconFilePath**(*icon*)

**Parameters**
**icon** – str

Icon file path for the label. This should be either an absolute path or a file-path relative to a path in the NATRON_PLUGIN_PATH. The icon will replace the label of the parameter.

NatronEngine.Param.**setHelp**(*help*)

**Parameters**
**help** – str

Tooltip help string for the parameter. See *getHelp()*

NatronEngine.Param.**setPersistant**(*persistant*)

**Parameters**
**persistant** – bool

Set whether this parameter should be persistant or not. Non persistant parameter will not be saved in the project. See *getIsPersistant*

NatronEngine.Param.**setVisible**(*visible*)

**Parameters**
**visible** – bool

Set whether this parameter should be visible or not to the user. See *getIsVisible()*

NatronEngine.Param.**setVisibleByDefault**(*visible*)

**Parameters**
**visible** – bool

Set whether this parameter should be visible or not to the user in its default state.

NatronEngine.Param.**setAsAlias**(*otherParam*)

**Parameters**
**otherParam** – Param

**Return type**
bool

Set this parameter as an alias of *otherParam*. They need to be both of the same *type* and of the same *dimension*. This parameter will control *otherParam* entirely and in case of a choice param, its drop-down menu will be updated whenever the *otherParam* menu is updated.

This is used generally to make user parameters on groups with the "Pick" option of the "Manage User Parameters" dialog.

NatronEngine.Param.**slaveTo**(*otherParam*, *thisDimension*, *otherDimension*)

**Parameters**

- **otherParam** – Param
- **thisDimension** – int
- **otherDimension** – int

**Return type**
bool

Set this parameter as a slave of *otherParam*. They need to be both of the same *type* but may vary in dimension, as long as *thisDimension* is valid according to the number of dimensions of this parameter and *otherDimension* is valid according to the number of dimensions of *otherParam*.

This parameter *thisDimension* will be controlled entirely by the *otherDimension* of *otherParam* until a call to *unslave(thisDimension)* is made

NatronEngine.Param.**unslave**(*dimension*)

**Parameters**
**dimension** – int

If the given *dimension* of this parameter was previously slaved, then this function will remove the link between parameters, and the user will be free again to use this parameter as any other.

---

**Note:** The animation and values that were present before the link will remain.

---

## ParametricParam

**Inherits** *Param*

## Synopsis

A parametric param represents one or more parametric functions as curves. See *detailed* explanation below.

## Functions

- def *addControlPoint* (dimension, key, value[,interpolation=NatronEngine.Natron.KeyframeTypeEnum.eKeyframeTypeSmo
- def *addControlPoint* (dimension, key, value, leftDerivative, rightDerivative, [,interpolation=NatronEngine.Natron.KeyframeTypeEnum.eKeyframeTypeSmooth])
- def *deleteAllControlPoints* (dimension)
- def *deleteControlPoint* (dimension, nthCtl)
- def *getCurveColor* (dimension)
- def *getNControlPoints* (dimension)
- def *getNthControlPoint* (dimension, nthCtl)
- def *getValue* (dimension, parametricPosition)
- def *setCurveColor* (dimension, r, g, b)
- def *setNthControlPoint* (dimension, nthCtl, key, value, leftDerivative, rightDerivative)
- def *setNthControlPointInterpolation* (dimension, nthCtl, interpolation)
- def :meth: *setDefaultCurvesFromCurrentCurves<NatronEngine.ParametricParam.setDefaultCurvesFromCurrentCurves>* ()

## Detailed Description

A parametric parameter has as many dimensions as there are curves. Currently the number of curves is static and you may only specify the number of curves via the *nbCurves* argument of the `createParametricParam(name, label,nbCurves)` function.

Parametric curves work almost the same way that animation curves do: you can add control points and remove them.

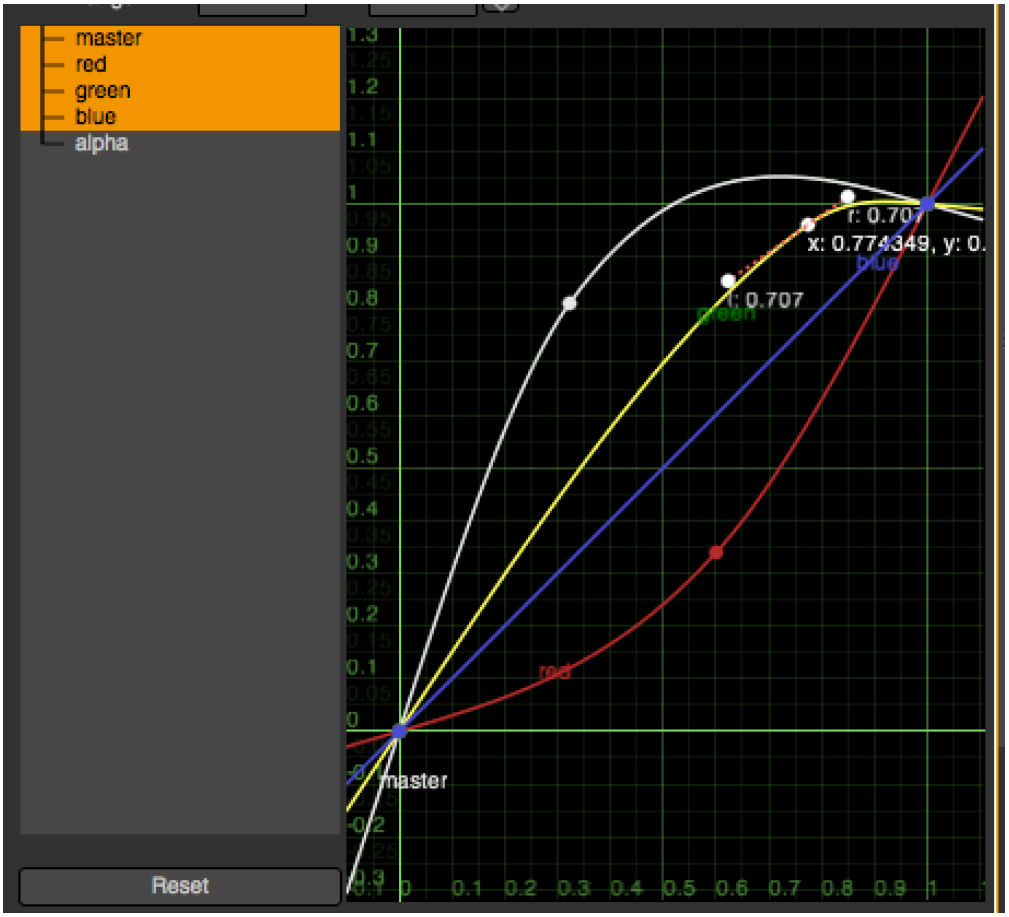
You can peak the value of the curve at a special *parametric position* with the *getValue(dimension, parametricPosition)* function. The *parametric position* is represented by the X axis on the graphical user interface.

## Member functions description

`NatronEngine.ParametricParam.`**`addControlPoint`**(*dimension*, *key*, *value*[, *interpolation=NatronEngine.Natron.KeyframeTypeEnum.eKeyframeTypeSmooth*])

**Parameters**

- **dimension** – `int`
- **key** – `float`
- **value** – `float`




- **interpolation** – *KeyFrameTypeEnum*

**Return type**
*StatusEnum*

Attempts to add a new control point to the curve at the given *dimension*. The new point will have the coordinate (key,value). This function returns a NatronEngine.Natron.StatusEnum.eStatusOK upon success, otherwise NatronEngine.Natron.StatusEnum.eStatusFailed is returned upon failure.

`NatronEngine.ParametricParam.`**`addControlPoint`**`(`*dimension*, *key*, *value*, *leftDerivative*, *rightDerivative*[, *interpolation=NatronEngine.Natron.KeyframeTypeEnum.eKeyframeTypeSmooth*])

**Parameters**

- **dimension** – `int`
- **key** – `float`
- **value** – `float`
- **leftDerivative** – `float`
- **rightDerivative** – `float`
- **interpolation** – *KeyFrameTypeEnum*

**Return type**
*StatusEnum*

Attempts to add a new control point to the curve at the given *dimension*. The new point will have the coordinate (key,value) and the derivatives (leftDerivative, rightDerivative). This function returns a Natro-

nEngine.Natron.StatusEnum.eStatusOK upon success, otherwise NatronEngine.Natron.StatusEnum.eStatusFailed is returned upon failure.

NatronEngine.ParametricParam.**deleteAllControlPoints**(*dimension*)

**Parameters**
**dimension** – int

**Return type**
*StatusEnum*

Removes all control points of the curve at the given *dimension*. This function returns a NatronEngine.Natron.StatusEnum.eStatusOK upon success, otherwise NatronEngine.Natron.StatusEnum.eStatusFailed is returned upon failure.

NatronEngine.ParametricParam.**deleteControlPoint**(*dimension*, *nthCtl*)

**Parameters**

- **dimension** – int
- **nthCtl** – int

**Return type**
*StatusEnum*

Attempts to remove the *nth* control point (sorted in increasing X order) of the parametric curve at the given *dimension*.

This function returns a NatronEngine.Natron.StatusEnum.eStatusOK upon success, otherwise NatronEngine.Natron.StatusEnum.eStatusFailed is returned upon failure.

NatronEngine.ParametricParam.**getCurveColor**(*dimension*)

**Parameters**
**dimension** – *ColorTuple*

Returns a *ColorTuple* with the [R,G,B] color of the parametric curve at the given *dimension* on the graphical user interface.

NatronEngine.ParametricParam.**getNControlPoints**(*dimension*)

**Parameters**
**dimension** – int

**Return type**
int

Returns the number of control points of the curve at the given *dimension*.

NatronEngine.ParametricParam.**getNthControlPoint**(*dimension*, *nthCtl*)

**Parameters**

- **dimension** – int
- **nthCtl** – int

**Return type**
tuple

Returns a *tuple* containing information about the *nth* control point (sorted by increasing X order) control point of the curve at the given *dimension*. The tuple is composed of 5 members:

[status: *StatusEnum*, key : float, value: float, left derivative: float, right derivative: float]

This function returns in the status a NatronEngine.Natron.StatusEnum.eStatusOK upon success, otherwise NatronEngine.Natron.StatusEnum.eStatusFailed is returned upon failure.

NatronEngine.ParametricParam.**getValue**(*dimension*, *parametricPosition*)

**Parameters**

- **dimension** – int
- **parametricPosition** – double

**Return type**
double

Returns the Y value of the curve at the given *parametricPosition* (on the X axis) of the curve at the given *dimension*.

NatronEngine.ParametricParam.**setCurveColor**(*dimension*, *r*, *g*, *b*)

**Parameters**

- **dimension** – int
- **r** – float
- **g** – float
- **b** – float

Set the color of the curve at the given *dimension*.

NatronEngine.ParametricParam.**setNthControlPoint**(*dimension*, *nthCtl*, *key*, *value*, *leftDerivative*, *rightDerivative*)

**Parameters**

- **dimension** – int
- **nthCtl** – int
- **key** – float
- **value** – float
- **leftDerivative** – float
- **rightDerivative** – float

**Return type**
*StatusEnum*

Set the value of an existing control point on the curve at the given *dimension*. The *nthCtl* parameter is the (zero based) index of the control point (by increasing X order). The point will be placed at the coordinates defined by (key,value) and will have the derivatives given by *leftDerivative* and *rightDerivatives*.

This function returns a NatronEngine.Natron.StatusEnum.eStatusOK upon success, otherwise NatronEngine.Natron.StatusEnum.eStatusFailed is returned upon failure.

NatronEngine.ParametricParam.**setNthControlPointInterpolation**(*dimension*, *nthCtl*, *interpolation*)

**Parameters**

- **dimension** – int
- **nthCtl** – int
- **interpolation** – *KeyFrameTypeEnum*

**Return type**
*StatusEnum*

Set the interpolation type of the curve surrounding the control point at the given index *nthCtl*.

`NatronEngine.ParametricParam.`**`setDefaultCurvesFromCurrentCurves`**`()`

Set the default curves of the parameter from the current state of the curves. The default state will be used when the parameter is restored to default.

### PathParam

**Inherits** *StringParamBase*

### Synopsis

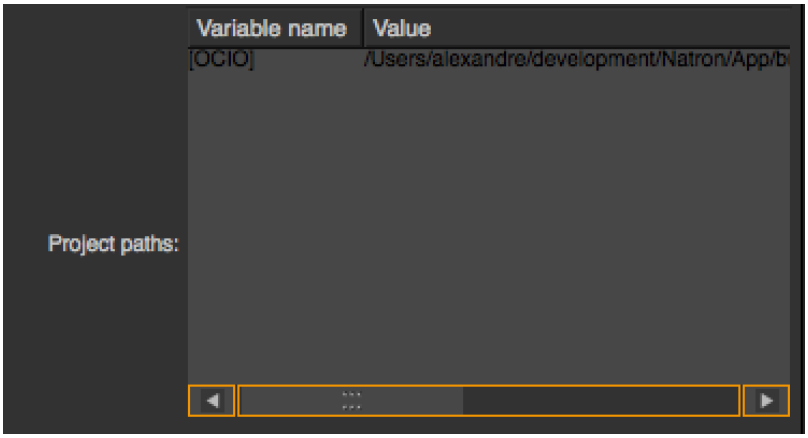
A path param is used to indicate the path to a directory. See *details*...

### Functions

- def *setAsMultiPathTable* ()
- def *getTable* ()
- def *setTable* (table)

### Detailed Description

By default the user can select a single directory as path, unless *setAsMultiPathTable()* is called in which case a table is presented to the user to specify multiple directories like this:




When using multiple paths, internally they are separated by a *;* and the following characters are escaped as per the XML specification:

- < becomes <
- > becomes >
- *&* becomes &
- " becomes "
- ' becomes '

Some more characters are escaped, you can see the full function in the source code of Natron here

### Member functions description

NatronEngine.PathParam.**setAsMultiPathTable**()

When called, the parameter will be able to store multiple paths.

NatronEngine.PathParam.**getTable**()

**Return type**
PySequence

Returns a list of list of strings. Each sub-list corresponds to a row in the table. Each elements of the row are the cell value for each column.

NatronEngine.PathParam.**setTable**(*table*)

**Rparam table**
PySequence

Set the parameter to a list of list of strings. Each sub-list corresponds to a row in the table. Each elements of the row are the cell value for each column. An error will be invoked if the number of columns in the provided *table* do not match the number of columns of the parameter's table.

## PyCoreApplication

**Inherited by:** *PyGuiApplication*

### Synopsis

This object represents a background instance of Natron. See *detailed description*...

### Functions

- def *appendToNatronPath* (path)
- def *getSettings* ()
- def *getBuildNumber* ()
- def *getInstance* (idx)
- def *getActiveInstance* ()
- def *getNatronDevelopmentStatus* ()
- def *getNatronPath* ()
- def *getNatronVersionEncoded* ()
- def *getNatronVersionMajor* ()
- def *getNatronVersionMinor* ()
- def *getNatronVersionRevision* ()
- def *getNatronVersionString* ()
- def *getNumCpus* ()
- def *getNumInstances* ()
- def *getPluginIDs* ()
- def *getPluginIDs* (filter)
- def *isBackground* ()

- def *is64Bit* ()
- def *isLinux* ()
- def *isMacOSX* ()
- def *isUnix* ()
- def *isWindows* ()
- def *setOnProjectCreatedCallback* (pythonFunctionName)
- def *setOnProjectLoadedCallback* (pythonFunctionName)

### Detailed Description

When running Natron there's a **unique** instance of the *PyCoreApplication* object. It holds general information about the process.

Generally, throughout your scripts, you can access this object with the variable *natron* that Natron pre-declared for you, e.g.:

natron.getPluginIDs()

**Warning:** The variable **natron** belongs to the module **NatronEngine**, hence make sure to make the following import:

```
from NatronEngine import*
```

Otherwise with a regular *import* you can still access **natron** by prepending the module:

```
NatronEngine.natron
```

**Warning:** The variable stored in the module **NatronEngine** contains a reference to a *PyCoreApplication*. If you need to have the GUI functionalities provided by *PyGuiApplication*, you must then use the variable **natron** belonging to the module **NatronGui**. Hence make sure to make the following import to have access to **natron**:

```
from NatronGui import*
```

With a regular import you can access it using **NatronGui.natron**.

**Warning:** Make sure to **not** make the 2 following imports, otherwise the **natron** variable will not point to something expected:

```
#This you should not do!
from NatronEngine import *
from NatronGui import *

#This is OK
import NatronEngine
import NatronGui

#This can also be done for convenience
from NatronEngine import NatronEngine.natron as NE
from NatronGui import NatronGui.natron as NG
```

This class is used only for background (command-line) runs of Natron, that is when you launch Natron in the following ways:

```
Natron -b ...
Natron -t
NatronRenderer
```

For interactive runs of Natron (with the user interface displayed), the derived class *PyGuiApplication* is used instead, which gives access to more GUI specific functionalities.

You should never need to make a new instance of this object yourself. Note that even if you did, internally the same object will be used and they will all refer to the same Natron application.

In GUI mode, a :doc`PyGuiApplication` can have several projects opened. For each project you can refer to them with pre-declared variables *app1* , *app2*, etc...

In background mode, there would be only 1 project opened, so Natron does the following assignment for you before calling any scripts:

app = app1

See *App* to access different opened projects.

### Member functions description

**class** NatronEngine.**PyCoreApplication**

Defines a new variable pointing to the same underlying application that the *natron* variable points to. This is equivalent to calling:

```
myVar = natron
```

NatronEngine.PyCoreApplication.**appendToNatronPath**(*path*)

**Parameters**
**path** – str

Adds a new path to the Natron search paths. See *this section* for a detailed explanation of Natron search paths.

NatronEngine.PyCoreApplication.**getSettings**()

**Return type**
AppSettings

Returns an object containing all Natron settings. The settings are what can be found in the preferences of Natron.

NatronEngine.PyCoreApplication.**getBuildNumber**()

**Return type**
int

Returns the build-number of the current version of Natron. Generally this is used for release candidates, e.g.:

Natron v1.0.0-RC1 : build number = 1 Natron v1.0.0-RC2 : build number = 2 Natron v1.0.0-RC3 : build number = 3

NatronEngine.PyCoreApplication.**getInstance**(*idx*)

**Parameters**
**idx** – int

**Return type**
App

Returns the *App* instance at the given *idx*. Note that *idx* is 0-based, e.g.: 0 would return what's pointed to by *app1*.

NatronEngine.PyCoreApplication.**getActiveInstance**()

**Return type**
App

Returns the *App* instance corresponding to the last project the user interacted with.

NatronEngine.PyCoreApplication.**getNatronDevelopmentStatus**()

**Return type**
str

Returns a string describing the development status of Natron. This can be one of the following values:

- Alpha : Meaning the software has unimplemented functionalities and probably many bugs left
- Beta : Meaning the software has all features that were planned are implemented but there may be bugs
- RC : Meaning the software seems in a good shape and should be ready for release unless some last minute show-stoppers are found
- Release : Meaning the software is ready for production

NatronEngine.PyCoreApplication.**getNatronPath**()

**Return type**
sequence

Returns a sequence of string with all natron *search paths*.

NatronEngine.PyCoreApplication.**getNatronVersionEncoded**()

**Return type**
int

Returns an *int* with the version of Natron encoded so that you can compare versions of Natron like this:

```
if natron.getNatronVersionEncoded() >= 20101:
    ...
```

In that example, Natron's version would be 2.1.1

NatronEngine.PyCoreApplication.**getNatronVersionMajor**()

**Return type**
int

Returns the major version of Natron. If the version is 1.0.0, that would return 1.

NatronEngine.PyCoreApplication.**getNatronVersionMinor**()

**Return type**
int

Get the minor version of Natron. If the version is 1.2.0, that would return 2.

NatronEngine.PyCoreApplication.**getNatronVersionRevision**()

**Return type**
int

Returns the revision number of the version. If the version is 1.2.3, that would return 3.

NatronEngine.PyCoreApplication.**getNatronVersionString**()

**Return type**
str

Returns the version of Natron as a string, e.g.: *"1.1.0"*

NatronEngine.PyCoreApplication.**getNumCpus**()

**Return type**
int

Returns the maximum hardware concurrency of the computer. If the computer has 8 hyper-threaded cores, that would return 16.

NatronEngine.PyCoreApplication.**getNumInstances**()

**Return type**
int

Returns the number of :doc`App` instances currently active.

NatronEngine.PyCoreApplication.**getPluginIDs**()

**Return type**
sequence

Returns a sequence of strings with all plugin-IDs currently loaded.

NatronEngine.PyCoreApplication.**getPluginIDs**(*filter*)

**Parameters**
**filter** – str

**Return type**
sequence

Same as *getPluginIDs()* but returns only plug-ins *containing* the given *filter*. Comparison is done **without** case-sensitivity.

NatronEngine.PyCoreApplication.**isBackground**()

**Return type**
bool

Returns True if Natron is executed in background mode, i.e: from the command-line, without any graphical user interface displayed.

NatronEngine.PyCoreApplication.**is64Bit**()

**Return type**
bool

Returns True if Natron is executed on a 64 bit computer.

NatronEngine.PyCoreApplication.**isLinux**()

**Return type**
bool

Returns True if Natron is executed on a Linux or FreeBSD distribution.

NatronEngine.PyCoreApplication.**isMacOSX**()

**Return type**
bool

Returns True if Natron is executed on MacOSX.

NatronEngine.PyCoreApplication.**isUnix**()

**Return type**
bool

Returns True if Natron is executed on Unix. Basically this is equivalent to:

```
if natron.isLinux() or natron.isMacOSX():
```

NatronEngine.PyCoreApplication.**isWindows**()

**Return type**
bool

Returns True if Natron is executed on Windows.

NatronEngine.PyCoreApplication.**setOnProjectCreatedCallback**(*pythonFunctionName*)

**Param**
str

Convenience function to set the After Project Created callback. Note that this will override any callback set in the Preferences–>Python–>After Project created. This is exactly the same as calling:

```
NatronEngine.settings.afterProjectCreated.set(pythonFunctionName)
```

---

**Note:** Clever use of this function can be made in the **init.py** script to do generic stuff for all projects (whether they are new projects or loaded projects). For instance one might want to add a list of Formats to the project. See the example *here*

---

NatronEngine.PyCoreApplication.**setOnProjectLoadedCallback**(*pythonFunctionName*)

**Param**
str

Convenience function to set the Default After Project Loaded callback. Note that this will override any callback set in the Preferences–>Python–>Default After Project Loaded. This is exactly the same as calling:

```
NatronEngine.settings.defOnProjectLoaded.set(pythonFunctionName)
```

### RectD

### Synopsis

A rectangle defined with floating point precision. See *detailed* description below

### Functions

- def *area* ()
- def *bottom* ()
- def *clear* ()
- def *contains* (otherRect)
- def *height* ()
- def *intersect* (otherRect)
- def *intersects* (otherRect)
- def *isInfinite* ()
- def *isNull* ()
- def *left* ()

- def *merge* (otherRect)
- def *right* ()
- def *set* (x1,y1,x2,y2)
- def *set_bottom* (y1)
- def *set_left* (x1)
- def *set_right* (x2)
- def *set_top* (y2)
- def *top* ()
- def *translate* (dx,dy)
- def *width* ()

### Detailed Description

A rectangle where x1 < x2 and y1 < y2 such as width() == (x2 - x1) && height() == (y2 - y1) (x1,y1) is are the coordinates of the bottom left corner of the rectangle. The last element valid in the y dimension is y2 - 1 and the last valid in the x dimension is x2 - 1. x1,x2,y1 and y2 are with floating point precision.

### Member functions description

`NatronEngine.RectD.area()`

**Return type**
`double`

Returns the area covered by the rectangle, that is: (y2 - y1) * (x2 - x1)

`NatronEngine.RectD.bottom()`

**Return type**
`double`

Returns the bottom edge, that is the

`NatronEngine.RectD.clear()`

Same as *set* (0,0,0,0)

`NatronEngine.RectD.contains(otherRect)`

**Parameters**
**otherRect** – `RectD`

**Return type**
`bool`

Returns True if *otherRect* is contained in or equals this rectangle, that is if:

```
otherRect.x1 >= x1 and
otherRect.y1 >= y1 and
otherRect.x2 <= x2 and
otherRect.y2 <= y2
```

`NatronEngine.RectD.height()`

**Return type**
`double`

Returns the height of the rectangle, that is: y2 - y1

NatronEngine.RectD.**intersect**(*otherRect*)

**Parameters**
**otherRect** – RectD

**Return type**
RectD

Returns the intersection between this rectangle and *otherRect*. If the intersection is empty, the return value will have the isNull() function return True.

NatronEngine.RectD.**intersects**(*otherRect*)

**Parameters**
**otherRect** – RectD

**Return type**
bool

Returns True if rectangle and *otherRect* intersect.

NatronEngine.RectD.**isInfinite**()

**Return type**
bool

Returns True if this rectangle is considered to cover an infinite area. Some generator effects use this to indicate that they can potentially generate an image of infinite size.

NatronEngine.RectD.**isNull**()

**Return type**
bool

Returns true if x2 <= x1 or y2 <= y1

NatronEngine.RectD.**left**()

**Return type**
double

Returns x1, that is the position of the left edge of the rectangle.

NatronEngine.RectD.**merge**(*otherRect*)

**Parameters**
**otherRect** – RectD

Unions this rectangle with *otherRect*. In other words, this rectangle becomes the bounding box of this rectangle and *otherRect*.

NatronEngine.RectD.**left**()

**Return type**
double

Returns x1, that is the position of the left edge of the rectangle.

NatronEngine.RectD.**right**()

**Return type**
double

Returns x2, that is the position of the right edge of the rectangle. x2 is considered to be the first element outside the rectangle.

NatronEngine.RectD.**set**(*x1*, *y1*, *x2*, *y2*)

**Parameters**

- **x1** – double
- **y1** – double
- **x2** – double
- **y2** – double

Set the x1, y1, x2, y2 coordinates of this rectangle.

NatronEngine.RectD.**set_bottom**(*y1*)

**Parameters**
**y1** – double

Set y1

NatronEngine.RectD.**set_left**(*x1*)

**Parameters**
**y1** – double

Set x1

NatronEngine.RectD.**set_right**(*x2*)

**Parameters**
**x2** – double

Set x2

NatronEngine.RectD.**set_top**(*y2*)

**Parameters**
**y2** – double

Set y2

NatronEngine.RectD.**top**()

**Return type**
double

Returns y2, that is the position of the top edge of the rectangle. y2 is considered to be the first element outside the rectangle.

NatronEngine.RectD.**translate**(*dx*, *dy*)

**Parameters**

- **dx** – double
- **dy** – double

Moves all edges of the rectangle by *dx*, *dy*, that is:

```
x1 += dx;
y1 += dy;
x2 += dx;
y2 += dy;
```

NatronEngine.RectD.**width**()

**Return type**
double

Returns the width of the rectangle, that is x2 - x1.

### RectI

### Synopsis

A rectangle defined with integer precision. See *detailed* description below

### Functions

- def *bottom* ()
- def *clear* ()
- def *contains* (otherRect)
- def *height* ()
- def *intersect* (otherRect)
- def *intersects* (otherRect)
- def *isInfinite* ()
- def *isNull* ()
- def *left* ()
- def *merge* (otherRect)
- def *right* ()
- def *set* (x1,y1,x2,y2)
- def *set_bottom* (y1)
- def *set_left* (x1)
- def *set_right* (x2)
- def *set_top* (y2)
- def *top* ()
- def *translate* (dx,dy)
- def *width* ()

### Detailed Description

A rectangle where x1 < x2 and y1 < y2 such as width() == (x2 - x1) && height() == (y2 - y1) (x1,y1) is are the coordinates of the bottom left corner of the rectangle. The last element valid in the y dimension is y2 - 1 and the last valid in the x dimension is x2 - 1. x1,x2,y1 and y2 are with integer precision.

### Member functions description

`NatronEngine.RectI.`**`bottom`**`()`

**Return type**
`int`

Returns the bottom edge, that is the

`NatronEngine.RectI.`**`clear`**`()`

Same as *set* (0,0,0,0)

NatronEngine.RectI.**contains**(*otherRect*)

**Parameters**
**otherRect** – RectI

**Return type**
bool

Returns True if *otherRect* is contained in or equals this rectangle, that is if:

```
otherRect.x1 >= x1 and
otherRect.y1 >= y1 and
otherRect.x2 <= x2 and
otherRect.y2 <= y2
```

NatronEngine.RectI.**height**()

**Return type**
int

Returns the height of the rectangle, that is: y2 - y1

NatronEngine.RectI.**intersect**(*otherRect*)

**Parameters**
**otherRect** – RectI

**Return type**
RectI

Returns the intersection between this rectangle and *otherRect*. If the intersection is empty, the return value will have the isNull() function return True.

NatronEngine.RectI.**intersects**(*otherRect*)

**Parameters**
**otherRect** – RectI

**Return type**
bool

Returns True if rectangle and *otherRect* intersect.

NatronEngine.RectI.**isInfinite**()

**Return type**
bool

Returns True if this rectangle is considered to cover an infinite area. Some generator effects use this to indicate that they can potentially generate an image of infinite size.

NatronEngine.RectI.**isNull**()

**Return type**
bool

Returns true if x2 <= x1 or y2 <= y1

NatronEngine.RectI.**left**()

**Return type**
int

Returns x1, that is the position of the left edge of the rectangle.

NatronEngine.RectI.**merge**(*otherRect*)

**Parameters**
**otherRect** – RectI

Unions this rectangle with *otherRect*. In other words, this rectangle becomes the bounding box of this rectangle and *otherRect*.

NatronEngine.RectI.**left**()

**Return type**
int

Returns x1, that is the position of the left edge of the rectangle.

NatronEngine.RectI.**right**()

**Return type**
int

Returns x2, that is the position of the right edge of the rectangle. x2 is considered to be the first element outside the rectangle.

NatronEngine.RectI.**set**(*x1*, *y1*, *x2*, *y2*)

**Parameters**

- **x1** – int
- **y1** – int
- **x2** – int
- **y2** – int

Set the x1, y1, x2, y2 coordinates of this rectangle.

NatronEngine.RectI.**set_bottom**(*y1*)

**Parameters**
**y1** – int

Set y1

NatronEngine.RectI.**set_left**(*x1*)

**Parameters**
**y1** – int

Set x1

NatronEngine.RectI.**set_right**(*x2*)

**Parameters**
**x2** – int

Set x2

NatronEngine.RectI.**set_top**(*y2*)

**Parameters**
**y2** – int

Set y2

NatronEngine.RectI.**top**()

**Return type**
int

Returns y2, that is the position of the top edge of the rectangle. y2 is considered to be the first element outside the rectangle.

`NatronEngine.RectI.`**`translate`**`(`*dx*, *dy*`)`

**Parameters**

- **dx** – `int`
- **dy** – `int`

Moves all edges of the rectangle by *dx*, *dy*, that is:

```
x1 += dx;
y1 += dy;
x2 += dx;
y2 += dy;
```

`NatronEngine.RectI.`**`width`**`()`

**Return type**
`int`

Returns the width of the rectangle, that is x2 - x1.

## Roto

## Synopsis

This class encapsulates all things related to the roto node. See detailed *description* below.

## Functions

- def *createBezier* (x, y, time)
- def *createEllipse* (x, y, diameter, fromCenter, time)
- def *createLayer* ()
- def *createRectangle* (x, y, size, time)
- def *getBaseLayer* ()
- def *getItemByName* (name)

## Detailed Description

The Roto class is uses for now in Natron exclusively by the roto node, but its functionalities could be re-used for other nodes as well. Its purpose is to manage all layers and shapes. You can create new shapes with the *createBezier(x,y,time)*, *createEllipse(x,y,diameter,fromCenter,time)* and *createRectangle(x,y,size,time)* functions.

To create a new *Layer* you can use the *createLayer()* function.

As for other *auto-declared* variables, all shapes in the Roto objects can be accessed by their script-name, e.g.:

Roto1.roto.Layer1.Bezier1

### Member functions description

NatronEngine.Roto.**createBezier**(*x*, *y*, *time*)

**Parameters**

- **x** – float
- **y** – float
- **time** – int

**Return type**
BezierCurve

Creates a new *BezierCurve* with one control point at position (x,y) and a keyframe at the given *time*.

NatronEngine.Roto.**createEllipse**(*x*, *y*, *diameter*, *fromCenter*, *time*)

**Parameters**

- **x** – float
- **y** – float
- **diameter** – float
- **fromCenter** – bool
- **time** – int

**Return type**
BezierCurve

Creates a new ellipse. This is a convenience function that uses *createBezier(x,y,time)* to create a new *BezierCurve* and then adds 3 other control points to the Bezier so that it forms an ellipse of the given *diameter*. A new keyframe will be set at the given *time*. If *fromCenter* is true, then (x,y) is understood to be the coordinates of the center of the ellipse, otherwise (x,y) is understood to be the position of the top-left point of the smallest enclosing rectangle of the ellipse.

NatronEngine.Roto.**createLayer**()

**Return type**
Layer

Creates a new layer.

NatronEngine.Roto.**createRectangle**(*x*, *y*, *size*, *time*)

**Parameters**

- **x** – float
- **y** – float
- **size** – float
- **time** – int

**Return type**
BezierCurve

Creates a new rectangle. This is a convenience function that uses *createBezier(x,y,time)* to create a new *BezierCurve* and then adds 3 other control points to the Bezier so that it forms a rectangle of the given *size* on each of its sides. A new keyframe will be set at the given *time*.

NatronEngine.Roto.**getBaseLayer**()

**Return type**
Layer

Convenience function to access to the base *Layer*. Note that all shapes should belong to a *Layer*, the base layer being the top-level parent of all the hierarchy.

`NatronEngine.Roto.`**`getItemByName`**`(`*name*`)`

**Parameters**
**name** – `str`

**Return type**
`ItemBase`

Returns an item by its *script-name*. See *this section* for the details of what is the *script-name* of an item. E.g:

```
app1.Roto1.roto.Layer1.Bezier1 = app1.Roto1.roto.getItemByName("Bezier1")
```

## StringParam

**Inherits** *StringParamBase*

## Synopsis

This parameter is used to contain a string. See *here* for more details.

## Functions

- def *setType* (type)

## Detailed Description

A StringParam can have several forms on the user interface, depending on its type

Here are the different types of string parameters:

Fig. 1: A basic string that can be edited by the user

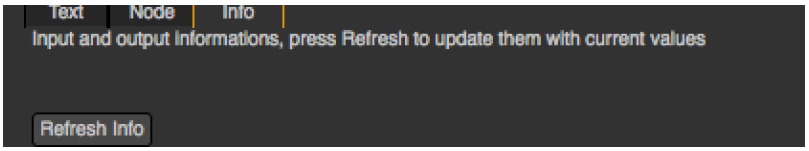



Fig. 2: A non animating label string that the user cannot edit

Fig. 3: A multi-line string that the user can edit and animate

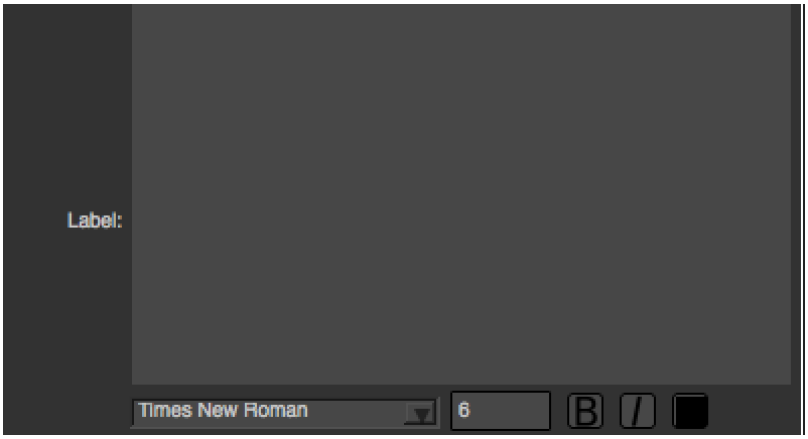



Fig. 4: A multi-line string with rich text support with a subset of html

### Member functions description

`NatronEngine.StringParam.`**`setType`**`(`*type*`)`

**Parameters**
**type** – `NatronEngine.StringParam.TypeEnum`

Set the type of the StringParam. This should be called right away after creation time.

**Warning:** Once called, you should call `refreshUserParamsGUI()` to update the user interface.

## StringParamBase

**Inherits** *AnimatedParam*

**Inherited by:** *PathParam*, *OutputFileParam*, *FileParam*, *StringParam*

### Synopsis

This is the base-class for all parameters holding a string. See *here* for more details.

### Functions

- def *get* ()
- def *get* (frame)
- def *getDefaultValue* ()
- def *getValue* ()
- def *getValueAtTime* (time)
- def *restoreDefaultValue* ()
- def *set* (x)
- def *set* (x, frame)
- def *setDefaultValue* (value)
- def *setValue* (value)

- def *setValueAtTime* (value, time)

### Detailed Description

A string parameter contains internally a string which can change over time. Much like keyframes for value parameters (like *IntParam* or *DoubleParam*) keyframes can be set on string params, though the interpolation will remain constant always.

### Member functions description

NatronEngine.StringParamBase.**get**()

**Return type**
str

Get the value of the parameter at the current timeline's time

NatronEngine.StringParamBase.**get**(*frame*)

**Parameters**
**frame** – float

**Return type**
str

Get the value of the parameter at the given *frame*.

NatronEngine.StringParamBase.**getDefaultValue**()

**Return type**
str

Get the default value for this parameter.

NatronEngine.StringParamBase.**getValue**()

**Return type**
str

Same as *get()*

NatronEngine.StringParamBase.**getValueAtTime**(*time*)

**Parameters**
**time** – float

**Return type**
str

Same as *get(frame)*

NatronEngine.StringParamBase.**restoreDefaultValue**()

Removes all animation and expression set on this parameter and set the value to be the default value.

NatronEngine.StringParamBase.**set**(*x*)

**Parameters**
**x** – str

Set the value of this parameter to be *x*. If this parameter is animated (see *getIsAnimated(dimension)* then this function will automatically add a keyframe at the timeline's current time.

NatronEngine.StringParamBase.**set**(*x*, *frame*)

**Parameters**

- **x** – str
- **frame** – float

Set a new keyframe on the parameter with the value *x* at the given *frame*.

NatronEngine.StringParamBase.**setDefaultValue**(*value*)

**Parameters**
**value** – str

Set the default *value* for this parameter.

NatronEngine.StringParamBase.**setValue**(*value*)

**Parameters**
**value** – str

Same as *set*

NatronEngine.StringParamBase.**setValueAtTime**(*value*, *time*)

**Parameters**

- **value** – str
- **time** – float

Same as set(time)<NatronEngine.StringParamBase.set()

## Track

## Synopsis

This class represents one track marker as visible in the tracker node or on the viewer. It is available to Python to easily retrieve the tracked data. See *detailed* description below.

## Functions

- def *setScriptName* (scriptName)
- def *getScriptName* ()
- def *getParam* (paramScriptName)
- def *getParams* ()
- def *reset* ()

## Detailed Description

The track is internally represented by multiple *parameters* which holds animation curve for various data, such as: the track center, the pattern 4 corners, the error score, the search-window, etc… Each of them can be retrieved with the *getParam(scriptName)* function.

Here is an example briefly explaining how to retrieve the tracking data for a track:

```
myTrack = app.Tracker1.tracker.track1

keyframes = []

# get the number of keys for the X dimension only and try match the Y keyframes
nKeys = myTrack.centerPoint.getNumKeys(0)
for k in range(0,nKeys):

    # getKeyTime returns a tuple with a boolean value indicating if it succeeded and
    # the keyframe time

    gotXKeyTuple = myTrack.centerPoint.getKeyTime(k, 0)
    frame = gotXKeyTuple[1]

    # Only consider keyframes which have an X and Y value
    # If Y does not have a keyframe at this frame, ignore the keyframe
    # getKeyIndex returns a value >=0 if there is a keyframe
    yKeyIndex = myTrack.centerPoint.getKeyIndex(frame, 1)

    if yKeyIndex == -1:
        continue

    # Note that even if the x curve or y curve didn't have a keyframe we
    # could still call getValueAtTime but the value would be interpolated by
    # Natron with surrounding keyframes, which is not what we want.

    x = myTrack.centerPoint.getValueAtTime(frame, 0)
    y = myTrack.centerPoint.getValueAtTime(frame, 1)

    keyframes.append((x,y))

print keyframes
```

### Member functions description

NatronEngine.Track.**setScriptName**(*scriptName*)

**Parameters**
**scriptName** – str

Set the script-name of the track. It will then be accessible via a Python script as such:

```
Tracker1.tracker.MyTrackScriptName
```

NatronEngine.Track.**getScriptName**()

**Return type**
str

Get the script-name of the track

NatronEngine.Track.**getParam**(*paramScriptName*)

**Return type**
Param

Get the Param with the given *paramScriptName*. The parameter can also be retrieved as an attribute of the *tracker* object like this:

```
Tracker1.tracker.center
```

NatronEngine.Track.**getParams**()

**Return type**
Param

Returns a list of all the Param for this track.

NatronEngine.Track.**reset**()

Resets the track completely removing any animation on all parameters and any keyframe on the pattern.

### Tracker

### Synopsis

This class is a container for *tracks* See *detailed* description below.

### Functions

- def *createTrack* ()
- def *getTrackByName* (scriptName)
- def *getAllTracks* ()
- def *getSelectedTracks* ()
- def *startTracking* (tracks, start, end, forward)
- def *stopTracking* ()

### Detailed Description

The Tracker is a special class attached to *effects* that needs tracking capabilities. It contains all *tracks* for this node and also allows one to start and stop tracking from a Python script.

### Member functions description

NatronEngine.Tracker.**createTrack**()

**Return type**
Track

Creates a new track in the tracker with default values

NatronEngine.Tracker.**getTrackByName**(*scriptName*)

**Return type**
Track

Returns a track matching the given *scriptName* if any

NatronEngine.Tracker.**getAllTracks**()

**Return type**
sequence

Returns all the tracks in this Tracker.

NatronEngine.Tracker.**getSelectedTracks**()

**Return type**
sequence

Returns the user selected tracks

NatronEngine.Tracker.**startTracking**(*tracks*, *start*, *end*, *forward*)

Start tracking the given *tracks* from *start* frame to *end* frame (*end* frame will not be tracked) in the direction given by *forward*. If *forward* is **False**, then *end* is expected to be lesser than *start*.

NatronEngine.Tracker.**stopTracking**()

Stop any ongoing tracking for this Tracker.

### UserParamHolder

**Inherited by** : *Effect*, *PyModalDialog*

### Synopsis

This is an abstract class that serves as a base interface for all objects that can hold user parameters. See *Detailed Description*

### Functions

- def *createBooleanParam* (name, label)
- def *createButtonParam* (name, label)
- def *createChoiceParam* (name, label)
- def *createColorParam* (name, label, useAlpha)
- def *createDouble2DParam* (name, label)
- def *createDouble3DParam* (name, label)
- def *createDoubleParam* (name, label)
- def *createFileParam* (name, label)
- def *createGroupParam* (name, label)
- def *createInt2DParam* (name, label)
- def *createInt3DParam* (name, label)
- def *createIntParam* (name, label)
- def *createOutputFileParam* (name, label)
- def *createPageParam* (name, label)
- def *createParametricParam* (name, label, nbCurves)
- def *createPathParam* (name, label)
- def *createStringParam* (name, label)
- def *removeParam* (param)
- def *refreshUserParamsGUI* ()

### Detailed Description

To create a new user *parameter* on the object, use one of the **createXParam** function. To remove a user parameter created, use the *removeParam(param)* function. Note that this function can only be used to remove **user parameters** and cannot be used to remove parameters that were defined by the OpenFX plug-in.

Once you have made modifications to the user parameters, you must call the *refreshUserParamsGUI()* function to notify the GUI, otherwise no change will appear on the GUI.

### Member functions description

NatronEngine.UserParamHolder.**createBooleanParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
BooleanParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type boolean which will appear in the user interface as a checkbox.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createButtonParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
ButtonParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type button which will appear as a push button. Use the onParamChanged callback of the Effect to handle user clicks.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createChoiceParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
ChoiceParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type choice which will appear as a dropdown combobox.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createColorParam**(*name*, *label*, *useAlpha*)

**Parameters**

- **name** – str
- **label** – str
- **useAlpha** – bool

**Return type**
ColorParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type color.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createDouble2DParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
Double2DParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type double with 2 dimensions.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createDouble3DParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
Double3DParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type double with 3 dimensions.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createDoubleParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
DoubleParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type double with single dimension. A double is similar to a floating point value.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createFileParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
FileParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type double with 2 dimensions.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createGroupParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
GroupParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type group. It can contain other children parameters and can be expanded or folded.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createInt2DParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
Int2DParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type integer with 2 dimensions.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createInt3DParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
Int3DParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type integer with 3 dimensions.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createIntParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
IntParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type integer with a single dimension.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createOutputFileParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
OutputFileParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type string dedicated to specify paths to output files.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createPageParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
PageParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type page. A page is a tab within the settings panel of the node.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createParametricParam**(*name*, *label*, *nbCurves*)

**Parameters**

- **name** – str
- **label** – str
- **nbCurves** – int

**Return type**
ParametricParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type parametric. A parametric parameter is what can be found in the ColorLookup node or in the Ranges tab of the ColorCorrect node.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createPathParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
PathParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type string. This parameter is dedicated to specify path to single or multiple directories.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**createStringParam**(*name*, *label*)

**Parameters**

- **name** – str
- **label** – str

**Return type**
StringParam

Creates a new user *parameter* with the given *name* and *label*. See *here* for an explanation of the difference between the *name* and *label*. This function will return a new parameter of type string.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**removeParam**(*param*)

**Parameters**
**param** – Param

**Return type**
bool

Removes the given *param* from the parameters of this Effect. This function works only if *param* is a user parameter and does nothing otherwise. This function returns True upon success and False otherwise.

**Warning:** After calling this function you should call *refreshUserParamsGUI()* to refresh the user interface. The refreshing is done in a separate function because it may be expensive and thus allows you to make multiple changes to user parameters at once while keeping the user interface responsive.

NatronEngine.UserParamHolder.**refreshUserParamsGUI**()

This function must be called after new user parameter were created or removed. This will re-create the user interface for the parameters and can be expensive.

### 3.1.2 NatronGui

#### Detailed Description

Here are listed all classes being part of NatronEngine module. This module is loaded by Natron natively in GUI mode only. In that case, access is granted to these classes in your scripts without importing anything. Scripts that want to operate both in command line background mode and in GUI mode should poll the isBackground() function on the **natron** object before calling functions dependent on the module *NatronGui*. E.g:

```
if not NatronEngine.natron.isBackground():
    # do GUI only stuff here
```

## GuiApp

**Inherits** *App*

## Synopsis

This class is used for GUI application instances. See *detailed* description...

## Functions

- def *createModalDialog* ()
- def *getFilenameDialog* (filters[, location=None])
- def *getSequenceDialog* (filters[, location=None])
- def *getDirectoryDialog* ([location=None])
- def *getRGBColorDialog* ()
- def *getTabWidget* (scriptName)
- def *getSelectedNodes* ([group=None])
- def *getViewer* (scriptName)
- def *getUserPanel* (scriptName)
- def *moveTab* (tabScriptName,pane)
- def *saveFilenameDialog* (filters[, location=None])
- def *saveSequenceDialog* (filters[, location=None])
- def *selectNode* (node,clearPreviousSelection)
- def *deselectNode* (node)
- def *setSelection* (nodes)
- def *selectAllNodes* ([group=None])
- def *copySelectedNodes* ([group=None])
- def *pasteNodes* ([group=None])
- def *clearSelection* ([group=None])
- def *registerPythonPanel* (panel,pythonFunction)
- def *unregisterPythonPanel* (panel)
- def `renderBlocking` (effect,firstFrame,lastFrame,frameStep)
- def `renderBlocking` (tasks)

### Detailed Description

See *App* for the documentation of base functionalities of this class.

To create a new *modal dialog* , use the `createModalDialog()` function.

Several functions are made available to pop dialogs to ask the user for filename(s) or colors. See `getFilenameDialog(filters,location)` and `getRGBColorDialog()`.

To create a new custom python panel, there are several ways to do it:

- Sub-class the *PyPanel* class and make your own PySide widget
- Create a *PyPanel* object and add controls using user parameters (as done for modal dialogs)

Once created, you can register the panel in the project so that it gets saved into the layout by calling `registerPythonPanel(panel,pythonFunction)`

### Member functions description

NatronGui.GuiApp.**createModalDialog**()

**Return type**
*PyModalDialog*

Creates a *modal dialog* : the control will not be returned to the user until the dialog is not closed. Once the dialog is created, you can enrich it with *parameters* or even raw PySide Qt widgets. To show the dialog call the function `exec()` on the dialog.

NatronGui.GuiApp.**getFilenameDialog**(*filters*[, *location=None* ])

**Parameters**

- **filters** – sequence
- **location** – str

**Return type**
str

Opens-up a file dialog to ask the user for a single filename which already exists.

*filters* is a list of file extensions that should be displayed in the file dialog.

*location* is the initial location the dialog should display, unless it is empty in which case the dialog will display the last location that was opened previously by a dialog.

NatronGui.GuiApp.**getSequenceDialog**(*filters*[, *location=None* ])

**Parameters**

- **filters** – sequence
- **location** – str

**Return type**
str

Same as `getFilenameDialog(filters,location)` but the dialog will accept sequence of files.

NatronGui.GuiApp.**getDirectoryDialog**([*location=None* ])

**Parameters**
**location** – str

**Return type**
str

Same as `getFilenameDialog(filters,location)` but the dialog will only accept directories as a result.

NatronGui.GuiApp.**saveFilenameDialog**(*filters*[, *location=None* ])

**Parameters**

- **filters** – sequence
- **location** – str

**Return type**
str

Opens-up a file dialog to ask the user for a single filename. If the file already exists, the user will be warned about potential overriding of the file.

*filters* is a list of file extensions that should be displayed in the file dialog.

*location* is the initial location the dialog should display, unless it is empty in which case the dialog will display the last location that was opened previously by a dialog.

NatronGui.GuiApp.**saveSequenceDialog**(*filters*[, *location=None* ])

**Parameters**

- **filters** – sequence
- **location** – str

**Return type**
str

Same as *saveFilenameDialog(filters,location)* but the dialog will accept sequence of files.

NatronGui.GuiApp.**getRGBColorDialog**()

**Return type**
*ColorTuple*

Opens-up a color dialog to ask the user for an RGB color.

NatronGui.GuiApp.**getTabWidget**(*scriptName*)

**Parameters**
**scriptName** – str

**Return type**
PyTabWidget

Returns the tab-widget with the given *scriptName*. The *scriptName* of a tab-widget can be found in the user interface when hovering with the mouse the "Manage layout" button (in the top left-hand corner of the pane)

NatronGui.GuiApp.**moveTab**(*tabScriptName*, *pane*)

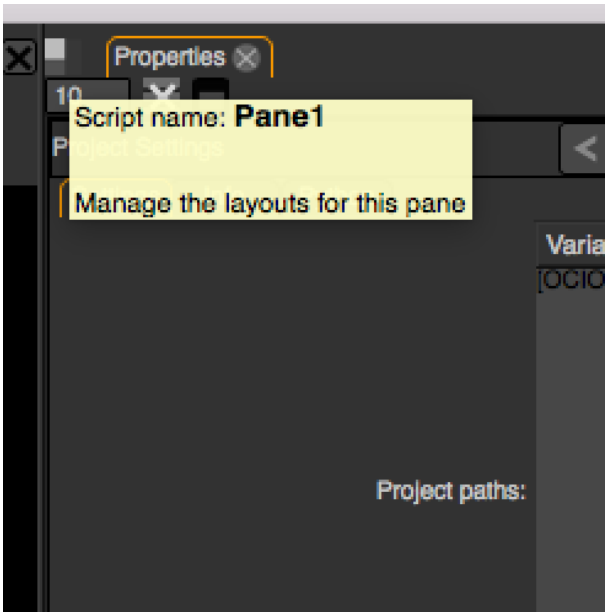
**Parameters**

- **tabScriptName** – str
- **pane** – PyTabWidget

**Return type**
bool

Attempts to move the tab with the given *tabScriptName* into the given *pane* and make it current in the *pane*. This function returns True upon success or False otherwise.

**Warning:** Moving tabs that are not registered to the application via *registerPythonPanel(panel, pythonFunction)* will not work.




NatronGui.GuiApp.**registerPythonPanel**(*panel*, *pythonFunction*)

**Parameters**

- **panel** – PyPanel
- **scriptName** – str

Registers the *given* panel into the project. When registered, the panel will be saved into the layout for the current project and a new entry in the "Panes" sub-menu of the "Manage layouts" button (in the top left-hand corner of each tab widget) will appear for this panel. *pythonFunction* is the name of a python-defined function that takes no argument that should be used to re-create the panel.

NatronGui.GuiApp.**unregisterPythonPanel**(*panel*)

**Parameters**
**panel** – PyPanel

Unregisters a previously registered panel.

NatronGui.GuiApp.**getSelectedNodes**([*group* = *None* ])

**Return type**
sequence

Returns a sequence of *nodes* currently selected in the given *group*. You can pass the *app* object to get the top-level NodeGraph. If passing None, the last user-selected NodeGraph will be used:

```
topLevelSelection = app.getSelectedNodes()

group = app.createNode("fr.inria.built-in.Group")

groupSelection = app.getSelectedNodes(group)
```

NatronGui.GuiApp.**getViewer**(*scriptName*)

**Parameters**
**scriptName** – str

Returns the viewer with the given *scriptName* if one can be found.

NatronGui.GuiApp.**getUserPanel**(*scriptName*)

**Parameters**
**scriptName** – str

Returns a user panel matching the given *scriptName* if there is any.

NatronGui.GuiApp.**selectNode**(*node*, *clearPreviousSelection*)

**Parameters**

- **node** – Effect
- **clearPreviousSelection** – bool

Select the given *node* in its containing nodegraph. If *clearPreviousSelection* is set to *True*, all the current selection will be wiped prior to selecting the *node*; otherwise the *node* will just be added to the selection.

NatronGui.GuiApp.**deselectNode**(*node*)

**Parameters**
**node** – Effect

Deselect the given *node* in its containing nodegraph. If the *node* is not selected, this function does nothing.

NatronGui.GuiApp.**setSelection**(*nodes*)

**Parameters**
**nodes** – sequence

Set all the given *nodes* selected in the nodegraph containing them and wipe any current selection.

---

**Note:** All nodes must be part of the same nodegraph (group), otherwise this function will fail.

---

NatronGui.GuiApp.**selectAllNodes**([*group=None* ])

**Parameters**
**group** – Group

Select all nodes in the given *group*. You can pass the *app* object to get the top-level NodeGraph. If passing None, the last user-selected NodeGraph will be used.

NatronGui.GuiApp.**copySelectedNodes**([*group=None* ])

**Parameters**
**group** – Group

Copy all nodes in the given *group*. You can pass the *app* object to get the top-level NodeGraph. If passing None, the last user-selected NodeGraph will be used.

NatronGui.GuiApp.**pasteNodes**([*group=None* ])

**Parameters**
**group** – Group

Paste copied nodes in the given *group*. You can pass the *app* object to get the top-level NodeGraph. If passing None, the last user-selected NodeGraph will be used.

NatronGui.GuiApp.**clearSelection**([*group=None* ])

Wipe any current selection in the given *group*. You can pass the *app* object to get the top-level NodeGraph. If passing None, the last user-selected NodeGraph will be used.

NatronGui.GuiApp.**renderBlocking**(*effect*, *firstFrame*, *lastFrame*, *frameStep*)

**Parameters**

- **effect** – Effect
- **firstFrame** – int

- **lastFrame** – int
- **frameStep** – int

Starts rendering the given *effect* on the frame-range defined by [*firstFrame*,*lastFrame*]. The *frameStep* parameter indicates how many frames the timeline should step after rendering each frame. The value must be greater or equal to 1. The *frameStep* parameter is optional and if not given will default to the value of the **Frame Increment** parameter in the Write node.

For instance:

```
render(effect,1,10,2)
```

Would render the frames 1,3,5,7,9

This is a blocking function. A blocking render means that this function returns only when the render finishes (from failure or success).

This function should only be used to render with a Write node or DiskCache node.

NatronGui.GuiApp.**renderBlocking**(*tasks*)

**Parameters**
**tasks** – sequence

This function takes a sequence of tuples of the form *(effect,firstFrame,lastFrame[,frameStep])* The *frameStep* is optional in the tuple and if not set will default to the value of the **Frame Increment** parameter in the Write node.

This is an overloaded function. Same as `render(effect,firstFrame,lastFrame,frameStep)` but all *tasks* will be rendered concurrently.

This function is called when rendering a script in background mode with multiple writers.

This is a blocking call.

## PyGuiApplication

**Inherits** *PyCoreApplication*

## Synopsis

See *PyCoreApplication* for a detailed explanation of the purpose of this object. This class is only used when Natron is run in GUI mode (with user interface). It gives you access to more GUI functionalities via the *GuiApp* class.

## Functions

- def *addMenuCommand* (grouping,function)
- def *addMenuCommand* (grouping,function,key,modifiers)
- def *getGuiInstance* (idx)
- def *informationDialog* (title,message)
- def *warningDialog* (title,message)
- def *errorDialog* (title,message)
- def *questionDialog* (title,question)

### Member functions description

**class** NatronGui.**PyGuiApplication**

See PyCoreApplication()

NatronGui.PyGuiApplication.**addMenuCommand**(*grouping*, *function*)

**Parameters**

- **grouping** – str
- **function** – str

Adds a new menu entry in the menubar of Natron. This should be used **exclusively** in the *initGui.py* initialisation script.

The *grouping* is a string indicating a specific menu entry where each submenu is separated from its parent menu with a /:

```
File/Do something special

MyStudio/Scripts/Our special trick
```

The *function* is the name of a python defined function.

**Warning:** If called anywhere but from the *initGui.py* script, this function will fail to dynamically add a new menu entry.

Example:

```
def printLala():
    print("Lala")

natron.addMenuCommand("Inria/Scripts/Print lala script","printLala")
```

This registers in the menu *Inria–>Scripts* an entry named *Print lala script* which will print *Lala* to the Script Editor when triggered.

NatronGui.PyGuiApplication.**addMenuCommand**(*grouping*, *function*, *key*, *modifiers*)

**Parameters**

- **grouping** – str
- **function** – str
- **key** – PySide.QtCore.Qt.Key
- **modifiers** – PySide.QtCore.Qt.KeyboardModifiers

Same as *addMenuCommand(grouping,function)* excepts that it accepts a default shortcut for the action. See PySide documentation for possible keys and modifiers.

The user will always be able to modify the shortcut from the built-in shortcut editor of Natron anyway.

NatronGui.PyGuiApplication.**getGuiInstance**(*idx*)

**Parameters**
**idx** – int

**Return type**
GuiApp

Same as `getInstance(idx)` but returns instead an instance of a GUI project.

Basically you should never call this function as Natron pre-declares all opened projects with the following variables: *app1* for the first opened project, *app2* for the second, and so on...

`NatronGui.PyGuiApplication.`**`informationDialog`**`(`*title*, *message*`)`

**Parameters**

- **`title`** – `str`
- **`message`** – `str`

Shows a modal information dialog to the user with the given window *title* and containing the given *message*.

`NatronGui.PyGuiApplication.`**`warningDialog`**`(`*title*, *message*`)`

**Parameters**

- **`title`** – `str`
- **`message`** – `str`

Shows a modal warning dialog to the user with the given window *title* and containing the given *message*.

`NatronGui.PyGuiApplication.`**`errorDialog`**`(`*title*, *message*`)`

**Parameters**

- **`title`** – `str`
- **`message`** – `str`

Shows a modal error dialog to the user with the given window *title* and containing the given *message*.

`NatronGui.PyGuiApplication.`**`questionDialog`**`(`*title*, *message*`)`

**Parameters**

- **`title`** – `str`
- **`message`** – `str`

**Return type**
`NatronEngine.StandardButtonEnum`

Shows a modal question dialog to the user with the given window *title* and containing the given *message*. The dialog will be a "Yes" "No" dialog, and you can compare the result to the `NatronEngine.StandardButtonEnum` members.

### PyModalDialog

**Inherits** QDialog *UserParamHolder*

### Synopsis

A modal dialog to ask information to the user or to warn about something. See *detailed* description...

### Functions

- def *addWidget* (widget)
- def *getParam* (scriptName)
- def *insertWidget* (index,widget)
- def *setParamChangedCallback* (callback)

### Detailed Description

The modal dialog is a way to ask the user for data or to inform him/her about something going on. A modal window means that control will not be returned to the user (i.e. no event will be processed) until the user closed the dialog.

If you are looking for a simple way to just ask a question or report an error, warning or even just a miscenalleous information, use the *informationDialog(title,message)* function.

To create a new *PyModalDialog*, just use the *createModalDialog()* function, e.g.:

# In the Script Editor

dialog = app1.createModalDialog()

To show the dialog to the user, use the `exec_()` function inherited from `QDialog`

```
dialog.exec_()
```

Note that once `exec_()` is called, no instruction will be executed until the user closed the dialog.

The modal dialog always has *OK* and *Cancel* buttons. To query which button the user pressed, inspect the return value of the `exec_()` call:

```
if dialog.exec_():
    #The user pressed OK
    ...
else:
    #The user pressed Cancel or Escape
```

### Adding user parameters:

You can start adding user parameters using all the `createXParam` functions inherited from the `NatronEngine.UserParamHolder` class.

Once all your parameters are created, create the GUI for them using the `refreshUserParamsGUI()` function:

```
myInteger = dialog.createIntParam("myInt","This is an integer very important")
myInteger.setAnimationEnabled(False)
myInteger.setAddNewLine(False)

#Create a boolean on the same line
myBoolean = dialog.createBooleanParam("myBool","Yet another important boolean")

dialog.refreshUserParamsGUI()

dialog.exec_()
```

You can then retrieve the value of a parameter once the dialog is finished using the *getParam(scriptName)* function:

```
if dialog.exec_():
    intValue = dialog.getParam("myInt").get()
    boolValue = dialog.getParam("myBool").get()
```

**Warning:** Unlike the *Effect* class, parameters on modal dialogs are not automatically declared by Natron, which means you cannot do stuff like *dialog.intValue*

### Member functions description

NatronGui.PyModalDialog.**addWidget**(*widget*)

**Parameters**
**widget** – QWidget

Append a QWidget inherited *widget* at the bottom of the dialog. This allows one to add custom GUI created directly using PySide that will be inserted **after** any custom parameter.

NatronGui.PyModalDialog.**getParam**(*scriptName*)

**Parameters**
**scriptName** – str

**Return type**
Param

Returns the user parameter with the given *scriptName* if it exists or *None* otherwise.

NatronGui.PyModalDialog.**insertWidget**(*index*, *widget*)

**Parameters**

- **index** – int
- **widget** – PySide.QtGui.QWidget

Inserts a QWidget inherited *widget* at the given *index* of the layout in the dialog. This allows one to add custom GUI created directly using PySide. The widget will always be inserted **after** any user parameter.

NatronGui.PyModalDialog.**setParamChangedCallback**(*callback*)

**Parameters**
**callback** – str

Registers the given Python *callback* to be called whenever a user parameter changed. The parameter *callback* is a string that should contain the name of a Python function.

The signature of the *callback* used on *PyModalDialog* is:

```
callback(paramName, app, userEdited)
```

- **paramName** indicating the *script-name* of the parameter which just had its value changed.
- **app** : This variable will be set so it points to the correct *application instance*.
- **userEdited** : This indicates whether or not the parameter change is due to user interaction (i.e: because the user changed the value by theirself) or due to another parameter changing the value of the parameter via a derivative of the `setValue(value)` function.

Example:

```
def myParamChangedCallback(paramName, app, userEdited):
    if paramName == "myInt":
        intValue = thisParam.get()
        if intValue > 0:
            myBoolean.setVisible(False)

dialog.setParamChangedCallback("myParamChangedCallback")
```

### PyPanel

**Inherits** :*QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>* *UserParamHolder*

### Synopsis

A custom PySide pane that can be docked into *PyTabWidget*. See *detailed* description...

### Functions

- def *PyPanel* (scriptName,label,useUserParameters,app)
- def *addWidget* (widget)
- def *getPanelLabel* ()
- def *getPanelScriptName* ()
- def *getParam* (scriptName)
- def *getParams* ()
- def *insertWidget* (index,widget)
- def *onUserDataChanged* ()
- def *setParamChangedCallback* (callback)
- def *save* ()
- def *setPanelLabel* (label)
- def *restore* (data)

### Detailed Description

The *PyPanel* class can be used to implement custom PySide widgets that can then be inserted as tabs into *tabwidgets* .

There are 2 possible usage of this class:

- Sub-class it and create your own GUI using PySide
- Use the API proposed by *PyPanel* to add custom user *parameters* as done for *PyModalDialog*.

### Sub-classing:

When sub-classing the *PyPanel* class, you should specify when calling the base class constructor that you do not want to use user parameters, as this might conflict with the layout that you will use:

```
class MyPanel(NatronGui.PyPanel):
    def __init__(scriptName,label,app):
        NatronGui.PyPanel.__init__(scriptName,label,False,app)
        ...
```

You're then free to use all features proposed by PySide in your class, including signal/slots See the following *example*.

### Using the PyPanel API:

You can start adding user parameters using all the `createXParam` functions inherited from the *UserParamHolder* class.

Once all your parameters are created, create the GUI for them using the `refreshUserParamsGUI()` function:

```
panel = NatronGui.PyPanel("fr.inria.mypanel","My Panel",True,app)
myInteger = panel.createIntParam("myInt","This is an integer very important")
myInteger.setAnimationEnabled(False)
myInteger.setAddNewLine(False)

#Create a boolean on the same line
myBoolean = panel.createBooleanParam("myBool","Yet another important boolean")

panel.refreshUserParamsGUI()
```

You can then retrieve the value of a parameter at any time using the *getParam(scriptName)* function:

```
intValue = panel.getParam("myInt").get()
boolValue = panel.getParam("myBool").get()
```

**Warning:** Unlike the *Effect* class, parameters on panels are not automatically declared by Natron, which means you cannot do stuff like *panel.intValue*

You can get notified when a parameter's value changed, by setting a callback using the *setParamChangedCallback(callback)* function that takes the name of a Python-defined function in parameters. The variable **thisParam** will be declared prior to calling the callback, referencing the parameter which just had its value changed.

### Managing the panel:

Once created, you must add your panel to a *PyTabWidget* so it can be visible. Use the *getTabWidget(scriptName)* function to get a particular pane and then use the *appendTab(tab)* function to add this panel to the pane.

**Warning:** Note that the lifetime of the widget will be by default the same as the project's GUI because *PyPanel* is *auto-declared* by Natron.

```
panel = NatronGui.PyPanel("fr.inria.mypanel","My Panel",True,app)
...
...
pane = app.getTabWidget("pane1")
pane.appendTab(panel)
app.mypanel = panel
```

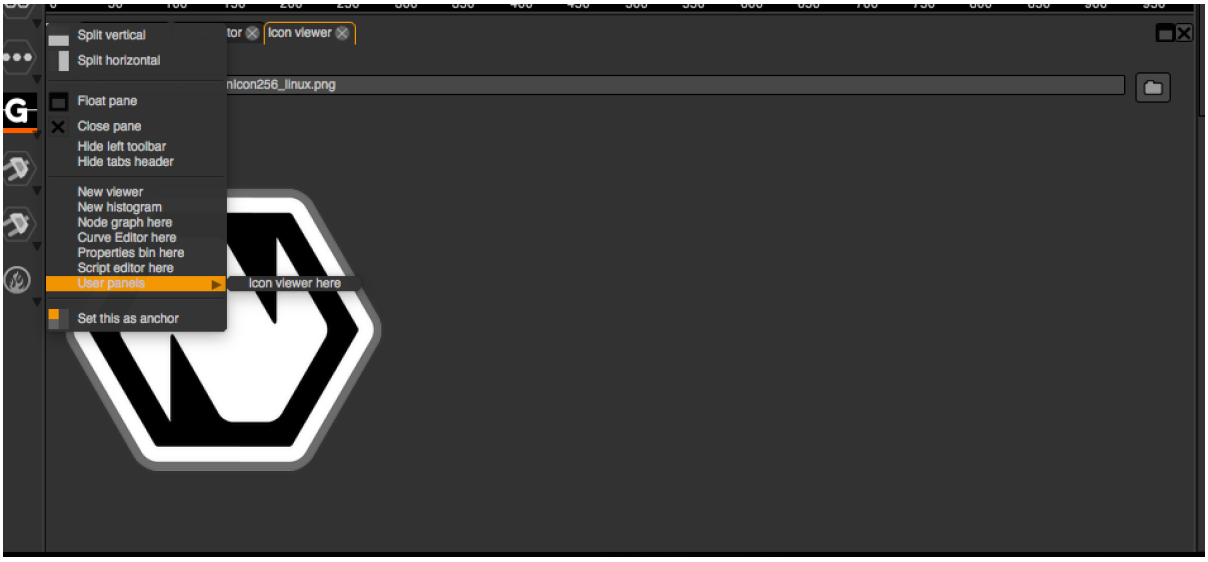
If you want the panel to persist in the project so that it gets recreated and placed at its original position when the user loads the project, you must use the `registerPythonPanel(panel,function)` function.

Note that the *function* parameter is the **name** of a Python-defined function that takes no parameter used to create the widget, e.g.:

**def createMyPanel():**
panel = NatronGui.PyPanel("MyPanel",True,app) ... #Make it live after the scope of the function app.mypanel = panel

app.registerPythonPanel(app.mypanel,"createMyPanel")

This function will also add a custom menu entry to the "Manage layout" button (located in the top-left hand corner of every pane) which the user can trigger to move the custom pane on the selected pane.




### Saving and restoring state:

When the panel is registered in the project using the *registerPythonPanel(panel,function)* function, you may want to also save the state of your widgets and/or special values.

To do so, you must sub-class `PyPanel` and implement the *save()* and *restore(data)* functions.

---

**Note:** User parameters, if used, will be automatically saved and restored, you don't have to save it yourself. Hence if the panel is only composed of user parameters that you want to save, you do not need to sub-class PyPanel as it will be done automatically for you.

---

The function *save()* should return a `string` containing the serialization of your custom data.

The function *restore(data)* will be called upon loading of a project containing an instance of your panel. You should then restore the state of the panel from your custom serialized data.

Note that the auto-save of Natron occurs in a separate thread and for this reason it cannot call directly your *save()* function because it might create a race condition if the user is actively modifying the user interface using the main-thread.

To overcome this, Natron has an hidden thread-safe way to recover the data you have serialized using the *save()* function. The downside is that you have to call the *onUserDataChanged()* function whenever a value that you want to be persistent has changed (unless this is a user parameter in which case you do not need to call it).

**Warning:** If you do not call *onUserDataChanged()*, the *save()* function will never be called, and the data never serialized.

### Member functions description

NatronGui.PyPanel.**PyPanel**(*label*, *useUserParameters*, *app*)

**Parameters**

- **label** – str
- **useUserParameters** – bool
- **app** – GuiApp

Make a new PyPanel with the given *label* that will be used to display in the tab header. If *useUserParameters* is True then user parameters support will be activated, attempting to modify the underlying layout in these circumstances will result in undefined behaviour.

NatronGui.PyPanel.**addWidget**(*widget*)

**Parameters**
**widget** – *QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>*

Append a *QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>* inherited *widget* at the bottom of the dialog. This allows one to add custom GUI created directly using PySide that will be inserted **after** any custom parameter.

**Warning:** This function should be used exclusively when the widget was created using *useUserParameters = True*

NatronGui.PyPanel.**getParam**(*scriptName*)

**Parameters**
**scriptName** – str

**Return type**
Param

Returns the user parameter with the given *scriptName* if it exists or *None* otherwise.

**Warning:** This function should be used exclusively when the widget was created using *useUserParameters = True*

NatronGui.PyPanel.**getParams**()

**Return type**
sequence

Returns all the user parameters used by the panel.

**Warning:** This function should be used exclusively when the widget was created using *useUserParameters = True*

NatronGui.PyPanel.**insertWidget**(*index*, *widget*)

**Parameters**

- **index** – int
- **widget** – *QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>*

Inserts a *QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>* inherited *widget* at the given *index* of the layout in the dialog. This allows one to add custom GUI created directly using PySide. The widget will always be inserted **after** any user parameter.

**Warning:** This function should be used exclusively when the widget was created using *useUserParameters = True*

NatronGui.PyPanel.**setParamChangedCallback**(*callback*)

**Parameters**
**callback** – str

Registers the given Python *callback* to be called whenever a user parameter changed. The parameter *callback* is a string that should contain the name of a Python function.

The signature of the *callback* used on *PyModalDialog* is:

```
callback(paramName, app, userEdited)
```

- **paramName** indicating the *script-name* of the parameter which just had its value changed.
- **app** : This variable will be set so it points to the correct *application instance*.
- **userEdited** : This indicates whether or not the parameter change is due to user interaction (i.e: because the user changed the value by theirself) or due to another parameter changing the value of the parameter via a derivative of the `setValue(value)` function.

Example:

```
def myParamChangedCallback(paramName, app, userEdited):
    if paramName == "myInt":
        intValue = thisParam.get()
        if intValue > 0:
            myBoolean.setVisible(False)

panel.setParamChangedCallback("myParamChangedCallback")
```

**Warning:** This function should be used exclusively when the widget was created using *useUserParameters = True*

NatronGui.PyPanel.**setPanelLabel**(*label*)

**Parameters**
**callback** – str

Set the label of the panel as it will be displayed on the tab header of the *PyTabWidget*. This name should be unique.

NatronGui.PyPanel.**getPanelLabel**()

**Return type**
str

Get the label of the panel as displayed on the tab header of the *PyTabWidget*.

NatronGui.PyPanel.**getPanelScriptName**()

**Return type**
str

Get the script-name of the panel as used internally. This is a unique string identifying the tab in Natron.

NatronGui.PyPanel.**onUserDataChanged**()

Callback to be called whenever a parameter/value (that is not a user parameter) that you want to be saved has changed.

**Warning:** If you do not call *onUserDataChanged()*, the save()NatronGui.PyPanel.save() function will never be called, and the data never serialized.

**Warning:** This function should be used exclusively when the widget was created using *useUserParameters* = *True*

NatronGui.PyPanel.**save**()

**Return type**
str

**Warning:** You should overload this function in a derived class. The base version does nothing.

---

**Note:** User parameters, if used, will be automatically saved and restored, you don't have to save it yourself. Hence if the panel is only composed of user parameters that you want to save, you do not need to sub-class PyPanel as it will be done automatically for you.

---

Returns a string with the serialization of your custom data you need to be persistent.

NatronGui.PyPanel.**restore**(*data*)

**Parameters**
**data** – str

**Warning:** You should overload this function in a derived class. The base version does nothing.

This function should restore the state of your custom *PyPanel* using the custom *data* that you serialized. The *data* are exactly the return value that was returned from the *save()* function.

### PyTabWidget

### Synopsis

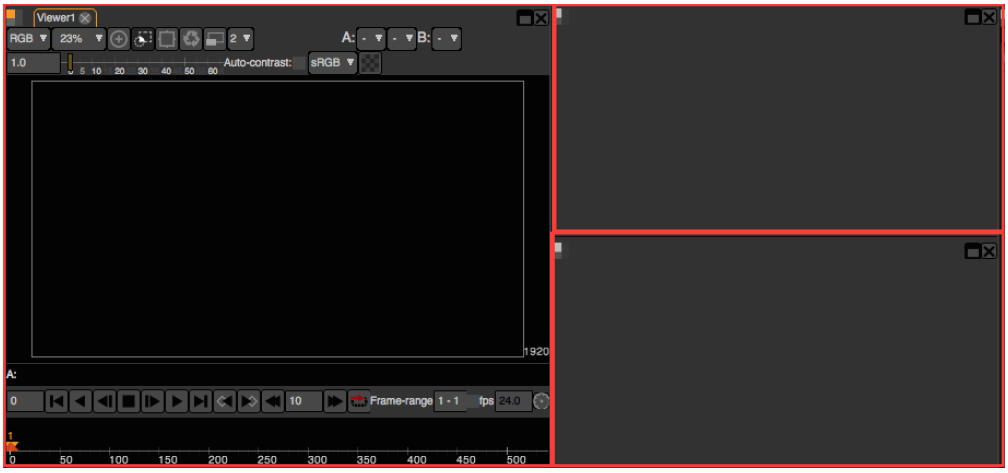
A PyTabWidget is one of the GUI pane onto which the user can dock tabs such as the NodeGraph, CurveEditor... See *detailed* description...

### Functions

- def *appendTab* (tab)
- def *closeCurrentTab* ()
- def *closeTab* (index)
- def *closePane* ()
- def *count* ()
- def *currentWidget* ()
- def *floatCurrentTab* ()
- def *floatPane* ()
- def *getCurrentIndex* ()
- def *getScriptName* ()
- def *getTabLabel* (index)
- def *insertTab* (index,tab)
- def *removeTab* (tab)
- def *removeTab* (index)
- def *setCurrentIndex* (index)
- def *setNextTabCurrent* ()
- def *splitHorizontally* ()
- def *splitVertically* ()

### Detailed Description

The *PyTabWidget* class is used to represent panes visible in the user interface:




On the screenshot above, each *PyTabWidget* is surrounded by a red box.

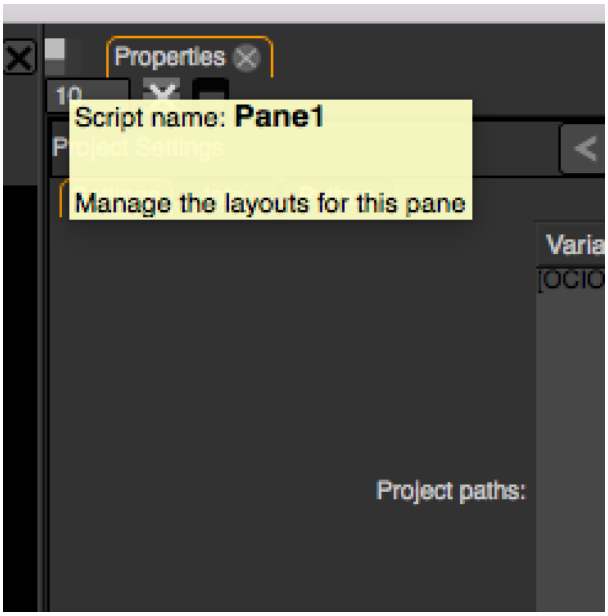
You cannot construct tab widgets on your own, you must call one of the *splitVertically()* or *splitHorizontally()* functions to make a new one based on another existing ones.

By default the GUI of Natron cannot have less than 1 tab widget active, hence you can always split it to make new panes.

To retrieve an existing *PyTabWidget* you can call the *getTabWidget(scriptName)* function of *GuiApp*.

pane1 = app.getTabWidget("Pane1")

Note that the script-name of a pane can be seen on the graphical user interface by hovering the mouse over the "Manage layout" button (in the top left hand corner of a pane).




### Managing tabs

To insert tabs in the TabWidget you can call either `appendTab(tab)` or `insertTab(index,tab)`.

**Warning:** Note that to insert a tab, it must be first removed from the tab into which it was.

To remove a tab, use the function `removeTab(tab)` on the parent *PyTabWidget*

For convenience to move tabs around, there is a `moveTab(tab,pane)` function in *GuiApp*.

The function `closeTab(index)` can be used to close permanently a tab, effectively destroying it.

To change the current tab, you can use one of the following functions:

- *setCurrentIndex(index)<NatronGui.PyTabWidget.setCurrentIndex>*
- *setNextTabCurrent()<NatronGui.PyTabWidget.setNextTabCurrent>*

To float the current tab into a new floating window, use the *floatCurrentTab()<NatronGui.PyTabWidget.floatCurrentTab>* function.

### Managing the pane

To close the pane permanently, use the *closePane()<NatronGui.PyTabWidget.closePane>* function. To float the pane into a new floating window with all its tabs, use the `floatPane()` function.

### Member functions description

NatronGui.PyTabWidget.**appendTab**(*tab*)

**Parameters**
**tab** – *QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>*

Appends a new tab to the tab widget and makes it current.

NatronGui.PyTabWidget.**closeCurrentTab**()

Closes the current tab, effectively destroying it.

NatronGui.PyTabWidget.**closeTab**(*index*)

Closes the tab at the given *index*, effectively destroying it.

NatronGui.PyTabWidget.**closePane**()

Closes this pane, effectively destroying it. Note that all tabs will not be destroyed but instead moved to another existing pane.

**Warning:** If this pane is the last one on the GUI, this function does nothing.

NatronGui.PyTabWidget.**count**()

**Return type**
int

Returns the number of tabs in this pane.

NatronGui.PyTabWidget.**currentWidget**()

**Return type**
*QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>*

Returns the current active tab.

NatronGui.PyTabWidget.**floatCurrentTab**()

Make a new floating window with a single pane and moves the current tab of this pane to the new pane of the floating window.

NatronGui.PyTabWidget.**floatPane**()

Make a new floating window and moves this pane to the new window (including all tabs).

NatronGui.PyTabWidget.**getCurrentIndex**()

**Return type**
int

Returns the index of the current tab. This is 0-based (starting from the left).

NatronGui.PyTabWidget.**getScriptName**()

**Return type**
str

Returns the script-name of the pane, as used by the *getTabWidget(scriptName)* function.

NatronGui.PyTabWidget.**getTabLabel**(*index*)

**Parameters**
**index** – int

**Return type**
str

Returns the name of the tab at the given *index* if it exists or an empty string otherwise.

NatronGui.PyTabWidget.**insertTab**(*index*, *tab*)

**Parameters**
- **tab** – *QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>*
- **index** – int

Inserts the given *tab* at the given *index* in this tab-widget.

NatronGui.PyTabWidget.**removeTab**(*tab*)

**Parameters**
**tab** – *QWidget <https://pyside.github.io/docs/pyside/PySide/QtGui/QWidget.html>*

Removes the given *tab* from this pane if it is found. Note that this function does not destroy the *tab*, unlike *closeTab(index)*.

This is used internally by *moveTab(tab,pane)*.

NatronGui.PyTabWidget.**removeTab**(*index*)

**Parameters**
**index** – int

Same as *removeTab(tab)* but the *index* of a tab is given instead.

NatronGui.PyTabWidget.**setCurrentIndex**(*index*)

**Parameters**
**index** – int

Makes the tab at the given *index* (0-based) the current one (if the index is valid).

NatronGui.PyTabWidget.**setNextTabCurrent**()

Set the tab at *getCurrentIndex()* + 1 the current one. This functions cycles back to the first tab once the last tab is reached.

NatronGui.PyTabWidget.**splitHorizontally**()

**Return type**
PyTabWidget

Splits this pane into 2 horizontally-separated panes. The new pane will be returned.

NatronGui.PyTabWidget.**splitVertically**()

**Return type**
PyTabWidget

Splits this pane into 2 vertically-separated panes. The new pane will be returned.

### PyViewer

### Synopsis

A PyViewer is a wrapper around a Natron Viewer. See *detailed* description...

### Functions

- def *seek* (frame)
- def *getCurrentFrame* ()
- def *startForward* ()
- def *startBackward* ()
- def *pause* ()
- def *redraw* ()
- def *renderCurrentFrame* ([useCache=True])
- def *setFrameRange* (firstFrame,lastFrame)
- def *getFrameRange* ()
- def *setPlaybackMode* (mode)
- def *getPlaybackMode* ()
- def *getCompositingOperator* ()
- def *setCompositingOperator* (operator)
- def *getAInput* ()
- def *setAInput* (index)
- def *getBInput* ()
- def *setBInput* (index)
- def *setChannels* (channels)
- def *getChannels* ()
- def *setProxyModeEnabled* (enabled)
- def *isProxyModeEnabled* ()
- def *setProxyIndex* (index)
- def *getProxyIndex* ()
- def *setCurrentView* (viewIndex)
- def *getCurrentView* (channels)

### Detailed Description

This class is a wrapper around a Natron Viewer, exposing all functionalities available as user interaction to the Python API.

To get a *PyViewer* , use the *getViewer(scriptName)* function, passing it the *script-name* of a viewer node.

### Member functions description

NatronGui.PyTabWidget.**seek**(*frame*)

**Parameters**
**frame** – int

Seek the timeline to a particular frame. All other viewers in the project will be synchronized to that frame.

NatronGui.PyTabWidget.**getCurrentFrame**()

**Return type**
int

Returns the current frame on the timeline.

NatronGui.PyTabWidget.**startForward**()

Starts playback, playing the video normally.

NatronGui.PyTabWidget.**startBackward**()

Starts playback backward, like a rewind.

NatronGui.PyTabWidget.**pause**()

Pauses the viewer if the playback is ongoing.

NatronGui.PyTabWidget.**redraw**()

Redraws the OpenGL widget without actually re-rendering the internal image. This is provided for convenience as sometimes the viewer might need refreshing for OpenGL overlays.

NatronGui.PyTabWidget.**renderCurrentFrame**([*useCache=True* ])

**Parameters**
**useCache** – bool

Renders the current frame on the timeline. If *useCache* is False, the cache will not be used and the frame will be completely re-rendered.

NatronGui.PyTabWidget.**setFrameRange**(*firstFrame*, *lastFrame*)

**Parameters**

- **firstFrame** – int
- **lastFrame** – int

Set the frame range on the Viewer to be [*firstFrame* , *lastFrame*] (included).

NatronGui.PyTabWidget.**getFrameRange**()

**Return type**
Tuple

Returns a 2-dimensional tuple of int containing [*firstFrame* , *lastFrame*].

NatronGui.PyTabWidget.**setPlaybackMode**(*mode*)

**Parameters**
**mode** – NatronEngine.Natron.PlaybackModeEnum

Set the playback mode for the Viewer, it can be either **bouncing**, **looping** or **playing once**.

NatronGui.PyTabWidget.**getPlaybackMode**()

**Return type**
NatronEngine.Natron.PlaybackModeEnum

Returns the playback mode for this Viewer.

NatronGui.PyTabWidget.**getCompositingOperator**()

**Return type**
NatronEngine.Natron.ViewerCompositingOperatorEnum

Returns the current compositing operator applied by the Viewer.

NatronGui.PyTabWidget.**setCompositingOperator**(*operator*)

**Parameters**
**operator** – NatronEngine.Natron.ViewerCompositingOperatorEnum

Set the current compositing operator applied by the Viewer.

NatronGui.PyTabWidget.**getAInput**()

**Return type**
int

Returns the **index** of the input (the same index used by `getInput(index)`) used by the **A** choice of the Viewer.

NatronGui.PyTabWidget.**setAInput**(*index*)

**Parameters**
**index** – int

Set the **index** of the input (the same index used by `getInput(index)`) used by the **A** choice of the Viewer.

NatronGui.PyTabWidget.**getBInput**()

**Return type**
int

Returns the **index** of the input (the same index used by `getInput(index)`) used by the **B** choice of the Viewer.

NatronGui.PyTabWidget.**setBInput**(*index*)

**Parameters**
**index** – int

Set the **index** of the input (the same index used by `getInput(index)`) used by the **B** choice of the Viewer.

NatronGui.PyTabWidget.**setChannels**(*channels*)

**Parameters**
**channels** – NatronEngine.Natron.DisplayChannelsEnum

Set the *channels* to be displayed on the Viewer.

NatronGui.PyTabWidget.**getChannels**()

**Return type**
NatronEngine.Natron.DisplayChannelsEnum

Returns the current *channels* displayed on the Viewer.

NatronGui.PyTabWidget.**setProxyModeEnabled**(*enabled*)

**Parameters**
**enabled** – bool

Set the proxy mode *enabled*.

NatronGui.PyTabWidget.**isProxyModeEnabled**(*enabled*)

**Return type**
bool

Returns whether the proxy mode is *enabled*.

NatronGui.PyTabWidget.**setProxyIndex**(*index*)

**Parameters**
**index** – int

Set the *index* of the proxy to use. This is the index in the combobox on the graphical user interface, e.g. *index = 0* will be *2*

NatronGui.PyTabWidget.**getProxyIndex**()

**Return type**
int

Returns the *index* of the proxy in use. This is the index in the combobox on the graphical user interface, e.g. *index = 0* will be *2*

NatronGui.PyTabWidget.**setCurrentView**(*viewIndex*)

**Parameters**
**viewIndex** – int

Set the view to display the given *viewIndex*. This is the index in the multi-view combobox visible when the number of views in the project settings has been set to a value greater than 1.

NatronGui.PyTabWidget.**getCurrentView**()

**Parameters**
**viewIndex** – int

Returns the currently displayed view index. This is the index in the multi-view combobox visible when the number of views in the project settings has been set to a value greater than 1.

## 3.2 Introduction

This section covers the basic principles for scripting in Python in Natron.

### 3.2.1 Natron plug-in paths

When looking for startup scripts or Python group plug-ins, Natron will look into the following search paths in order:

- The bundled plug-ins path. There are 2 kinds of plug-ins: PyPlugs and OpenFX plug-ins. The bundled OpenFX plug-ins are located in Plugins/OFX/Natron in your Natron installation and the bundled PyPlugs in the directory Plugins/PyPlugs.
- The standard user location for non OpenFX plug-ins (i.e. PyPlugs): that is the directory .Natron in the home directory, e.g.:

  On Windows that would be:

```
C:\Users\<username>\.Natron
```

On OS X & Linux that would be:

```
~/.Natron
```

- The standard system location for non OpenFX plug-ins (i.e. PyPlugs):

  Windows:

```
C:\Program Files\Common Files\Natron\Plugins
```

  OS X:

```
/Library/Application Support/Natron/Plugins
```

  Linux:

```
/usr/share/Natron/Plugins
```

- All the paths indicated by the **NATRON_PLUGIN_PATH** environment variable. This environment variable should contain the separator *;* between each path, such as:

```
/home/<username>/NatronPluginsA;/home/<username>/NatronPluginsB
```

- The user extra search paths in the Plug-ins tab of the Preferences of Natron.

If the setting "Prefer bundled plug-ins over system-wide plug-ins" is checked in the preferences then Natron will first look into the bundled plug-ins before checking the standard location. Otherwise, Natron will check bundled plug-ins as the *last* location.

Note that if the "User bundled plug-ins" setting in the preferences is unchecked, Natron will not attempt to load any bundled plug-ins.

### 3.2.2 Python Auto-declared variables

A lot of Python variables are pre-declared by Natron upon the creation of specific objects. This applies currently to the following objects:

- *Effect*
- *Param*
- *Layer*
- *BezierCurve*
- *App*
- *Track*
- *PyCoreApplication*
- *PyTabWidget*
- *PyViewer*
- *PyPanel*

The idea is that it is simpler to access a simple variable like this:

```
node = app1.Blur1
```

rather than call a bunch of functions such as:

```
node = app1.getNode("app1.Blur1")
```

To achieve this, auto-declared objects must be named with a correct syntax in a python script. For instance, the following variable would not work in Python:

```
>>> my variable = 2
File "<stdin>", line 1
my variable = 2
          ^
SyntaxError: invalid syntax
```

But the following would work:

```
>>> myVariable = 2
```

To overcome this issue, all auto-declared variables in Natron have 2 names:

1. A script-name: The name that will be used to auto-declare the variable to Python. This name cannot be changed and is set once by Natron the first time the object is created. This name contains only alpha-numeric characters and does not start with a digit.

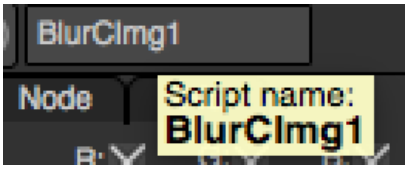
2. A label: The label is what is displayed on the graphical user interface. For example the node label is visible in the node graph. This label can contain any character without any restriction.

Basically there can only ever be one instance of an object with a *script-name* (so it is identified uniquely) but several instances of this object could have the same *label*.

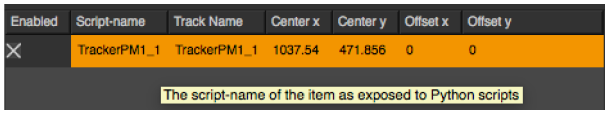
Generally when calling a function which takes an object name in parameter, you pass it always the script-name of the object. See for example `getParam(name)`.

### Knowing the script-name of a node:

The script-name of a node is visible in the graphical-user interface in the tool-tip of the widget to edit the *label* of the node:



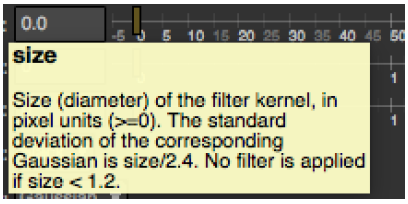

For children nodes (like tracks) you can access their script-name from the table of the Tracker node:




In command-line mode or via the *Script Editor*, you can also get the script-name of the node with the `getScriptName()` function of the *Effect* class.

### Knowing the script-name of a parameter:

In the settings panel of a node, the script-name of a parameter is visible in *bold* in the tooltip displayed when hovering a parameter with the mouse:




In command-line mode or via the *Script Editor* you can also get the script-name of the parameter with the `getScriptName()` function of the *Param* class.

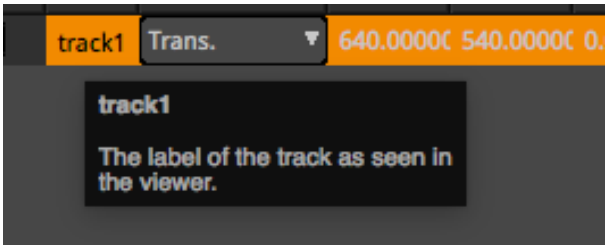
### Knowing the script-name of an item of a Roto node:

In the settings panel of a roto node, the script-name of an item is visible in the tooltip when hovering the mouse on the label of the item

In command-line mode or via the *Script Editor* you can also get the script-name of an item with the `getScriptName()` function of the *ItemBase* class.

### Knowing the script-name of a track in a Tracker node:

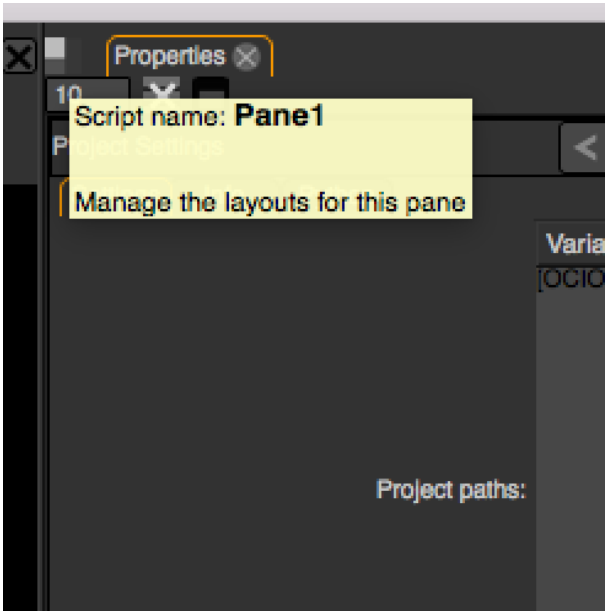
In the settings panel of a tracker node, the script-name of an item is visible in the tooltip when hovering the mouse on the label column.




In command-line mode or via the *Script Editor* you can also get the script-name of an item with the `getScriptName()` function of the *Track* class.

#### Knowing the script-name of a tab-widget:

The script-name of a pane can be seen on the graphical user interface by hovering the mouse over the "Manage layout" button (in the top left hand corner of a pane).




#### Knowing the script-name of a viewer:

The script-name of a viewer is the *script-name* of the node associated to it, e.g.:

app1.pane1.Viewer1

#### Knowing the script-name of a PyPanel:

The script-name of a *PyPanel* can be retrieved with the `getPanelScriptName()` function of the class.

### 3.2.3 Start-up scripts

On start-up Natron will run different start-up scripts to let you setup anything like callbacks, menus, etc...

There are 2 different initialization scripts that Natron will look for in the *search paths*.

- **init.py**

  This script is always run and should only initialize non-GUI stuff. You may not use it to initialize e.g. new menus or windows. Generally this is a good place to initialize all the callbacks that you may want to use in your projects.

- **initGui.py**

  This script is only run in GUI mode (that is with the user interface). It should initialize all gui-specific stuff like new menus or windows.

All the scripts with the above name found in the search paths will be run in the order of the *search paths*.

> **Warning:** This is important that the 2 scripts above are named **init.py** and **initGui.py** otherwise they will not be loaded.

**Warning:** These scripts are run well before any *application instance* (i.e: project) is created. You should therefore not run any function directly that might rely on the *app* variable (or *app1*, etc...). However you're free to define classes and functions that may rely on these variable being declared, but that will be called only later on, when a project will actually be created.

### 3.2.4 Examples

#### initGui.py

A complete example of a **iniGui.py** can be found *here* .

#### init.py

Here is an example of a **init.py** script, featuring:

- Formats addition to the project
- Modifications of the default values of parameters for nodes
- PyPlug search paths modifications

```
#This Source Code Form is subject to the terms of the Mozilla Public
#License, v. 2.0. If a copy of the MPL was not distributed with this
#file, You can obtain one at http://mozilla.org/MPL/2.0/. */
#Created by Alexandre GAUTHIER-FOICHAT on 01/27/2015.


#To import the variable "natron"
import NatronEngine


def addFormats(app):

    app.addFormat ("720p 1280x720 1.0")
    app.addFormat ("2k_185 2048x1108 1.0")


def afterNodeCreatedCallback(thisNode, app, userEdited):

    #Turn-off the Clamp black for new grade nodes
    if thisNode.getPluginID() == "net.sf.openfx.GradePlugin":
        thisNode.clampBlack.setDefaultValue(False)

    #Set the blur size to (3,3) upon creation
    elif thisNode.getPluginID() == "net.sf.cimg.CImgBlur":
        thisNode.size.setDefaultValue(3,0)
        thisNode.size.setDefaultValue(3,1)


#This will set the After Node Created callback on the project to tweek default values␣
↪for parameters
def setNodeDefaults(app):
    app.afterNodeCreated.set("afterNodeCreatedCallback")


def setProjectDefaults(app):
```

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```
    app.getProjectParam('autoPreviews').setValue(False)
    app.getProjectParam('outputFormat').setValue("2k_185")
    app.getProjectParam('frameRate').setValue(24)
    app.getProjectParam('frameRange').setValue(1, 0)
    app.getProjectParam('frameRange').setValue(30, 1)
    app.getProjectParam('lockRange').setValue(True)


def myCallback(app):
    addFormats(app)
    setNodeDefaults(app)
    setProjectDefaults(app)



#Set the After Project Created/Loaded callbacks
NatronEngine.natron.setOnProjectCreatedCallback("init.myCallback")
NatronEngine.natron.setOnProjectLoadedCallback("init.myCallback")

#Add this path to the Natron search paths so that our PyPlug can be found.
#Note that we could also set this from the NATRON_PLUGIN_PATH environment variable
#or even in the Preferences panel, Plug-ins tab, with the "Pyplugs search path"
NatronEngine.natron.appendToNatronPath("/Library/Natron/PyPlugs")
```

### 3.2.5 Natron in command-line

Natron has 3 different execution modes:

- The execution of Natron projects (.ntp)
- The execution of Python scripts that contain commands for Natron
- An interpreter mode where commands can be given directly to the Python interpreter

#### General options:

**[–background] or [-b] enables background mode rendering.**
No graphical interface will be shown. When using *NatronRenderer* or the *-t* option this argument is implicit and you don't need to use it. If using Natron and this option is not specified then it will load the project as if opened from the file menu.

**[–interpreter]** or **[-t]** [optional] <*python script file path*> enables Python interpreter mode. Python commands can be given to the interpreter and executed on the fly. An optional Python script filename can be specified to source a script before the interpreter is made accessible. Note that Natron will not start rendering any Write node of the sourced script, you must explicitly start it. *NatronRenderer* and *Natron* will do the same thing in this mode, only the *init.py* script will be loaded.

### Options for the execution of Natron projects:

```
Natron <project file path>
```

``**–writer**`` or ``**-w**`` <*Writer node script name*> [optional] <*filename*> [optional] <*frameRange*> specifies a Write node to render. When in background mode, the renderer will only try to render with the node script name following this argument. If no such node exists in the project file, the process will abort. Note that if you don't pass the *–writer* argument, it will try to start rendering with all the writers in the project.

After the writer node script name you can pass an optional output filename and pass an optional frame range in the format firstFrame-lastFrame (e.g. 10-40).

**Warning:** You may only specify absolute file paths with the *-i* option, things like:

```
NatronRenderer -i MyReader ~/pictures.png -w MyWriter rendered###.exr
```

would not work. This would work on the other hand:

```
NatronRenderer -i MyReader /Users/me/Images/pictures.png -w MyWriter /Users/me/
↪Images/rendered###.exr
```

Note that several ``*-w*`` options can be set to specify multiple Write nodes to render.

**Warning:** Note that if specified, then the frame range will be the same for all Write nodes that will render.

``**–reader**``*** or **``-i**`` <reader node script name> <filename> : Specify the input file/sequence/video to load for the given Reader node. If the specified reader node cannot be found, the process will abort.

**Warning:** You may only specify absolute file paths with the *-i* option, things like:

```
NatronRenderer -i MyReader ~/pictures.png -w MyWriter rendered###.exr
```

would not work. This would work on the other hand:

```
NatronRenderer -i MyReader /Users/me/Images/pictures.png -w MyWriter /Users/me/
↪Images/rendered###.exr
```

``**–onload**`` or ``**-l**`` <*python script file path*> specifies a Python script to be executed after a project is created or loaded. Note that this will be executed in GUI mode or with NatronRenderer and it will be executed after any Python function set to the callback onProjectLoaded or onProjectCreated. The same rules apply to this script as the rules below on the execution of Python scripts.

``**–render-stats**`` or ``**-s**`` Enables render statistics that will be produced for each frame in form of a file located next to the image produced by the Writer node, with the same name and a `-stats.txt` extension. The breakdown contains information about each nodes, render times, etc. This option is useful for debugging purposes or to control that a render is working correctly. **Please note** that it does not work when writing video files.

Some examples of usage of the tool:

```
Natron /Users/Me/MyNatronProjects/MyProject.ntp

Natron -b -w MyWriter /Users/Me/MyNatronProjects/MyProject.ntp

NatronRenderer -w MyWriter /Users/Me/MyNatronProjects/MyProject.ntp

NatronRenderer -w MyWriter /FastDisk/Pictures/sequence###.exr 1-100 /Users/Me/
↪MyNatronProjects/MyProject.ntp
```

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```
NatronRenderer -w MyWriter -w MySecondWriter 1-10 /Users/Me/MyNatronProjects/
↪MyProject.ntp

NatronRenderer -w MyWriter 1-10 -l /Users/Me/Scripts/onProjectLoaded.py /Users/Me/
↪MyNatronProjects/MyProject.ntp
```

Example of a script passed to –onload:

```
import NatronEngine

#Create a writer when loading/creating a project
writer = app.createNode("fr.inria.openfx.WriteOIIO")
```

### Options for the execution of Python scripts:

```
Natron <Python script path>
```

Note that the following does not apply if the *-t* option was given.

The script argument can either be the script of a Group that was exported from the graphical user interface or an exported project or even a script written by hand.

When executing a script, Natron first looks for a function with the following signature:

```
def createInstance(app,group):
```

If this function is found, the script will be imported as a module and it will be executed.

> **Warning:** Note that when imported, the script will not have access to any external variable declared by Natron except the variable passed to the createInstance function.

If this function is not found the whole content of the script will be interpreted as though it were given to Python natively.

---

**Note:** In this case the script **can** have access to the external variables declared by Natron.

---

Either cases, the "app" variable will always be defined and pointing to the correct application instance. Note that if you are using Natron in GUI mode, it will source the script before creating the graphical user interface and will not start rendering. When in command-line mode (*-b* option or NatronRenderer) you must specify the nodes to render. If nothing is specified, all Write nodes that were created in the Python script will be rendered.

You can render specific Write nodes either with the *-w* option as described above or with the following option:

**[–output]** or **[-o]** <*filename*> <*frameRange*> specifies an *Output* node in the script that should be replaced with a *Write* node.

The option looks for a node named *Output1* in the script and will replace it by a *Write* node much like when creating a Write node in the user interface.

A filename must be specified, it is the filename of the output files to render. Also a frame range must be specified if it was not specified earlier.

This option can also be used to render out multiple Output nodes, in which case it has to be used like this:

**[–output1]** or **[-o1]** looks for a node named *Output1* **[–output2]** or **[-o2]** looks for a node named *Output2*

etc…

**-c** or **[ –cmd ]** "PythonCommand" : Execute custom Python code passed as a script prior to executing the Python script passed in parameter. This option may be used multiple times and each python command will be executed in the order they were given to the command-line.

Some examples of usage of the tool:

```
Natron /Users/Me/MyNatronScripts/MyScript.py

Natron -b -w MyWriter /Users/Me/MyNatronScripts/MyScript.py

NatronRenderer -w MyWriter /Users/Me/MyNatronScripts/MyScript.py

NatronRenderer -o /FastDisk/Pictures/sequence###.exr 1-100 /Users/Me/MyNatronScripts/
↪MyScript.py

NatronRenderer -o1 /FastDisk/Pictures/sequence###.exr -o2 /FastDisk/Pictures/test###.
↪exr 1-100 /Users/Me/MyNatronScripts/MyScript.py

NatronRenderer -w MyWriter -o /FastDisk/Pictures/sequence###.exr 1-100 /Users/Me/
↪MyNatronScripts/MyScript.py

NatronRenderer -w MyWriter /FastDisk/Pictures/sequence.mov 1-100 /Users/Me/
↪MyNatronScripts/MyScript.py -e "print \"Now executing MyScript.py...\""
```

### Options for the execution of the interpreter mode:

```
Natron -t [optional] <Python script path>
```

Natron will first source the script passed in argument, if any and then return control to the user. In this mode, the user can freely input Python commands that will be interpreted by the Python interpreter shipped with Natron.

Some examples of usage of the tool:

```
Natron -t

NatronRenderer -t

NatronRenderer -t /Users/Me/MyNatronScripts/MyScript.py
```

### 3.2.6 Example

A typical example would be to convert an input image sequence to another format. There are multiple ways to do it from the command-line in Natron and we are going to show them all:

- Passing a .ntp file to the command line and passing the correct arguments
- Passing a Python script file to the command-line to setup the graph and render

#### With a Natron project (.ntp) file

#### With a Python script file

We would write a customized Python script that we pass to the command-line:

```
#This is the content of myStartupScript.py

reader = app.createReader("/Users/Toto/Sequences/Sequence__####.exr")
writer = app.createWriter("/Users/Toto/Sequences/Sequence.mov")

#The node will be accessible via app.MyWriter after this call
#We do this so that we can reference it from the command-line arguments
writer.setScriptName("MyWriter")

#The node will be accessible via app.MyReader after this call
reader.setScriptName("MyReader")


#Set the format type parameter of the Write node to Input Stream Format so that the␣
↪video
#is written to the size of the input images and not to the size of the project
formatType =  writer.getParam("formatType")
formatType.setValue(0)

#Connect the Writer to the Reader
writer.connectInput(0,reader)

#When using Natron (Gui) then the render must explicitly be requested.
#Otherwise if using NatronRenderer or Natron -b the render will be automatically␣
↪started
#using the command-line arguments

#To use with Natron (Gui) to start render
#app.render(writer, 10, 20)
```

To launch this script in the background, you can do it like this:

```
NatronRenderer /path/to/myStartupScript.py -w MyWriter 10-20
```

For now the output filename and the input sequence are *static* and would need to be changed by hand to execute this script on another sequence.

We can customize the Reader filename and Writer filename parameters using the command-line arguments:

```
NatronRenderer /path/to/myStartupScript.py -i MyReader /Users/Toto/Sequences/
↪AnotherSequence__####.exr -w MyWriter /Users/Toto/Sequences/mySequence.mov 10-20
```

Let's imagine that now we would need to also set the frame-rate of the video in output and we would need it to vary for each different sequence we are going to transcode. This is for the sake of this example, you could also need to modify other parameters in a real use-case.

Since the fps cannot be specified from the command-line arguments, we could do it in Python with:

```
MyWriter.getParam("fps").set(48)
```

And change the value in the Python script for each call to the command-line, but that would require manual intervention.

That's where another option from the command-line comes into play: the ``**-c**`` option (or `--cmd`): It allows one to pass custom Python code in form of a string that will be executed before the actual script.

To set the fps from the command-line we could do as such now:

```
NatronRenderer /path/to/myStartupScript.py -c "fpsValue=60" -w MyWriter 10-20
```

Which would require the following modifications to the Python script:

```
MyWriter.getParam("fps").set(fpsValue)
```

We could also set the same way the Reader and Writer file names:

```
NatronRenderer /path/to/myStartupScript.py -c "fpsValue=60; readFileName=\"/Users/
↪Toto/Sequences/AnotherSequence__####.exr\"; writeFileName=\"/Users/Toto/Sequences/
↪mySequence.mov\""
```

And modify the Python script to take into account the new *readFileName* and *writeFileName* parameters:

```
...
reader = app.createReader(readFileName)
writer = app.createNode(writeFileName)
...
```

The ``**-c**`` option can be given multiple times to the command-line and each command passed will be executed once, in the order they were given.

#### With a Natron project file:

Let's suppose the user already setup the project via the GUI as such:

MyReader—>MyWriter

We can then launch the render from the command-line this way:

```
NatronRenderer /path/to/myProject.ntp -w MyWriter 10-20
```

We can customize the Reader filename and Writer filename parameters using the command-line arguments:

```
NatronRenderer  /path/to/myProject.ntp -i MyReader /Users/Toto/Sequences/
↪AnotherSequence__####.exr -w MyWriter /Users/Toto/Sequences/mySequence.mov 10-20
```

### 3.2.7 Objects hierarchy Overview

When running Natron, several important objects are created automatically and interact at different levels of the application.

Natron is separated in 2 internal modules:

*NatronEngine* and *NatronGui*.

The latest is only available in **GUI** mode. You may access *globally* to the Natron process with either **NatronEngine.natron** or **NatronGui.natron**

NatronEngine.natron is of type *PyCoreApplication* and NatronGui.natron is of type *PyGuiApplication*. This is a singleton and there is only a **single** instance of that variable living throughout the execution of the Natron process.

When using with **NatronGui.natron** you get access to GUI functionalities in addition to the internal functionalities exposed by *PyCoreApplication*

Basically if using Natron in command-line you may only use **NatronEngine.natron**.

---

**Note:** You may want to use **natron** directly to avoid prefixing everything with *NatronEngine.* or *NatronGui.* by using a from NatronEngine import * statement. Be careful though as it then makes it more confusing for people reading the code as to which version of the **natron** variable you are using.

---

It handles all *application-wide* information about plug-ins, environment, *application settings*... but also can hold one or multiple *application instance* which are made available to the global variables via the following variables:

```
app1 # References the first instance of the application (the first opened project)
app2 # The second project
...
```

Note that in background command-line mode, there would always be a single opened project so Natron does the following assignment for you:

```
app = app1
```

**Warning:** Note that when running scripts in the *Script Editor*, the application is running in GUI mode hence the *app* variable is not declared.

The *App* object is responsible for managing all information relative to a project. This includes all the *nodes*, project settings and render controls. See *this section* to create and control nodes.

Each node can have *parameters* which are the controls found in the settings panel of the node.

The same *Param* class is also used for the project settings and the application settings (preferences).

## 3.3 Getting started

This section covers basic functionalities a Python script can do in Natron.

### 3.3.1 Creating and controlling nodes

#### Creating a new node:

To create a *node* in Natron, you would do so using the *app instance* via the function `createNode(pluginId, majorVersion,group)` like this:

```
app1.createNode("fr.inria.openfx.ReadOIIO")
```

In this line we specify that we want the first opened project to create a node instantiating the plug-in *ReadOIIO*. Note that if we were in background mode we could just write the following which would be equivalent:

```
app.createNode("fr.inria.openfx.ReadOIIO")
```

Since in command-line there is only a single project opened, Natron does the following assignment:

```
app = app1
```

If we were to create the node into a specific group, we would do so like this:

```
group = app.createNode("fr.inria.built-in.Group")

reader = app.createNode("fr.inria.openfx.ReadOIIO", -1, group)
```

Note that when passed the number -1, it specifies that we want to load the highest version of the plug-in found. This version parameter can be useful to load for example a specific version of a plug-in.

The *pluginID* passed to this function is a **unique** ID for each plug-in. If 2 plug-ins were to have the same ID, then Natron will create separate entries for each version.

You can query all plug-ins available in Natron this way:

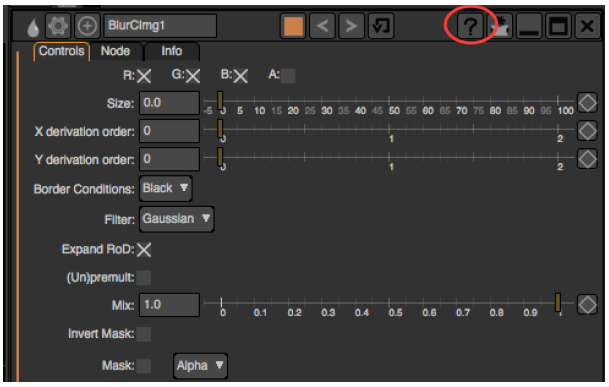
```
allPlugins = natron.getPluginIDs()
```

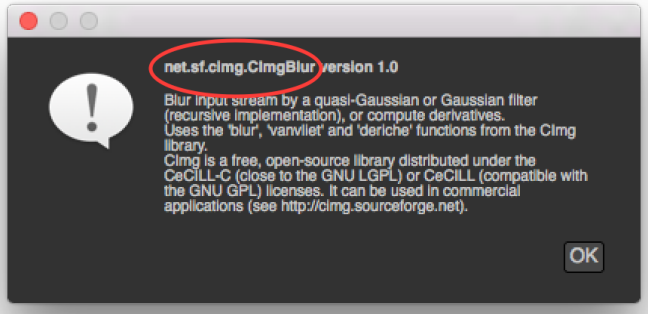
You can also filter out plug-ins that contain only a given *filter* name:

```
# Returns only plugin IDs containing ".inria" in it

filteredPlugins = natron.getPluginIDs(".inria.")
```

In the user interface, the plug-in ID can be found when pressing the **?** button located in the top right-hand corner of the settings panel:



### Connecting a node to other nodes:

To connect a node to the input of another node you can use the `connectInput(inputNumber,input)` function.

The *inputNumber* is a 0-based index specifying the input on which the function should connect the given *input Effect*.

You can query the input name at a specific index with the following function:

```
print(node.getInputLabel(i))
```

Here is a small example where we would create 3 nodes and connect them together:

```
#Create a write node
writer = app.createNode("fr.inria.openfx.WriteOIIO")

#Create a blur
blur = app.createNode("net.sf.cimg.CImgBlur")

#Create a read node
reader = app.createNode("fr.inria.openfx.ReadOIIO")

#Connect the write node to the blur
writer.connectInput(0,blur)

#Connect the blur to the read node
blur.connectInput(0,reader)
```

Note that the following script would do the same since nodes are *auto-declared variables*

```
node = app.createNode("fr.inria.openfx.WriteOIIO")
print(node.getScriptName()) # prints WriteOIIO1

#The write node is now available via its script name app.WriteOIIO1

node = app.createNode("net.sf.cimg.CImgBlur")
print(node.getScriptName()) # prints CImgBlur1

#The blur node is now available via its script name app.BlurCImg1

node = app.createNode("fr.inria.openfx.ReadOIIO")
print(node.getScriptName()) # prints ReadOIIO1

#The ReadOIIO node is now available via its script name app.ReadOIIO1

app.WriteOIIO1.connectInput(0,app.BlurCImg1)
app.BlurCImg1.connectInput(0,app.ReadOIIO1)
```

Note that not all connections are possible, and sometimes it may fail for some reasons explained in the documentation of the `connectInput(inputNumber,input)` function.

You should then check for errors this way:

```
if not app.WriteOIIO1.connectInput(0,app.BlurCImg1):
    # Handle errors
```

You can check beforehand whether a subsequent *connectInput* call would succeed or not by calling the `canConnectInput(inputNumber,input)` which basically checks whether is is okay to do the connection or not. You can then safely write the following instructions:

```
if app.WriteOIIO1.canConnectInput(0,app.BlurCImg1):
    app.WriteOIIO1.connectInput(0,app.BlurCImg1)
else:
    # Handle errors
```

Note that internally *connectInput* calls *canConnectInput* to validate whether the connection is possible.

To disconnect an existing connection, you can use the `disconnectInput(inputNumber)` function.

### 3.3.2 Controlling parameters

#### Accessing a node's parameters:

As for nodes, *parameters* are *auto-declared* objects. You can access an existing parameter of a node by its *script-name*:

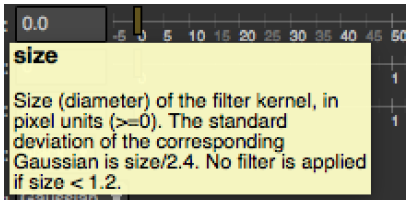
```
app.BlurCImg1.size
```

Note that you can also access a parameter with the `getParam(scriptName)` function:

```
param = app.BlurCImg1.getParam("size")
```

but you should not ever need it because Natron pre-declared all variables for you.

The *script-name* of a parameter is visible in the user interface when hovering the parameter in the settings panel with the mouse. This is the name in **bold**:




#### Parameters type:

Each parameter has a type to represent internally different data-types, here is a list of all existing parameters:

- *IntParam* to store 1-dimensional integers
- *Int2DParam* to store 2-dimensional integers
- *Int3DParam* to store 3-dimensional integers
- *DoubleParam* to store 1-dimensional floating point
- *Double2DParam* to store 2-dimensional floating point
- *Double3DParam* to store 3-dimensional floating point
- *BooleanParam* to store 1-dimensional boolean (checkbox)
- *ButtonParam* to add a push-button
- *ChoiceParam* a 1-dimensional drop-down (combobox)
- *StringParam* to store a 1-dimensional string
- *FileParam* to specify an input-file
- *OutputFileParam* to specify an output-file param
- *PathParam* to specify a path to a single or multiple directories

- *ParametricParam* to store N-dimensional parametric curves
- *GroupParam* to graphically gather parameters under a group
- *PageParam* to store parameters into a page

### Retrieving a parameter's value:

Since each underlying type is different for parameters, each sub-class has its own version of the functions.

To get the value of the parameter at the timeline's current time, call the `get()` or `getValue()` function.

If the parameter is animated and you want to retrieve its value at a specific time on the timeline, you would use the `get(frame)` or `getValueAtTime(frame,dimension)` function.

Note that when animated and the given *frame* time is not a time at which a keyframe exists, Natron will interpolate the value of the parameter between surrounding keyframes with the interpolation filter selected (by default it is *smooth*).

### Modifying a parameter's value:

You would set the parameter value by calling the `set(value)` or `setValue(value)` function. If the parameter is animated (= has 1 or more keyframe) then calling this function would create (or modify) a keyframe at the timeline's current time.

To add a new keyframe the `set(value,frame)` or `setValueAtTime(value,frame,dimension)` function can be used.

To remove a keyframe you can use the `deleteValueAtTime(frame,dimension)` function. If you want to remove all the animation on the parameter at a given *dimension*, use the `removeAnimation(dimension)` function.

**Warning:** Note that the dimension is a 0-based index referring to the dimension on which to operate. For instance a *Double2DParam* has 2 dimensions *x* and *y*. To set a value on **x** you would use *dimension = 0*, to set a value on **y** you would use *dimension = 1*.

### Controlling other properties of parameters:

See the documentation for the *Param* class for a detailed explanation of other properties and how they affect the parameter.

### Creating new parameters:

In Natron, the user has the possibility to add new parameters, called *User parameters*. They are pretty much the same than the parameters defined by the underlying OpenFX plug-in itself.

In the Python API, to create a new *user parameter*, you would need to call one of the `createXParam(name, label,...)` of the *Effect* class.

These parameters can have their default values and properties changed as explained in the documentation page of the *Param* class.

To remove a user created parameter you would need to call the `removeParam(param)` function of the *Effect* class.

**Warning:** Only **user parameters** can be removed. Removing parameters defined by the OpenFX plug-in will not work.

### 3.3.3 Parameters expressions

The value of a *parameter* can be set by Python expressions. An expression is a line of code that can either reference the value of other parameters or apply mathematical functions to the current value.

The expression will be executed every times the value of the parameter is fetched from a call to `getValue(dimension)` or `get()`.

**Warning:** Note that when an expression is active, all animation is ignored and only the result of the expression will be used to return the value of the parameter.

When executing an expression, the expression itself has a **scope**. The **scope** of the expression defines all nodes and parameters that are possible to use in the expression in order to produce the output value.

Any node in the *scope* can has a variable declared corresponding to its script-name:

```
Blur1
```

You would then access a parameter of Blur1 also by its script-name:

```
Blur1.size

Group1.Blur1.size
```

**Warning:** Referencing the value of the same parameter which expression is being edited can lead to an infinite recursion which Python should warn you about

In fact this is exactly like referencing *auto-declared* nodes via the *Script Editor* except that the *app* prefix was removed for nodes in the scope.

See *this section* to learn how to determine the *script-name* of a node.

See *this section* to learn how to determine the *script-name* of a parameter.

By default a parameter's expression can only refer to parameters of nodes belonging to the same Group, or to parameters belonging to the parent *Group* node.

Parameters of a Group node are also granted in the scope the parameters contained within that group.

For instance if your graph hierarchy looks like this:

```
Read1
Blur1
Group1/
    Input1
    Blur1
    Convolve1
    Roto1
    Output1
Viewer1
```

A parameter of *Read1* would be able to reference any parameter of *Read1*, *Blur1*, *Group1*, *Viewer1* but could not reference any parameter of the nodes within *Group1*.

Similarly, a parameter of *Group1.Blur1* would be able to reference any parameter of *Group1*, *Group1.Input1* , *Group1.Blur1* , *Group1.Convolve1* , *Group1.Roto1* , *Group1.Output1* but would not be able to reference any top-level node (*Read1*, *Blur1*, *Viewer1*) except the *Group1* node.

A parameter of *Group1* would on the other hand be able to reference any parameter in top-level nodes and in the nodes of *Group1*.

The *scope* was introduced to deal with problems where the user would write expressions referencing parameters that would probably no longer be referable when loading the script again in another project.

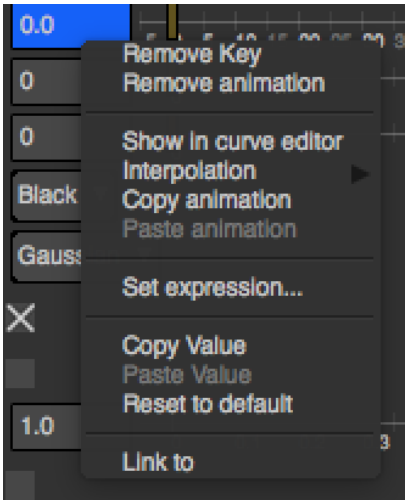
**Warning:** Note that you would still be able to reach any node or parameter in the project using the *app1* (or *app* prefix in command-line mode) but is not recommended to do so:

```
app1.Blur1.size
```

All functions available in the Python API are made available to expressions. Also for convenience the **math** Python module has been made available by default to expressions.

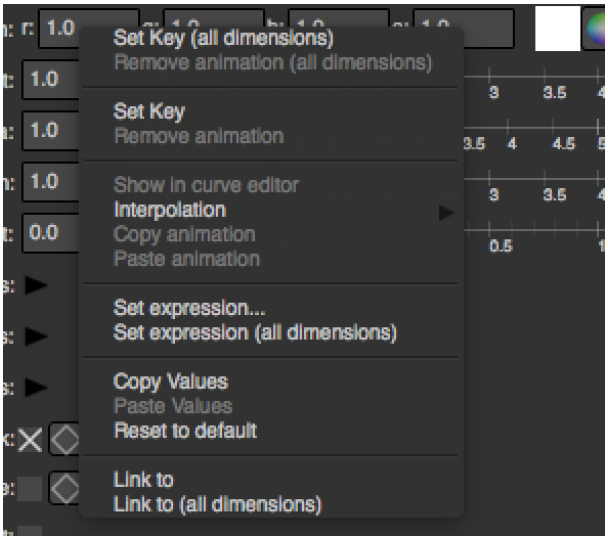
### Setting an expression:

To create an expression from the user interface, right click a parameter and choose *Set Expression...*



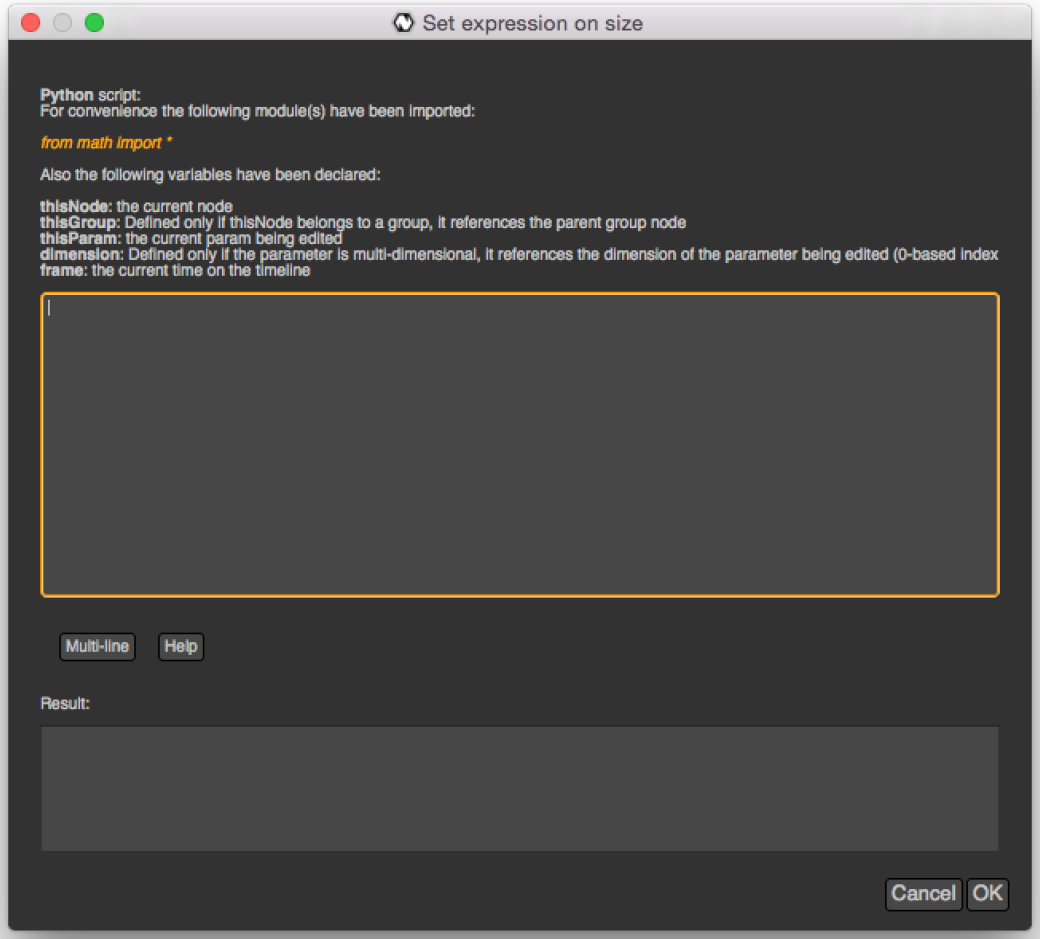

Note that for multi-dimensional parameters such as *ColorParam*, the *Set Expression...* entry will **only set an expression for the right-clicked dimension**.

The *Set Expression (all dimensions)* entry will on the other hand set the same expression on all dimensions of the parameter at once.




A dialog will open where you can write the expression:

By default you do not have to assign any variable as the result of the expression, Natron will do it by itself:


Set expression on size
Python script:
For convenience the following module(s) have been imported:
from math import *
Also the following variables have been declared:
thisNode: the current node
thisGroup: Defined only if thisNode belongs to a group, it references the parent group node
thisParam: the current param being edited
dimension: Defined only if the parameter is multi-dimensional, it references the dimension of the parameter being edited (0-based index
frame: the current time on the timeline
Multi-line
Help
Result:
Cancel
OK

```
#Expression for Blur1.size

Transform1.translate.get[0]

#Will be expanded automatically by Natron to

ret = Transform1.translate.get[0]
```

However if you were to write an expression that spans over multiple lines you would need to specifically set the **ret** variable yourself and toggle-on the *multi-line* button:

```
a = acos(Transform1.translate.get[0])
b = sin(Transform1.rotate.get())
ret = (tan(a * b) / pi) + Group1.customParam.get()
```

You can also set an expression from a script using the `setExpression(expr,hasRetVariable,dimension)` function of *AnimatedParam*.

### Writing an expression:

For convenience the following variables have been declared to Python when executing the expression:

- **thisNode**: It references the node holding the parameter being edited
- **thisGroup**: It references the group containing *thisNode*
- **thisParam**: It references the param being edited
- **dimension**: Defined only for multi-dimensional parameters, it indicates the dimension (0-based index) of the parameter on which the expression has effect.
- **frame**: It references the current time on the timeline
- The **app** variable will be set so it points to the correct *application instance*.

To reference the value of another parameter use the `get()` function which retrieves the value of the parameter at the current timeline's time. If the parameter is multi-dimensional, you need to use the subscript operator to retrieve the value of a particular dimension.

The `getValue(dimension)` does the same thing but takes a *dimension* parameter to retrieve the value of the parameter at a specific *dimension*. The following is equivalent:

```
ColorCorrect1.MasterSaturation.get()[dimension]

ColorCorrect1.MasterSaturation.getValue(dimension)
```

Note that for 1-dimensional parameter, the `get()` function cannot be used with subscript, e.g.:

```
Blur1.size.get()
```

To retrieve the value of the parameter at a specific *frame* because the parameter is animated, you can use the `get(frame)` function.

Again the `getValueAtTime(frame,dimension)` does the same thing but takes a *dimension* parameter to retrieve the value of the parameter at a specific *dimension*. The following lines are equivalent to the 2 lines above:

```
ColorCorrect1.MasterSaturation.get(frame)[dimension]

ColorCorrect1.MasterSaturation.getValueAtTime(frame,dimension)
```

We ask for the value of the *MasterSaturation* parameter of the *ColorCorrect1* node its value at the current *frame* and at the current *dimension*, which is the same as calling the `get()` function without a *frame* in parameter.

### Copying another parameter through expressions:

If we want the value of the parameter **size** of the node *BlurCImg1* to copy the parameter **mix** of the node *DilateCImg1*, we would set the following expression on the **size** parameter of the node *BlurCImg1* (see *setting an expression*):

```
DilateCImg1.mix.get()
```

If mix has an animation and we wanted to get the value of the mix at the previous *frame*, the following code would work:

```
DilateCImg1.mix.get(frame - 1)
```

Note that when choosing the *Link to...* option when right-clicking a parameter, Natron writes automatically an expression to copy the parameter to link to for you.

### Using random in expressions:

Sometimes it might be useful to add a random generator to produce noise on a value. However the noise produced must be reproducible such that when rendering multiple times the same frame or when loading the project again it would use the same value.

We had to add a specific random function in Natron that takes into account the state of a parameter and the current time on the timeline as a seed function to random.

> **Warning:** We advise against using the functions provided by the module random.py of the Python standard library, as the values produced by these functions will not be reproducible between 2 runs of Natron for the same project.

The Natron specific random functions are exposed in the *Param* class.

When executing an expression, Natron pre-declares the **random()** function so that you do not have to do stuff like:

```
thisParam.random()
```

Instead you can just type the following in your expression:

```
myOtherNode.myOtherNodeParam.get() * random()
```

The `random(min = 0.,max = 1.)` function also takes 2 optional arguments indicating the range into which the return value should fall in. The range is defined by [min,max[.

    #Returns a random floating point value in the range [1., 10.[ random(1.,10.)

For integers, use the `randomInt(min,max)` function instead:

```
#Returns a random integer in the range [1,100[
randomInt(1,100)

#Using the randomInt function with a given seed
seed = 5
randomInt(1,100,frame,seed)
```

### Advanced expressions:

To write more advanced expressions based on fractal noise or perlin noise you may use the functions available in the *ExprUtils* class.

## Expressions persistence

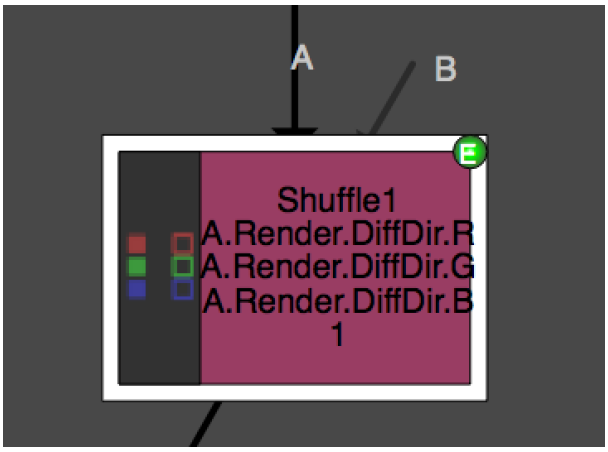
If you were to write a group plug-in and then want to have your expressions persist when your group will be instantiated, it is important to prefix the name of the nodes you reference in your expression by the **thisGroup.** prefix. Without it, Natron thinks you're referencing a top-level node, i.e: a node which belongs to the main node-graph, however, since you're using a group, all your nodes are no longer top-level and the expression will fail.

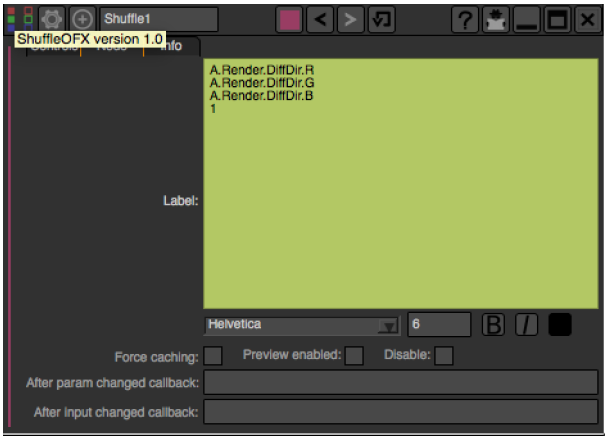
## Examples

### Setting the label of a Node so it displays the value of a parameter on the node-graph:

For instance, we may want to have on the shuffle node, the values of the output RGBA channels so we don't have to open the settings panel to understand what the node is doing.

To do so, we set an expression on the "Label" parameter located in the "Node" tab of the settings panel.




Set the following expression on the parameter

```
thisNode.outputR.getOption(thisNode.outputR.get()) + "\n" + thisNode.outputG.
↪getOption(thisNode.outputG.get()) + "\n" + thisNode.outputB.getOption(thisNode.
↪outputB.get()) + "\n" + thisNode.outputA.getOption(thisNode.outputA.get())
```

### Generating custom animation for motion editing:

In this example we will demonstrate how to perform Loop,Negate and Reverse effects on an animation even though this is already available as a preset in Natron.

To do be able to do this we make use of the `curve(frame,dimension)` function of the *Param* class. This function returns the value of the animation curve (of the given dimension) at the given time.

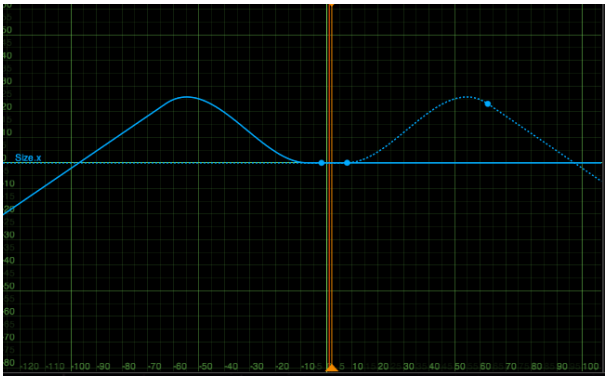
If we were to write the following expression:

```
curve(frame)
```

The result would be exactly the animation curve of the parameter.

On the other hand if we write:

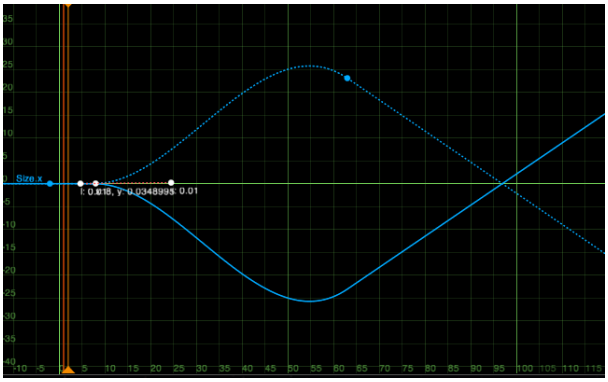
```
curve(-frame)
```



We have just reversed the curve, meaning that the actual result at the frame F will be in fact the value of the curve at the frame -F.

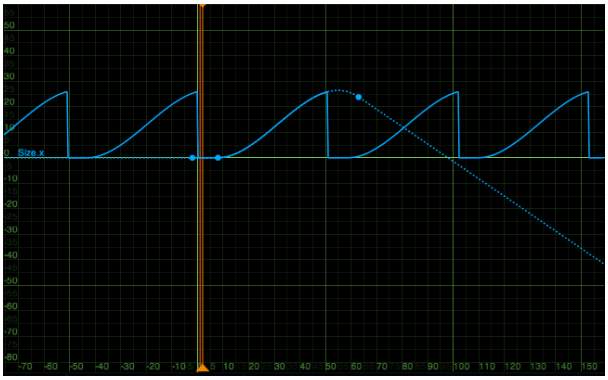
In the same way we can apply a negate effect:

```
-curve(frame)
```



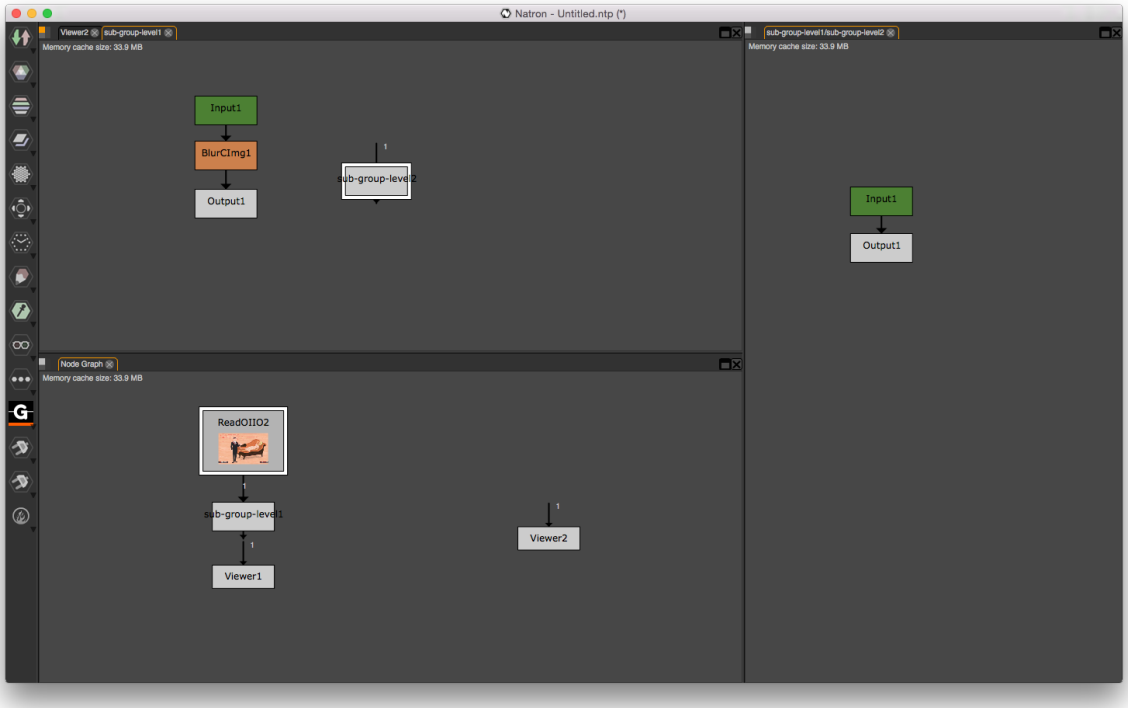
The loop effect is a bit more complicated and needs to have a frame-range in parameter:

```
firstFrame = 0
lastFrame = 10
curve(((frame - firstFrame) % (lastFrame - firstFrame + 1)) + firstFrame)
```



### 3.3.4 Working with groups

Groups in Natron are a complete sub-nodegraph into which the user can manage nodes exactly like in the *main* nodegraph, but everything in that sub-group will be referenced as 1 node in the hierarchy above, e.g.:




A group can be created like any other node in Natron and by default embeds already 2 nodes: The **Output** node and one **Input** node.

The **Output** node is used to reference what would be the output of the internal graph of the group. In Natron, **a node has necessarily a single output**, hence if you add several *Output* nodes to a group, **only the first Output node will be taken into account**.

Note that you can also add *Output* nodes to the top-level graph of Natron (the main Node Graph). They are useful if you need to export your project as a group.

When used in the top-level graph, there can be multiple *Output* nodes, which can then be used when launching Natron from the command-line to render the script, e.g.:

```
NatronRenderer -o1 /FastDisk/Pictures/sequence###.exr -o2 /FastDisk/Pictures/test###.exr 1-100
/Users/Me/MyNatronScripts/MyScript.py
```

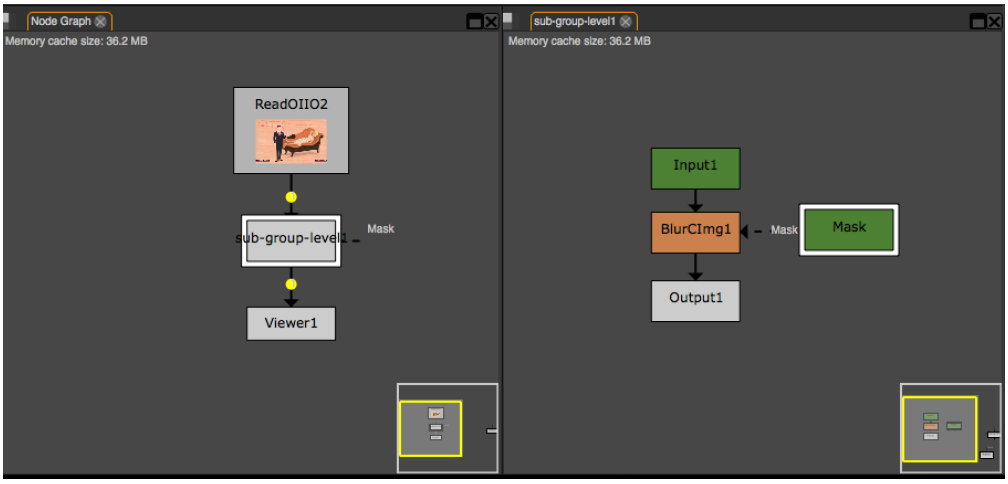
Where each argument *o1*, *o2* expand respectively the nodes *Output1* and *Output2*.

**Warning:** You should never attempt to change the script name of output nodes, otherwise Natron has no way to match the given command line arguments to the output nodes. In fact Natron will completely ignore your request if you explicitly try to set the script name of an *Output* node.

The **Input** node is not necessarily unique and represents 1 input arrow of the group node. You can also specify in the settings panel of the *Input* node whether this input should be considered as a mask or whether it should be optional.

**Note:** Note that the OpenFX standard specifies that Mask inputs must be optionals so when checking the mask parameter, this will automatically check the *optional* parameter.

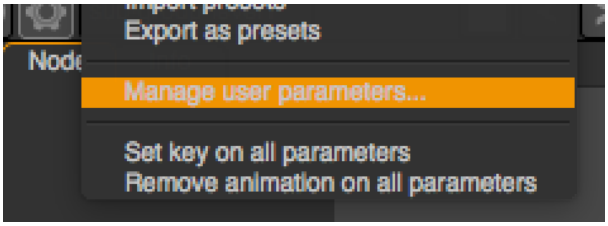
You can freely rename an **Input** node, effectively changing the label attached to the arrow on the group node.




### Parameters expressions and groups

A common task is to add parameters to the group node itself which directly interact to nodes parameters used internally by this group.

You can add a new parameter to the group node by clicking the "Settings and presets" button and clicking "Manage user parameters…":




A dialog will popup on which you can manage all the parameters that you added. By default a page is added automatically that will contain user parameters.

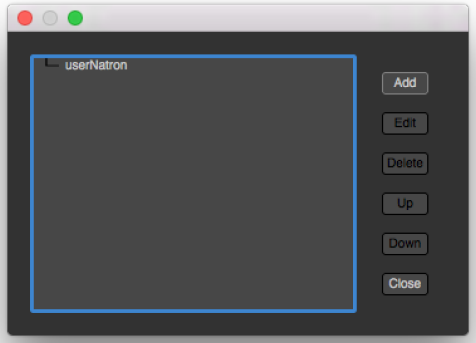
To create a new parameter, click the add button, this brings up a new dialog:

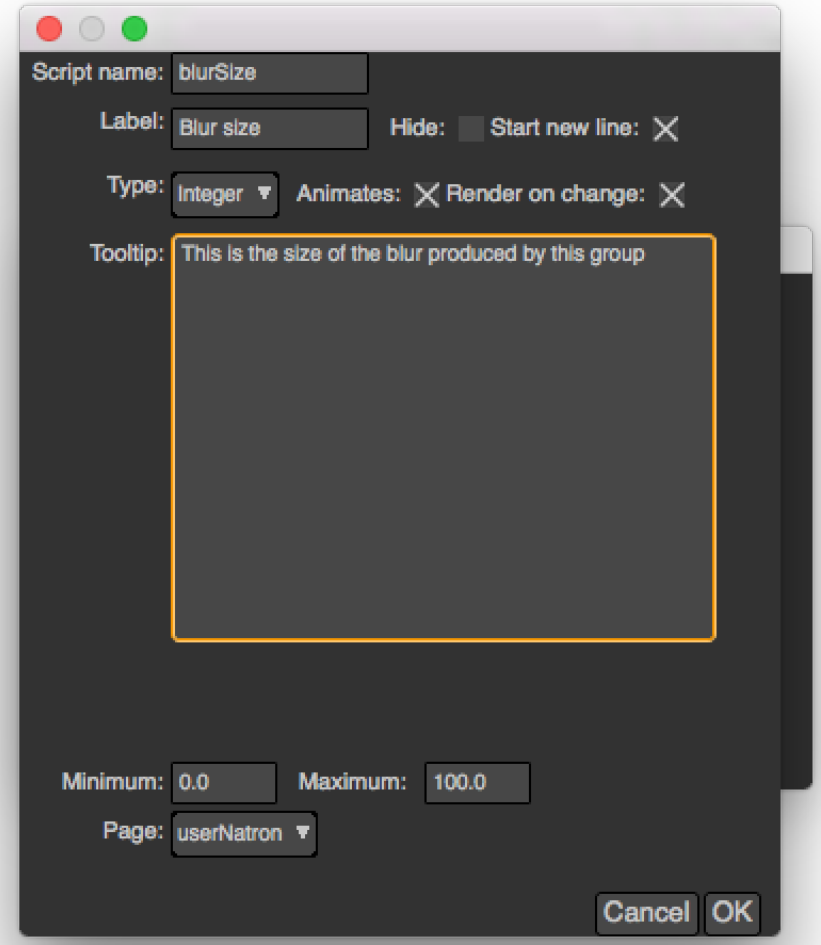
In this dialog you can configure all the properties of the parameter exactly like you would do using the *Python API*.

Once created, the new parameter can be found in the "User" page of the settings panel:

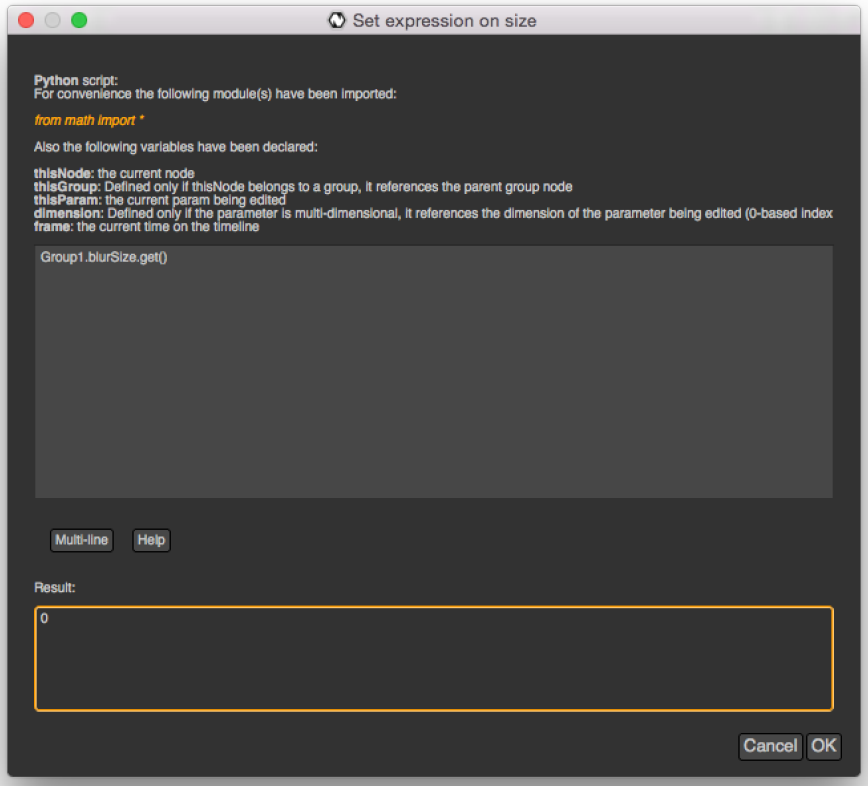
We can then set for instance an expression on the internal blur size parameter to copy the value of the blur size parameter we just added to the group node:

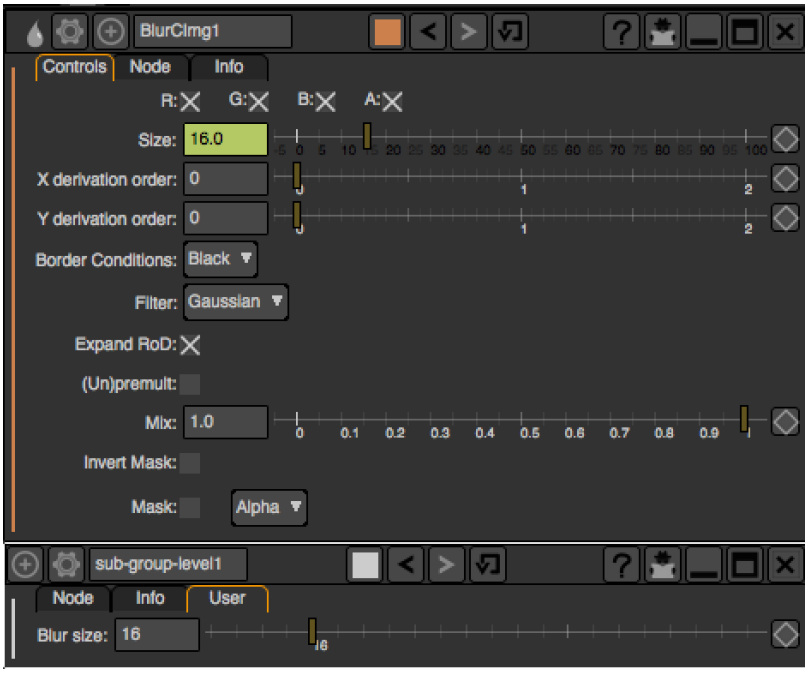
The expression is now visible in a green-ish color on the parameter in the settings panel and the node on the node-graph has a green "E" indicator.

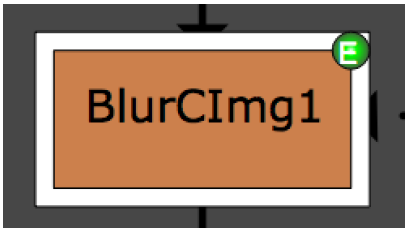

userNatron
Add
Edit
Delete
Up
Down
Close


Script name: blurSize
Label: Blur size
Hide:
Start new line:
Type: Integer
Animates:
Render on change:
Tooltip: This is the size of the blur produced by this group
Minimum: 0.0
Maximum: 100.0
Page: userNatron
Cancel
OK

sub-group-level1
Node
Info
User
Blur size: 0
blurSize


Set expression on size
Python script:
For convenience the following module(s) have been imported:
from math import *
Also the following variables have been declared:
thisNode: the current node
thisGroup: Defined only if thisNode belongs to a group, it references the parent group node
thisParam: the current param being edited
dimension: Defined only if the parameter is multi-dimensional, it references the dimension of the parameter being edited (0-based index
frame: the current time on the timeline
Group1.blurSize.get()
Multi-line
Help
Result:
0
Cancel
OK

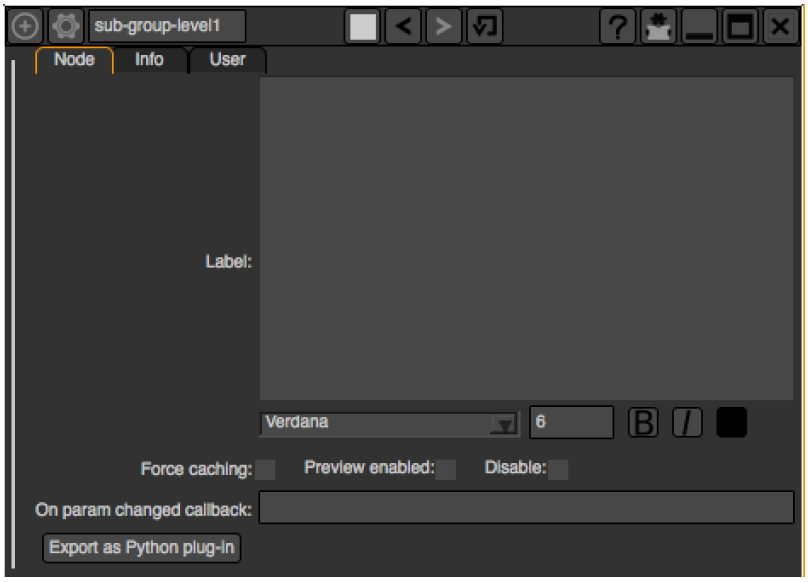

BlurCImg1
Controls
Node
Info
R:
G:
B:
A:
Size:
16.0
X derivation order:
0
Y derivation order:
0
Border Conditions:
Black
Filter:
Gaussian
Expand RoD:
(Un)premult:
Mix:
1.0
Invert Mask:
Mask:
Alpha
sub-group-level1
Node
Info
User
Blur size:
16


BlurCImg1

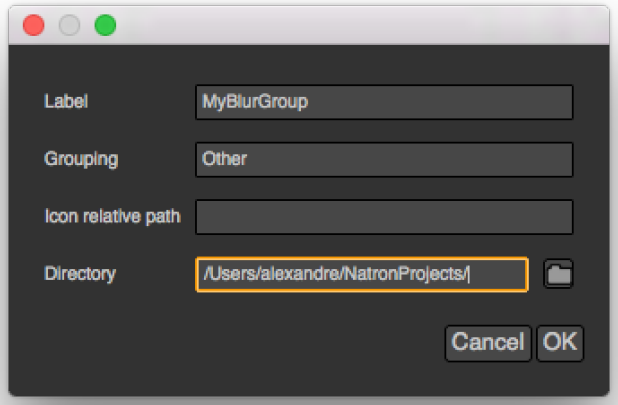
### Exporting a group

Once your group is setup correctly, you can *export* it as a Python script that Natron will generate automatically. We call them *PyPlugs*.

To do so, click the **Export as Python plug-in** button in the "Node" page of the settings panel of the Group node.




Exporting a group as a plug-in, means that it will create a Python script that will be able to re-create the group entirely and that will be loaded on startup like any other plug-in. That means that the group will also appear in the left toolbar of Natron and can potentially have an icon too.




The *Label* is the name of the plug-in as it will appear in the user interface. It should not contain spaces or non Python friendly characters as it is going to be used as variable names in several places.

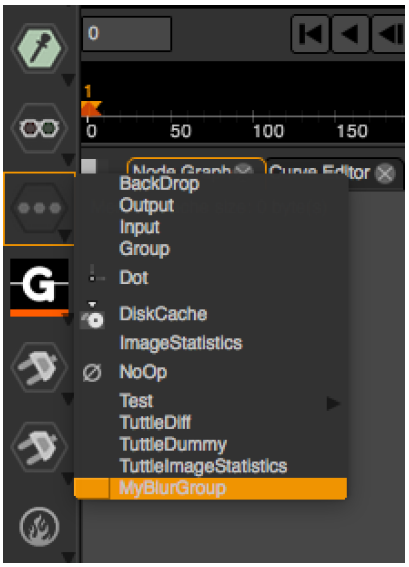
The *Grouping* is the tool-button under which the plug-in should appear. It accepts sub-menus notation like this: "Inria/StereoGroups"

The *Icon relative path* is the filepath to an image which should be used as icon for the plug-in. Note that it is a relative path to the location of the python script.

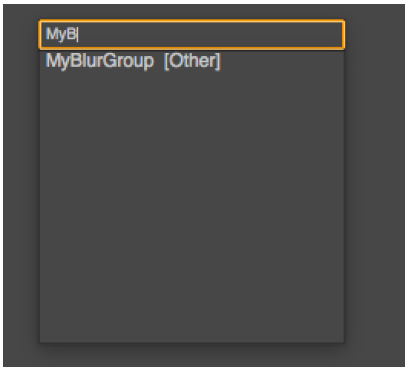
The *directory* is the location where the script should be written to. For the plug-in to be loaded by Natron, it should be in its *search-paths* hence if you select a directory that is not yet in the search-paths, it will prompt you to add it.

**Note:** A re-launch of Natron is required to re-scan the plug-ins and build the tool menus

Once restarted, the plug-in should now appear in the user interface




and even in the tab menu of the node-graph:




**Note:** The plug-in ID of the group will be exactly the same as the *Label* you picked when exporting it, hence when creating a node using the group from a Python script, you would do so:

app.createNode("MyBlurGroup")

If several plug-ins have the same *pluginID*, Natron will then sort plug-ins by version.

The version of a plug-in by default when exporting it via Natron is 1.

**Warning:** If 2 plug-ins happen to have the same pluginID and version, Natron will then load the first one found in the search paths.

To change the **pluginID** and **version** of your group plug-in, you must implement the 2 following functions in the python script of the group:

```
# This function should return an int specifying the version of the plug-in
# If not implemented, Natron will use 1 by default
def getVersion():
```

(continues on next page)

(continued from previous page)

```
    return VERSION

# This function should return a string specifying the ID of the plug-in, for example
# "fr.inria.groups.customBlur"
# If not implemented, Natron will use the label as a pluginID
def getPluginID():
    return UNIQUE_ID
```

### Exporting a project as group

Similarly, Natron allows you to export the top-level node-graph as a Python group plug-in. From the "File" menu, select "Export project as group".

**Warning:** To be exportable, your project should at least contain 1 output node.

**Note:** While this functionality is made for convenience, you should be cautious, as exporting a project containing Readers will probably not work very well in another project or computer because of file-paths no longer pointing to a valid location.

**Warning:** If you were to write a group plug-in and then want to have your expressions persist when your group will be instantiated, it is important to prefix the name of the nodes you reference in your expression by the **thisGroup.** prefix. Without it, Natron thinks you're referencing a top-level node, i.e: a node which belongs to the main node-graph, however, since you're using a group, all your nodes are no longer top-level and the expression will fail.

### Moving nodes between groups

You can create a group from the selection in Natron by holding CTRL+SHIFT+G. This will effectively move all nodes selected into a new sub-group

You can also copy/cut/paste in-between groups and projects.

### Creating a group by hand

You can also write a group plug-in by hand using the *Python API* of Natron.

Natron detects a Python file within the plug-in path as a PyPlug if it contains the following line[1]:

```
# Natron PyPlug
```

There may be Python files which are neither PyPlugs or Toolsets within these directories, for example python modules.

To work as a plug-in, your script should implemented the following functions:

[1] There was a bug in Natron versions 2.1.0 through 2.3.14 which prevented loading PyPlugs and Toolsets if they did not have a line that started with:

```
# This file was automatically generated by Natron PyPlug exporter
```

```
# This function is mandatory and should return the label of the plug-in as
# visible on the user interface
def getLabel():
    return LABEL

# This function should return an int specifying the version of the plug-in
# If not implemented, Natron will use 1 by default
def getVersion():
    return VERSION

# This function should return a string specifying the ID of the plug-in, for example
# "fr.inria.groups.customBlur"
# If not implemented, Natron will use the label as a pluginID
def getPluginID():
    return UNIQUE_ID

# This function should return a string specifying the relative file path of an image
# file relative to the location of this Python script.
# This function is optional.
def getIconPath():
    return ICON_PATH

# This function is mandatory and should return the plug-in grouping, e.g.:
# "Other/Groups"
def getGrouping():
    return GROUPING

# This function is optional and should return a string describing the plug-in to the␣
↪user.
# This is the text that will show up when the user press the "?" button on the␣
↪settings panel.
def getDescription():
    return DESCRIPTION

# This function is mandatory and should re-create all the nodes and parameters state
# of the group.
# The group parameter is a group node that has been created by Natron and that  will␣
↪host all
# the internal nodes created by this function.
# The app parameter is for convenience to have access in a generic way to the app␣
↪object,
# no matter in which project instance your script is invoked in.
def createInstance(app, group):
    ...
```

The Python group plug-ins generated automatically by Natron are a good start to figure out how to write scripts yourself.

**Warning:** Python group plug-ins should avoid using any functionality provided by the *NatronGui* module because it would then break their compatibility when working in command-line background mode. The reason behind this is that the Python module NatronGui is not imported in command-line mode because internally it relies on the QtGui library, which may not be present on some render-farms. Attempts to load PyPlugs relaying on the NatronGui module would then fail and the rendering would abort.

**Warning:** Note that PyPlugs are **imported** by Natron which means that the script will not have access to any external variable declared by Natron except the variables passed to the createInstance function or the attributes of the modules imported.

### Adding hand-written code (callbacks, etc...)

It is common to add hand-written code to a PyPlug. When making changes to the PyPlug from the GUI of Natron, exporting it again will overwrite any change made to the python script of the PyPlug. In order to help development, all hand-written code can be written in a separate script with the **same** name of the original Python script but ending with *Ext.py*, e.g.:

MyPyPlugExt.py

This extension script can contain for example the definition of all callbacks used in the PyPlug. When calling the *createInstance(app,group)* function, the PyPlug will call right at the end of the function the *createInstanceExt(app,group)* function. You can define it in your *extension script* if you want to apply extra steps to the creation of the group. For example you might want to actually set the callbacks on the group:

```
#This is in MyPyPlugExt.py

def paramChangedCallback(thisParam, thisNode, thisGroup, app, userEdited):
    print thisParam.getScriptName()

def createInstanceExt(app,group):
    # Note that the callback belongs to the PyPlug to so we use it as prefix
    group.onParamChanged.set("MyPyPlug.paramChangedCallback")
```

**Note:** Note that callbacks don't have to be registered with the extension module prefix but just with the PyPlug's name prefix since the *"from ... import *"* statement is made to import the extensions script.

### Starting Natron with a script in command line

Natron can be started with a Python script as argument.

When used in background mode (i.e: using NatronRenderer or Natron with the option **-b**) Natron will do the following steps:

- Source the script
- If found, run a function with the following signature *createInstance(app,group)*
- Start rendering the specified writer nodes (with the **-w** option) and/or the *Output* nodes (with the **-o** option)

This allows one to pass a group plug-in to Natron and render it easily if needed. Also, it can take arbitrary scripts which are not necessarily group plug-ins.

When Natron is launched in GUI mode but with a Python script in argument, it will do the following steps:

- Source the script
- If found, run a function with the following signature *createInstance(app,group)*

#### Toolsets

Toolsets in Natron are a predefined set of actions that will be applied to the node-graph. They work exactly like PyPlugs except that no actual group node will be created, only the content of the *createInstance(app,group)* function will be executed.

This useful to create pre-defined graphs, for example like the Split and Join plug-in in the Views menu.

To be recognized as a toolset, your PyPlug must implement the following function:

```
def getIsToolset():
    return True
```

Also the **group** parameter passed to the *createInstance(app,group)* function will be *None* because no group node is actually involved.

As with regular PyPlugs, the file must also contrain the line[Page 1570, 1]:

```
# Natron PyPlug
```

### 3.3.5 Using Callbacks

*Callbacks* are functions that are executed after or before a certain event in Natron. They are Python-defined methods that you declare yourself and then register to Natron in a different manner for each callback.

This document describes the signature that your different callbacks must have in order to work for each event. The parameters of your declaration must match exactly the same signature otherwise the function call will not work.

**Warning:** Note that callbacks will be called in background and GUI modes, hence you should wrap all GUI code by the following condition:

```
if not NatronEngine.natron.isBackground():
    #...do gui stuff
```

#### Callback persistence

If you want your callback to persist 2 runs of Natron; it is necessary that you define it in a script that is loaded by Natron, that is, either the **init.py** script (or **initGui.py** if you want it only available in GUI mode) or the script of a Python group plug-in (or its extension script, see *here*). See *this section* for more infos.

Here is the list of the different callbacks:

#### The param changed callback

This function is called every times the value of a *parameter* changes. This callback is available for all objects that can hold parameters,namely:

- *Effect*
- *PyPanel*
- *PyModalDialog*

The signature of the callback used on the *Effect* is:

```
callback(thisParam, thisNode, thisGroup, app, userEdited)
```

- **thisParam** : This is a *Param* pointing to the parameter which just had its value changed.
- **thisNode** : This is a *Effect* pointing to the effect holding **thisParam**

- **thisGroup** : This is a *Effect* pointing to the group holding **thisNode** or **app** otherwise if the node is in the main node-graph.
- **app** : This variable will be set so it points to the correct *application instance*.
- **userEdited** : This indicates whether or not the parameter change is due to user interaction (i.e: because the user changed the value by theirself) or due to another parameter changing the value of the parameter via a derivative of the `setValue(value)` function.

For the *parameter changed callback* of *PyPanel* and *PyModalDialog*, the signature of the callback function is:

callback(paramName, app, userEdited)

- **paramName** indicating the *script-name* of the parameter which just had its value changed.
- **app** : This variable will be set so it points to the correct *application instance*.
- **userEdited** : This indicates whether or not the parameter change is due to user interaction (i.e: because the user changed the value by theirself) or due to another parameter changing the value of the parameter via a derivative of the `setValue(value)` function.

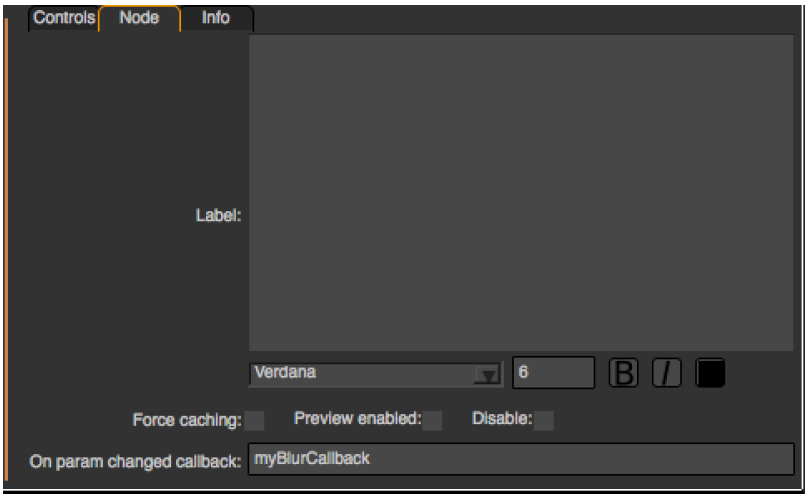
---

**Note:** The difference between the callbacks on *PyPanel* and *PyModalDialog* and *Effect* is due to technical reasons: mainly because the parameters of the *PyPanel* class and *PyModalDialog* are not declared as attributes of the object.

---

### Registering the param changed callback

To register the param changed callback of an *Effect*, you can do so in the settings panel of the node, in the "Node" tab, by entering the name of your Python function:




You can also set the callback directly from the script: The callback is just another *parameter* of the node, on which you can call `setValue(value)` to set the name of the callback

```
def myBlurCallback(thisParam, thisNode, thisGroup, app, userEdited):
    ...

app.BlurCImg1.onParamChanged.set("myBlurCallback")
```

---

**Note:** If the callback is defined in a separate python file, such as the python script of a python group plug-in, then do not forget the module prefix, e.g.:

app.MyPlugin1.BlurCImg1.onParamChanged.set("MyPlugin.myBlurCallback")

---

#### Example

```
# This simple callback just prints a string when the "size" parameter of the BlurCImg
# node changes
def myBlurCallback(thisParam, thisNode, thisGroup, app, userEdited):
    if thisParam == thisNode.size:
        print("The size of the blur just changed!")

app.BlurCImg1.onParamChanged.set("myBlurCallback")
```

### Using the param changed callback for PyModalDialog and PyPanel

To register the callback to the object, use the `setParamChangedCallback(pythonFunctionName)` function.

The following example is taken from the initGui.py script provided as example in *this section*.

#### Example

```
#Callback called when a parameter of the player changes
#The variable paramName is declared by Natron; indicating the name of the parameter␣
↪which just had its value changed
def myPlayerParamChangedCallback(paramName, app, userEdited):

    viewer = app.getViewer("Viewer1")
    if viewer == None:
        return
    if paramName == "previous":
        viewer.seek(viewer.getCurrentFrame() - 1)
    elif paramName == "backward":
        viewer.startBackward()
    elif paramName == "forward":
        viewer.startForward()
    elif paramName == "next":
        viewer.seek(viewer.getCurrentFrame() + 1)
    elif paramName == "stop":
        viewer.pause()


def createMyPlayer():
    app.player = NatronGui.PyPanel("fr.inria.myplayer","My Player",True,app)
    #...
    app.player.setParamChangedCallback("myPlayerParamChangedCallback")
```

### The After input changed callback

Similarly to the param changed callback, this function is called whenever an input connection of the node is changed. The signature is:

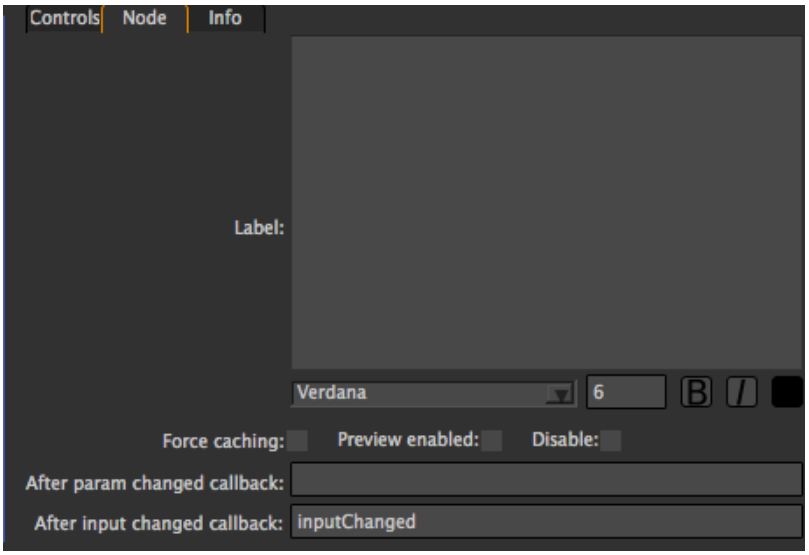
```
callback(inputIndex, thisNode, thisGroup, app)
```

**Note:** This function will be called even when loading a project

- **inputIndex** : This is the input which just got connected/disconnected. You can fetch the input at the given index with the `getInput(index)` function of the *Effect* class.
- **thisNode** : This is a *Effect* holding the input which just changed
- **thisGroup** : This is a *Effect* pointing to the group holding **thisNode**. Note that it will be declared only if **thisNode** is part of a group.
- **app** : points to the correct *application instance*.

### Registering the input changed callback

To register the input changed callback of an *Effect*, you can do so in the settings panel of the node, in the "Node" tab, by entering the name of your Python function:




You can also set the callback directly from the script: The callback is just another *parameter* of the node, on which you can call `setValue(value)` to set the name of the callback

```
def inputChangedCallback(inputIndex, thisNode, thisGroup, app):
    ...

app.Merge1.onInputChanged.set("inputChangedCallback")
```

### Example

```
# This simple callback just prints the input node name if connected or "None"␣
↪otherwise
# node changes
def inputChangedCallback(inputIndex, thisNode, thisGroup, app):
    inp = thisNode.getInput(inputIndex)
    if not inp is None:
        print("Input ",inputIndex," is ",inp.getScriptName())
    else:
        print("Input ",inputIndex," is None")

app.Merge1.onInputChanged.set("inputChangedCallback")
```

### The After project created callback

This function is called whenever a new project is created, that is either when launching Natron without loading a project, or when clicking "Create a new project" or "Close project".

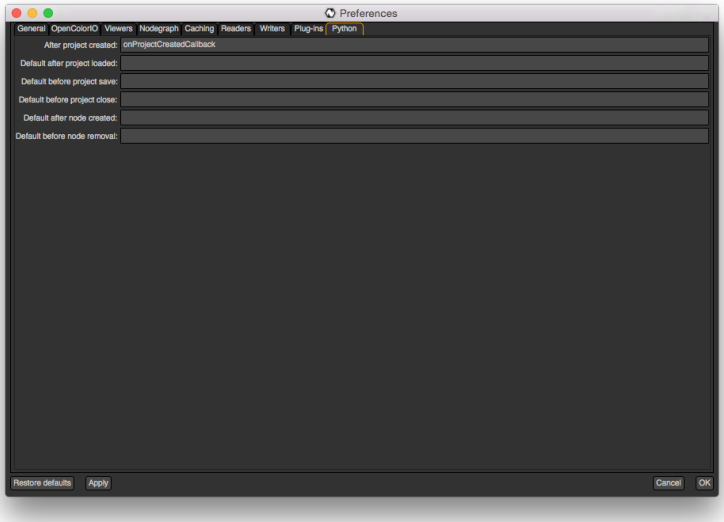
---

**Note:** Note that this function is never called when a project is loaded either via an auto-save or from user interaction.

---

The **app** variable will be set so it points to the correct *application instance* being created.

You can set the callback via the *afterProjectCreated* parameter of the settings of Natron.




This is a good place to create custom panels and/or setup the node-graph with node presets.

Example, taken from the initGui.py script provided as example in *this section*:

```
def onProjectCreated():

    #Always create our icon viewer on project creation
    createIconViewer()


natron.settings.afterProjectCreated.set("onProjectCreated")
```

### The After project loaded callback

This function is very similar to the After project created callback but is a per-project callback, called only when a project is loaded from an auto-save or from user interaction. The signature is:

```
callback(app)
```

- **app** : points to the correct *application instance* being loaded.

You can set this callback in the project settings:

This is a good place to do some checks to opened projects or to setup something:

```
def onProjectLoaded(app):

    if not natron.isBackground():
        if app.getUserPanel("fr.inria.iconviewer") is None:
            createIconViewer()

app.afterProjectLoad.set("onProjectLoaded")
```

**Note:** You can set a default After project loaded callback for all new projects in the *Preferences–>Python* tab.

### The Before project save callback

This function will be called prior to saving a project either via an auto-save or from user interaction. The signature is:

```
callback(filename, app, autoSave)
```

- **filename** : This is the file-path where the project is initially going to be saved.
- **app** : points to the correct *application instance* being created.
- **autoSave** : This indicates whether the save was originated from an auto-save or from user interaction.

**Warning:** This function should return the filename under which the project should really be saved.

You can set the callback from the project settings:

```
def beforeProjectSave(filename, app, autoSave):
    print("Saving project under: ",filename)
    return filename

app.beforeProjectSave.set("beforeProjectSave")
```

**Note:** You can set a default Before project save callback for all new projects in the *Preferences–>Python* tab.

### The Before project close callback

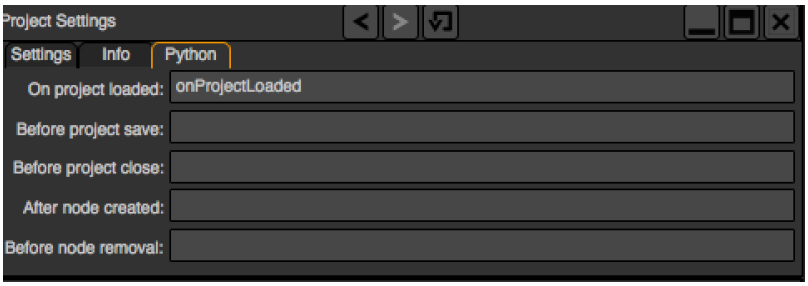
This function is called prior to closing a project either because the application is about to quit or because the user closed the project. The signature is:

```
callback(app)
```

- **app** : points to the correct *application instance* being closed.

This function can be used to synchronize any other device or piece of software communicating with Natron.

You can set the callback from the project settings:




```
def beforeProjectClose(app):
    print("Closing project)

app.beforeProjectClose.set("beforeProjectClose")
```

**Note:** You can set a default Before project close callback for all new projects in the *Preferences–>Python* tab.

### The After node created callback

This function is called after creating a node in Natron. The signature is:

```
callback(thisNode, app, userEdited)
```

- **thisNode** points to the *node* that has been created.
- **app** points to the correct *application instance*.
- **userEdited** will be *True* if the node was created by the user (or by a script using the `createNode(pluginID, version,group)` function) or *False* if the node was created by actions such as pasting a node or when the project is loaded.

This is a good place to change default parameters values.

You can set the callback from the project settings:

```
def onNodeCreated(thisNode, app, userEdited):
    print(thisNode.getScriptName()," was just created")
    if userEdited:
        print(" due to user interaction")
    else:
        print(" due to project load or node pasting")
```

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```
app.afterNodeCreated.set("onNodeCreated")
```

**Note:** You can set a default After node created callback for all new projects in the *Preferences–>Python* tab.

This callback can also be set in the *Node* tab of any **Group** node (or *PyPlug*). If set on the Group, the callback will be invoked for the *Group* node and all its direct children (not recursively).

### The Before node removal callback:

This function is called prior to deleting a node in Natron. The signature is:

```
callback(thisNode, app)
```

- **thisNode** : points to the *node* about to be deleted.
- **app** : points to the correct *application instance*.

**Warning:** This function will **NOT** be called when the project is closing

You can set the callback from the project settings:

```
def beforeNodeDeleted(thisNode, app):
    print(thisNode.getScriptName()," is going to be destroyed")


app.beforeNodeRemoval.set("beforeNodeDeleted")
```

**Note:** You can set a default Before node removal callback for all new projects in the *Preferences–>Python* tab.

This callback can also be set in the *Node* tab of any **Group** node (or *PyPlug*). If set on the Group, the callback will be invoked for the *Group* node and all its direct children (not recursively).

### The Before frame render callback:

This function is called prior to rendering any frame with a Write node. The signature is:

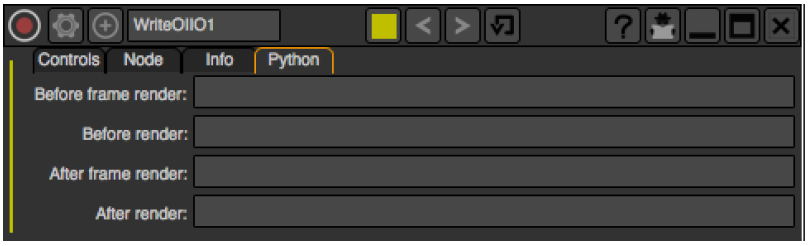
```
callback(frame, thisNode, app)
```

- **thisNode** : points to the *write node*.
- **app** : points to the correct *application instance*.
- **frame**: The frame that is about to be rendered

To execute code specific when in background render mode or in GUI mode, use the following condition

```
if natron.isBackground():
    #We are in background mode
```

You can set the callback from the Write node settings panel in the "Python" tab.




This function can be used to communicate with external programs for example.

**Warning:** Any exception thrown in this callback will abort the render

### The After frame rendered callback:

**This function is called after each frame is finished rendering with a Write node.**
The signature is:

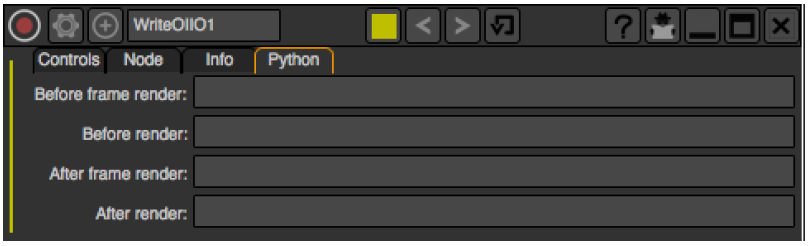
```
callback(frame, thisNode, app)
```

- **thisNode** : points to the *write node*.
- **app** : points to the correct *application instance*.
- **frame**: The frame that is about to be rendered

To execute code specific when in background render mode or in GUI mode, use the following condition

```
if natron.isBackground():
    #We are in background mode
```

You can set the callback from the Write node settings panel in the "Python" tab.



This function can be used to communicate with external programs for example.

**Warning:** Any exception thrown in this callback will abort the render

### The Before render callback:

This function is called once before starting rendering the first frame of a sequence with the Write node. The signature is:

```
callback(frame, thisNode, app)
```

- **thisNode** : points to the *write node*.
- **app** : points to the correct *application instance*.

To execute code specific when in background render mode or in GUI mode, use the following condition

```
if natron.isBackground():
    #We are in background mode
```

You can set the callback from the Write node settings panel in the "Python" tab.

This function can be used to communicate with external programs for example.

**Warning:** Any exception thrown in this callback will abort the render

### The After render callback:

This function is called once after the rendering of the last frame is finished with the Write node or if the render was aborted. The signature is:

```
callback(aborted, thisNode, app)
```

- **aborted** : *True* if the rendering was aborted or *False* otherwise.
- **thisNode** : points to the *write node*.
- **app** : points to the correct *application instance*.

To execute code specific when in background render mode or in GUI mode, use the following condition

```
if natron.isBackground():
    #We are in background mode
```

You can set the callback from the Write node settings panel in the "Python" tab.

This function can be used to communicate with external programs for example.

### 3.3.6 Rendering

To start rendering in Natron you need to use the `render(effect,firstFrame,lastFrame,frameStep)` or `render(tasks)` functions of the *App* class. The parameters passed are:

- The *writeNode*: This should point to the node you want to start rendering with
- The *firstFrame*: This is the first frame to render in the sequence
- The *lastFrame*: This is the last frame to render in the sequence
- The *frameStep*: This is the number of frames the timeline should step before rendering a new frame, e.g. To render frames 1,3,5,7,9, you can use a frameStep of 2

Natron always renders from the *firstFrame* to the *lastFrame*. Generally Natron uses multiple threads to render concurrently several frames, you can control this behaviour with the parameters in the *settings*.

Let's imagine there's a node called **Write1** in your project and that you want to render frames 20 to 50 included, you would call it the following way:

```
app.render(app.Write1,20,50)
```

---

**Note:** Note that when the render is launched from a *GuiApp*, it is not *blocking*, i.e: this function will return immediately even though the render is not finished.

On the other hand, if called from a *background application*, this call will be blocking and return once the render is finished.

If you need to have a blocking render whilst using Natron Gui, you can use the `renderBlocking()` function but bear in mind that it will freeze the user interface until the render is finished.

---

This function can take an optional *frameStep* parameter:

```
#This will render frames 1,4,7,10,13,16,19
app.render(app.Write1, 1,20, 3)
```

You can use the *after render callback* to call code to be run once the render is finished.

For convenience, the *App* class also have a `render(tasks)` function taking a sequence of tuples (Effect,int,int) ( or (Effect,int,int,int) to specify a frameStep).

Let's imagine we were to render 2 write nodes concurrently, we could do the following call:

```
app.render([ (app.Write1,1,10),
             (app.WriteFFmpeg1,1,50,2) ])
```

---

**Note:** The same restrictions apply to this variant of the render function: it is blocking in background mode and not blocking in GUI mode.

---

When executing multiple renders with the same call, each render is called concurrently from the others.

#### Using the DiskCache node

All the above can be applied to the **DiskCache** node to pre-render a sequence. Just pass the DiskCache node instead of the Write node to the render function.

### 3.3.7 Using the rotoscoping functionalities

All rotoscoping functionalities are gathered in the *Roto* class. For now, only the roto node can have a *Roto* object. The *Roto* object is *auto-declared* by Natron and can be accessed as an attribute of the roto node:

```
app.Roto1.roto
```

All the objects hierarchy in the *Roto* object is broken up in 2 classes:

- *BezierCurve*: This class represents a single bezier, may it be an ellipse, rectangle or bezier.
- *Layer* : This is a container for BezierCurves and Layers

*Beziers* and *layers* can be accessed via their script-name directly:

```
app.Roto1.roto.Layer1.Bezier1
```

The *script-name* of the roto items can be found in the *settings panel* of the Roto node.

#### Moving items within layers

In Natron, all the items in a layer are rendered from top to bottom, meaning the bottom-most items will always appear on top of the others.

You can re-organize the tree using the functions available in the *Layer* class.

**Warning:** Removing an item from a layer or inserting it in a layer will change the auto-declared variable, e.g.:

fromLayer = app.Roto1.roto.Layer1 toLayer = app.Roto1.roto.Layer2 item = app.Roto1.roto.Layer1.Bezier1 toLayer.addItem(item)

#Now item is referenced from app.Roto1.roto.Layer2.Bezier1

#### Creating layers

To create a new *BezierCurve*, use the `createLayer()` function made available by the *Roto* class.

#### Creating shapes

To create a new *BezierCurve*, use one of the following functions made available by the *Roto* class:

- `createBezier(x,y,time)`
- `createEllipse(x,y,diameter,fromCenter,time)`
- `createRectangle(x,y,size,time)`

Once created, the Bezier will have at least 1 control point (4 for ellipses and rectangles) and one keyframe at the time specified in parameter.

A Bezier initially is in an *opened* state, meaning it doesn't produce a shape yet (unless it is a rectangle or ellipse). At this stage you can then add control points using the :func`addControlPoint(x,y)<NatronEngine.BezierCurve.addControlPoint>` function. Once you're one adding control points, call the function `setCurveFinished(finished)` to close the shape by connecting the last control point with the first.

Once finished, you can refine the Bezier curve by adding control points with the `addControlPointOnSegment(index,t)` function. You can then move and remove control points of the Bezier.

You can also slave a control point to a track using the `slavePointToTrack(index,trackTime,trackCenter)` function.

A Bezier curve has several properties that the API allows you to modify:

- opacity
- color
- feather distance
- feather fall-off
- enable state
- overlay color
- compositing operator

Most of them are available via a *parameter*, e.g.:

colorParam = bezier.getColorParam() bezierColor = colorParam.get(time)

### 3.3.8 Using the tracker functionalities

All tracking functionalities are gathered in the *Tracker* class. For now, only the tracker node can have a *Tracker* object. The *Tracker* object is *auto-declared* by Natron and can be accessed as an attribute of the tracker node:

```
app.Tracker1.tracker
```

The tracker object itself is a container for *tracks*. The *Track* class represent one marker as visible by the user on the viewer.

*Tracks* can be accessed via their script-name directly:

```
app.Tracker1.tracker.track1
```

The *script-name* of the tracks can be found in the *settings panel* of the Tracker node.

#### Getting data out of the tracks:

In Natron, a *track* contains internally just *parameters* which can hold animated data just like regular parameters of the *effect class*

You can access the parameters directly with their script-name:

```
app.Tracker1.tracker.track1.centerPoint
```

Or you can use the `getParam(paramScriptName)` function:

```
app.Tracker1.tracker.track1.getParam("centerPoint")
```

Here is an example that retrieves all keyframes available on the center point for a given track:

```
myTrack = app.Tracker1.tracker.track1

keyframes = []

# get the number of keys for the X dimension only and try match the Y keyframes
```

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```
nKeys = myTrack.centerPoint.getNumKeys(0)
for k in range(0,nKeys):

    # getKeyTime returns a tuple with a boolean value indicating if it succeeded and
    # the keyframe time

    gotXKeyTuple = myTrack.centerPoint.getKeyTime(k, 0)
    frame = gotXKeyTuple[1]

    # Only consider keyframes which have an X and Y value
    # If Y does not have a keyframe at this frame, ignore the keyframe
    # getKeyIndex returns a value >=0 if there is a keyframe
    yKeyIndex = myTrack.centerPoint.getKeyIndex(frame, 1)

    if yKeyIndex == -1:
        continue

    # Note that even if the x curve or y curve didn't have a keyframe we
    # could still call getValueAtTime but the value would be interpolated by
    # Natron with surrounding keyframes, which is not what we want.

    x = myTrack.centerPoint.getValueAtTime(frame, 0)
    y = myTrack.centerPoint.getValueAtTime(frame, 1)

    keyframes.append((x,y))

print keyframes
```

#### Creating Tracks

To create a new *track*, use the `createTrack()` function made available by the *Tracker* class. You can then set values on parameters much like everything else in Natron.

### 3.3.9 Modal dialogs

Modal dialogs are windows (or popup) that inform the user about something or ask for some information and that does not allow any other action to be performed while the dialog is opened.

This can be used as a quick way to retrieve user inputs.

#### Simple dialogs

The most simple dialogs in Natron are the information/warning/error/question dialog which basically just take some text in input and may return a reply from the user

```
natron.informationDialog("Info","Here is a relevant info")
```

```
natron.warningDialog("Warning","Warning you might lose everything on your computer")
```

```
natron.errorDialog("Error","Something went wrong, oops.")
```

```
reply = natron.questionDialog("Question","Are you sure you paid the license for␣
↪Natron ?;)")
```

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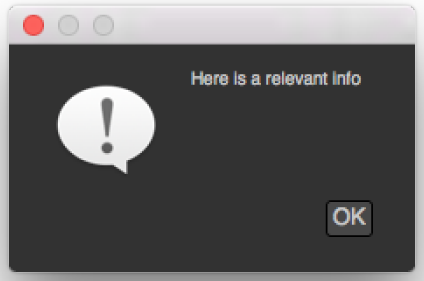
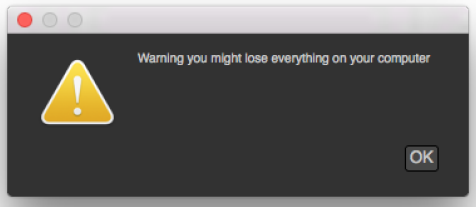
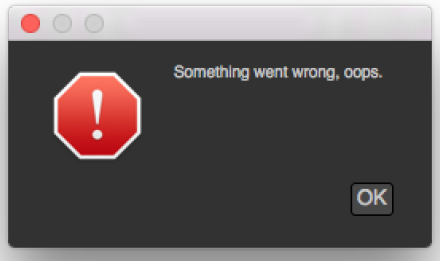

Here is a relevant info
OK


Warning you might lose everything on your computer
OK


Something went wrong, oops.
OK

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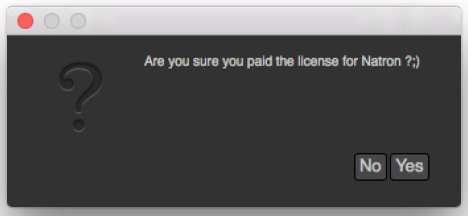
```
if reply == NatronEngine.Natron.StandardButtonEnum.eStandardButtonNo:
    ...
elif reply == NatronEngine.Natron.StandardButtonEnum.eStandardButtonYes:
    ...
```




### More refined dialogs

To create dialogs that may request some information such as colors, frame range, coordinates or text input, you can create *modal dialogs*.

Basically you can add *user parameters*, and retrieve their value afterwards when the user pressed **OK**.

You can start adding user parameters using all the `createXParam` functions inherited from the *UserParamHolder* class. See the documentation of the *PyModalDialog* for more information:

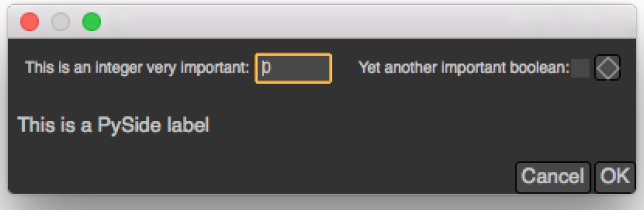
> dialog = app.createModalDialog() myInteger = dialog.createIntParam("myInt","This is an integer very important") myInteger.setAnimationEnabled(False) myInteger.setAddNewLine(False)
>
> #Create a boolean on the same line myBoolean = dialog.createBooleanParam("myBool","Yet another important boolean")
>
> dialog.refreshUserParamsGUI()

You can also add custom PySide widgets that can be inserted **after** any user parameter(s) using the `addWidget(widget)` and `insertWidget(index,widget)` functions.

```
label = QLabel("This is a PySide label")
dialog.addWidget(label)
```

To make the dialog show-up, use the `exec()` function on the dialog. This function will return once the user pressed either "OK" or "Canceled":

```
if dialog.exec():
    #User pressed OK
```



You can add a custom callback when a parameter changes, for instance to hide another parameter:

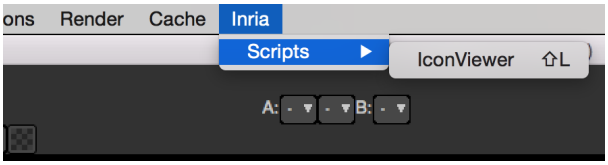
```
#Callback called when a parameter of  changes
#The variable paramName is declared by Natron; indicating the name of the parameter␣
↪which just had its value changed
def paramChangedCallback():
    if paramName == "myBool":
        myInteger.setVisible(myBoolean.get())

dialog.setParamChangedCallback("paramChangedCallback")
```

### 3.3.10 User menu commands

In Natron you can add multiple menu commands that will then be available to the user via the menu. You can also assign it a shortcut and the user will be able to modify it via the shortcuts editor.

#### Project-wide menu commands:




To add a project-wipe menu command to the application's menu-bar, you need to use the `addMenuCommand(grouping,function,key,modifiers)` of the *PyGuiApplication* class to register it:

```
def createIconViewer():
    ...

#Add a custom menu entry with a shortcut to create our icon viewer
NatronGui.natron.addMenuCommand("Inria/Scripts/IconViewer","createIconViewer",QtCore.
↪Qt.Key.Key_L,QtCore.Qt.KeyboardModifier.ShiftModifier)
```

Note that this function is to be called on the whole **application** via the **natron** variable and is not *per-project* unlike most functions that are generally called on the **app** object.

> **Warning:** This function can only be called in the startup script **init.py** and will have no effect otherwise. This is not a dynamic function and will not create menu entries on the fly.

### 3.3.11 PySide panels

To create a non-modal *panel* that can be saved in the project's layout and docked into the application's *tab-widgets*, there is 2 possible way of doing it:

- Sub-class *PyPanel* and create your own GUI using PySide
- Use the API proposed by *PyPanel* to add custom user *parameters* as done for *PyModalDialog*.

Generally you should define your panels in the **initGui.py** script (see *startup-scripts*). You can also define the panel in the *Script Editor* at run-time of Natron, though this will not persist when Natron is closed.

To make your panel be created upon new project created, register a Python callback in the *Preferences–>Python* tab in the parameter *After project created*. This callback will not be called for project being loaded either via an auto-save or via a user action.

```
#This goes in initGui.py

def createMyPanel():
    #Create panel
    ...

def onProjectCreatedCallback():
    createMyPanel()
```

**Warning:** When the initGui.py script is executed, the *app* variable (or any derivative such as *app1 app2* etc...) does not exist since no project is instantiated yet. The purpose of the script is not to instantiate the GUI per-say but to define classes and functions that will be used later on by *application instances*.

Python panels can be re-created for existing projects using serialization functionalities explained *here* See the example below (the whole script is available attached below)

```
# We override the save() function and save the filename
def save(self):
    return self.locationEdit.text()

# We override the restore(data) function and restore the current image
def restore(self,data):

    self.locationEdit.setText(data)
    self.label.setPixmap(QPixmap(data))
```

The sole requirement to save a panel in the layout is to call the `registerPythonPanel(panel,function)` function of *GuiApp*:

```
app.registerPythonPanel(app.mypanel,"createIconViewer")
```

See the details of the *PyPanel* class for more explanation on how to sub-class it.

Also check-out the complete example *source code* below.

### Using user parameters:

Let's assume we have no use to make our own widgets and want quick *parameters* fresh and ready, we just have to use the *PyPanel* class without sub-classing it:

```
#Callback called when a parameter of the player changes
#The variable paramName is declared by Natron; indicating the name of the parameter␣
↪which just had its value changed
def myPlayerParamChangedCallback():

    viewer = app.getViewer("Viewer1")
    if viewer == None:
        return
    if paramName == "previous":
        viewer.seek(viewer.getCurrentFrame() - 1)



def createMyPlayer():
```

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```
    #Create a panel named "My Panel" that will use user parameters
    app.player = NatronGui.PyPanel("fr.inria.myplayer","My Player",True,app)

    #Add a push-button parameter named "Previous"
    app.player.previousFrameButton = app.player.createButtonParam("previous","Previous
↪")

    #Refresh user parameters GUI, necessary after changes to static properties of␣
↪parameters.
    #See the Param class documentation
    app.player.refreshUserParamsGUI()

    #Set a callback that will be called upon parameter change
    app.player.setParamChangedCallback("myPlayerParamChangedCallback")
```

**Note:** For convenience, there is a way to also add custom widgets to python panels that are using user parameters with the `addWidget(widget)` and `insertWidget(index,widget)` functions. However the widgets will be appended **after** any user parameter defined.

### Managing panels and panes

Panels in Natron all have an underlying script-name, that is the one you gave as first parameter to the constructor of *PyPanel*.

You can then move the *PyPanel* between the application's *panes* by calling the function `moveTab(scriptName, pane)` of *GuiApp*.

**Note:** All application's panes are *auto-declared* by Natron and can be referenced directly by a variable, such as:

app.pane2

Panels also have a script-name but only *viewers* and *user panels* are auto-declared by Natron:

```
app.pane2.Viewer1
app.pane1.myPySidePanelScriptName
```

### Source code of the example initGui.py

```
#This Source Code Form is subject to the terms of the Mozilla Public
#License, v. 2.0. If a copy of the MPL was not distributed with this
#file, You can obtain one at http://mozilla.org/MPL/2.0/. */
#Created by Alexandre GAUTHIER-FOICHAT on 01/27/2015.

from qtpy.QtGui import *
from qtpy.QtCore import *

#To import the variable "natron"
from NatronGui import *

#Callback called when a parameter of the player changes
#The variable paramName is declared by Natron; indicating the name of the parameter␣
↪which just had its value changed
```

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```
def myPlayerParamChangedCallback(paramName, app, userEdited):

    viewer = app.getViewer("Viewer1")
    if viewer == None:
        return
    if paramName == "previous":
        viewer.seek(viewer.getCurrentFrame() - 1)
    elif paramName == "backward":
        viewer.startBackward()
    elif paramName == "forward":
        viewer.startForward()
    elif paramName == "next":
        viewer.seek(viewer.getCurrentFrame() + 1)
    elif paramName == "stop":
        viewer.pause()

def createMyPlayer():

    app.player = NatronGui.PyPanel("fr.inria.myplayer","My Player",True,app)
    app.player.previousFrameButton = app.player.createButtonParam("previous","Previous
↪")
    app.player.previousFrameButton.setAddNewLine(False)

    app.player.playBackwardButton = app.player.createButtonParam("backward","Rewind")
    app.player.playBackwardButton.setAddNewLine(False)

    app.player.stopButton = app.player.createButtonParam("stop","Pause")
    app.player.stopButton.setAddNewLine(False)

    app.player.playForwardButton = app.player.createButtonParam("forward","Play")
    app.player.playForwardButton.setAddNewLine(False)

    app.player.nextFrameButton = app.player.createButtonParam("next","Next")

    app.player.helpLabel = app.player.createStringParam("help","Help")
    app.player.helpLabel.setType(NatronEngine.StringParam.TypeEnum.eStringTypeLabel)
    app.player.helpLabel.set("<br><b>Previous:</b> Seek the previous frame on the␣
↪timeline</br>"
                         "<br><b>Rewind:</b> Play backward</br>"
                         "<br><b>Pause:</b> Pauses the playback</br>"
                         "<br><b>Play:</b> Play forward</br>"
                         "<br><b>Next:</b> Seek the next frame on the timeline</br>")

    app.player.refreshUserParamsGUI()
    app.player.setParamChangedCallback("myPlayerParamChangedCallback")

    #Add it to the "pane2" tab widget
    app.pane2.appendTab(app.player);

    #Register the tab to the application, so it is saved into the layout of the␣
↪project
    #and can appear in the Panes sub-menu of the "Manage layout" button (in top left-
↪hand corner of each tab widget)
    app.registerPythonPanel(app.player,"createMyPlayer")
```

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```
#A small panel to load and visualize icons/images
class IconViewer(NatronGui.PyPanel):

    #Register a custom signal
    userFileChanged = QtCore.Signal()

    #Slots should be decorated:
    #http://qt-project.org/wiki/Signals_and_Slots_in_PySide

    #This is called upon a user click on the button
    @QtCore.Slot()
    def onButtonClicked(self):
        location = self.currentApp.getFilenameDialog(("jpg","png","bmp","tif"))
        if location:
            self.locationEdit.setText(location)

            #Save the file
            self.onUserDataChanged()

        self.userFileChanged.emit()

    #This is called when the user finish editing of the line edit (when return is␣
↪pressed or focus out)
    @QtCore.Slot()
    def onLocationEditEditingFinished(self):
        #Save the file
        self.onUserDataChanged()
        self.userFileChanged.emit()

    #This is called when our custom userFileChanged signal is emitted
    @QtCore.Slot()
    def onFileChanged(self):
        self.label.setPixmap(QPixmap(self.locationEdit.text()))


    def __init__(self,scriptName,label,app):

        #Init base class, important! otherwise signals/slots won't work.
        NatronGui.PyPanel.__init__(self,scriptName, label, False, app)

        #Store the current app as it might no longer be pointing to the app at the␣
↪time being called
        #when a slot will be invoked later on
        self.currentApp = app

        #Set the layout
        self.setLayout( QVBoxLayout())

        #Create a widget container for the line edit + button
        fileContainer = QWidget(self)
        fileLayout = QHBoxLayout()
        fileContainer.setLayout(fileLayout)

        #Create the line edit, make it expand horizontally
        self.locationEdit = QLineEdit(fileContainer)
        self.locationEdit.setSizePolicy(QSizePolicy.Expanding, QSizePolicy.Preferred)
```

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```
        #Create a pushbutton
        self.button = QPushButton(fileContainer)
        #Decorate it with the open-file pixmap built-in into Natron
        buttonPixmap = natron.getIcon(NatronEngine.Natron.PixmapEnum.NATRON_PIXMAP_
↪OPEN_FILE)
        self.button.setIcon(QIcon(buttonPixmap))

        #Add widgets to the layout
        fileLayout.addWidget(self.locationEdit)
        fileLayout.addWidget(self.button)

        #Use a QLabel to display the images
        self.label = QLabel(self)

        #Init the label with the icon of Natron
        natronPixmap = natron.getIcon(NatronEngine.Natron.PixmapEnum.NATRON_PIXMAP_
↪APP_ICON)
        self.label.setPixmap(natronPixmap)
        #Built-in icons of Natron are in the resources
        self.locationEdit.setText(":/Resources/Images/natronIcon256_linux.png")

        #Make it expand in both directions so it takes all space
        self.label.setSizePolicy(QSizePolicy.Expanding, QSizePolicy.Expanding)

        #Add widgets to the layout
        self.layout().addWidget(fileContainer)
        self.layout().addWidget(self.label)

        #Make signal/slot connections
        self.button.clicked.connect(self.onButtonClicked)
        self.locationEdit.editingFinished.connect(self.onLocationEditEditingFinished)
        self.userFileChanged.connect(self.onFileChanged)

    # We override the save() function and save the filename
    def save(self):
        return self.locationEdit.text()

    # We override the restore(data) function and restore the current image
    def restore(self,data):

        self.locationEdit.setText(data)
        self.label.setPixmap(QPixmap(data))

#To be called to create a new icon viewer panel:
#Note that *app* should be defined. Generally when called from␣
↪onProjectCreatedCallback
#this is set, but when called from the Script Editor you should set it yourself␣
↪beforehand:
#app = app1
#See http://natron.readthedocs.org/en/python/natronobjects.html for more info
def createIconViewer():

    if hasattr(app,"p"):
        #The icon viewer already exists, it we override the app.p variable, then it␣
↪will destroy the previous widget
```

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```
        #and create a new one but we don't really need it

        #The warning will be displayed in the Script Editor
        print("Note for us developers: this widget already exists!")
        return

    #Create our icon viewer
    app.p = IconViewer("fr.inria.iconViewer","Icon viewer",app)

    #Add it to the "pane2" tab widget
    app.pane2.appendTab(app.p);

    #Register the tab to the application, so it is saved into the layout of the␣
↪project
    #and can appear in the Panes sub-menu of the "Manage layout" button (in top left-
↪hand corner of each tab widget)
    app.registerPythonPanel(app.p,"createIconViewer")


#Callback set in the "After project created" parameter in the Preferences-->Python␣
↪tab of Natron
#This will automatically create our panels when a new project is created
def onProjectCreatedCallback(app):
    #Always create our icon viewer on project creation, you must register this call-
↪back in the
    #"After project created callback" parameter of the Preferences-->Python tab.
    createIconViewer()

    createMyPlayer()

#Add a custom menu entry with a shortcut to create our icon viewer
natron.addMenuCommand("Inria/Scripts/IconViewer","createIconViewer",QtCore.Qt.Key.Key_
↪L,QtCore.Qt.KeyboardModifier.ShiftModifier)
```

### 3.3.12 Controlling the viewer

Natron exposes all functionalities available to the user in the Python API via the *PyViewer* class.

To retrieve a *PyViewer*, use the *auto-declared* variable:

```
app.pane2.Viewer1
```

or use the following function `getViewer(scriptName)` , passing it the *script-name* of a viewer node.

You can then control the player, the displayed channels, the current view, the current compositing operator, which are the input A and B, the frame-range, the proxy level and various other stuff.

## 3.4 Natron Python FAQ

Here are a few frequently asked questions.

There may be more answers in the Natron forum, especially in the All About Natron Python Scripting topic.

Q: How can I get the location of the current Natron executable?

```
import sys
print(sys.executable)
```

Q: How can I get all widgets from a *modal dialog*?

*PyModalDialog* inherits from Qdialog, which inherits from QObject, which has a QObject::children() method.

## 3.5 Tutorials

This section provides basic and advanced tutorials on how to exploit Natron features using python.

### 3.5.1 Nodes

This section provides basic and advanced tutorials on manipulating nodes in Natron using python.

#### Get selected nodes label

```
import os
import NatronEngine
from NatronGui import *

def getSelectedNodesLabel():

  # get current Natron instance running in memory
  app = natron.getGuiInstance(0)

  # get selected nodes
  selectedNodes = app.getSelectedNodes()

  # cycle through every selected node
  for currentNode in selectedNodes:

    # get current node label
    currentLabel = currentNode.getLabel()

    # write node label in console
    os.write(1,'\n' + str(currentLabel) + '\n')
```

This script can now be saved in a .py file and added to Natron using the `addMenuCommand(grouping,function)` function in the initGuy.py file.

It can also be can executed directly in Natron's script editor by adding:

```
getSelectedNodesLabel()
```

at the end of the script.

#### Get selected nodes class

```
import os
import NatronEngine
from NatronGui import *

def getSelectedNodesClass():

    # get current Natron instance running in memory
    app = natron.getGuiInstance(0)

    # get selected nodes
    selectedNodes = app.getSelectedNodes()

    # cycle through every selected node
    for currentNode in selectedNodes:

        # get current node class
        currentID = currentNode.getPluginID()

        # write node class in console
        os.write(1,'\n' + str(currentID) + '\n')
```

This script can now be saved in a .py file and added to Natron using the `addMenuCommand(grouping,function)` function in the initGuy.py file.

It can also be can executed directly in Natron's script editor by adding:

```
getSelectedNodesClass()
```

at the end of the script.

### 3.5.2 Roto/RotoPaint

This section provides basic and advanced tutorials on manipulating the Roto/RotoPaint node using python.

#### Get items label in a Roto node

```
import os
import NatronEngine
from NatronGui import *

def getRotoItemsLabel():

  # get current Natron instance running in memory
  app = natron.getGuiInstance(0)

  # get selected nodes
  selectedNodes = app.getSelectedNodes()

  # cycle every selected node #
  for currentNode in selectedNodes:

    # get node class
    currentID = currentNode.getPluginID()
```

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```
    # check if selected node(s) are of 'Roto' class
    if currentID == "fr.inria.built-in.Roto" or nodeID == "fr.inria.built-in.RotoPaint
↪" :

      # get 'Roto' context
      rotoContext = currentNode.getRotoContext()

      # get 'Base layer' (root layer) in 'Roto' context
      baseLayer = rotoContext.getBaseLayer()

      # get all items in 'Base layer'
      allBaseLayerItems = baseLayer.getChildren()

      # cycle every item in 'Base layer'
      for item in allBaseLayerItems:

        # get current item label
        itemName = item.getLabel()

        os.write(1, '\n' + str(itemName) + '\n')
```

This script can now be saved in a .py file and added to Natron using the `addMenuCommand(grouping,function)` function in the initGuy.py file.

It can also be can executed directly in Natron's script editor by adding:

```
getRotoItemsLabel()
```

at the end of the script.

### 3.5.3 Tracker

This section provides basic and advanced tutorials on manipulating the Tracker node using python.

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