

Release Notes for Nuke and Hiero

11.3v1

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Release Date

13 December 2018

Qualified Operating Systems

- macOS Sierra (10.12) or macOS High Sierra (10.13)
- Windows 7 or Windows 10 (64-bit)
- CentOS 6 or CentOS 7 (64-bit)

Other operating systems may work, but have not been fully tested.

Requirements for Nuke's GPU Acceleration

If you want to enable Nuke to calculate certain nodes using the GPU, there are some additional requirements.

NVIDIA

An NVIDIA GPU with compute capability 2.0 (Fermi) or above. A list of the compute capabilities of NVIDIA GPUs is available at www.nvidia.co.uk/object/cuda_gpus_uk.html.



NOTE: The compute capability is a property of the GPU hardware and can't be altered by a software update.

With graphics drivers capable of running CUDA 8.0 & 6.5 or above.

- On Windows and Linux, CUDA graphics drivers are bundled with the regular drivers for your NVIDIA GPU. Driver version r361 or above is required.

Go to <http://www.nvidia.com/Download/Find.aspx?lang=en-us> for more information.

- On Mac, the CUDA driver is separate from the NVIDIA graphics driver and must be installed, if you don't have it already. The minimum requirement is driver version r361 which can be downloaded from www.nvidia.com/drivers.



NOTE: We recommend using the latest graphics drivers, where possible, regardless of operating system.

AMD

- On Windows and Linux, an AMD GPU and driver from the following list:

Windows GPU	Driver	Linux GPU	Driver
AMD FirePro W8100	17.Q2.1	AMD FirePro W8100	17.Q2.1
AMD FirePro W9100	17.Q2.1	AMD FirePro W9100	17.Q2.1
AMD Radeon R9 Fury X	17.4.3 - 17.6.2	AMD Radeon R9 Fury X	17.10
AMD Radeon RX 480	17.Q2.1	AMD Radeon RX 480	17.Q2.1
AMD Radeon Pro WX 7100	17.4.3 - 17.6.2	AMD Radeon Pro WX 7100	17.10



NOTE: Other AMD GPUs may work, but have not been fully tested.

- On Mac an AMD FirePro GPU on late 2013 Mac Pro 6,1, mid 2015 MacBook Pro 11,5, and late 2016 MacBook Pro 13,3, running OS X 10.9.3 'Mavericks', or later.

Mac GPUs

Nuke supports GPU-enabled nodes on the late 2013 Mac Pro 6,1, mid 2015 MacBook Pro 11,5, and late 2016 MacBook Pro 13,3, (running OS X 10.9.3 'Mavericks', or later), including a new **Enable multi-GPU support** option. When enabled in the preferences, GPU processing is shared between the available GPUs for extra processing speed.



NOTE: To ensure you get the best performance from OpenCL GPUs, we recommend updating Mavericks to 10.9.5, or above for full functionality. However:

- If you're running an earlier version of Mac OS X than 10.9.5 and processing images greater than 4 mega pixels resolution, VectorGenerator, Kronos, and MotionBlur do not support GPU acceleration.

- If you're running an earlier version of Mac OS X than 10.9.4, Kronos and MotionBlur do not support GPU acceleration.

New Features

ARRI SDK Update

ARRIRAW has been updated to version 6, including various improvements and bug fixes that have introduced subtle image differences that are within tolerance. The Read node's **Properties** panel includes the following changes:

- The **sharpness** control now ranges from -5.0 to 5.0. Legacy scripts using the previous 0 to 100 range are remapped to [0,5] when opened.
- A new **detail** control.



NOTE: The ARRI **look settings** are not currently supported.

The full ARRI SDK release notes are publicly available from:

http://www.arri.com/support/downloads/searchable_downloads/

Bounding Box Improvements

Node Graph indications have been added to show changes in bounding box size. You can now tell at a glance the state of the bounding box, even when the Viewer is zoomed in.

The new indications are:

- **red rectangle with dotted stroke** - the indicated node creates a bounding box greater than the format.
- **dotted stroke without the red rectangle** - the bounding box size is greater than the format at the indicated node, but the bounding box size has been set by an upstream node.

You can enable and disable these indicators, set a threshold for the warning, and choose the color of the rectangle in the **Preferences**.

See [Bounding Box Warnings](#) for more information.

Channel Limit Warning

We've added a new warning in Nuke's GUI to tell you when you're approaching or exceeding the 1023 uniquely-named channel limit in Nuke.

You can set a channel count threshold in the **Preferences > Project Defaults > Channel Management**, and Nuke warns you when a newly created node causes you to exceed that threshold. Additionally, the currently used channel count is displayed in the status bar - color coded to identify if you're below the threshold, above the threshold, or above the maximum channel limit.

See [Channels](#) for more information.

eGPU Support

Support has been added for AMD cards in eGPU set-ups for macOS 10.13.5 (High Sierra), and later. The Sonnet eGFX Breakaway box and BlackMagic eGPU have been tested.

Live Groups - Locking and Overrides

Locking

In previous versions of Nuke, a published LiveGroup could be made editable by any change to the LiveGroup script or various changes to the parent LiveGroup node.

Now, once a LiveGroup is published, its contents are locked. This means that any action that could modify the script is disabled. Nodes and their inputs/outputs are locked in position, node property panel controls are grayed out and a padlock icon is displayed on the Node Graph tab for that LiveGroup. To unlock a LiveGroup, click **Make Editable**.

See [Editing and Publishing LiveGroups](#) for more information.

Overrides

Live Group overrides build on the existing functionality, taking the workflow a step further by allowing knobs at the level above to act as overrides rather than modifying the knobs inside the LiveGroup script.

Override knob values replace those beneath them in the Live Group hierarchy without changing the original value in the LiveGroup script. Override knobs are marked with yellow squares in the **Properties** panel.

See [Overriding LiveGroup Controls](#) for more information.

Python Callbacks

The Python API for LiveGroups has been extended to include a number of new callbacks, all of which support a return value (**True** by default). This enables you to control the LiveGroup workflow based on user defined criteria. The **Python** tab has been removed from the LiveGroup properties.

The callbacks are as follows:

```
nuke.LIVEGROUP_CALLBACK_CAN_PUBLISH  
nuke.LIVEGROUP_CALLBACK_PUBLISHED  
nuke.LIVEGROUP_CALLBACK_CAN_MAKE_EDITABLE  
nuke.LIVEGROUP_CALLBACK_MADE_EDITABLE  
nuke.LIVEGROUP_CALLBACK_RELOADED  
nuke.PRECOMP_CALLBACK_OPENED
```

Particles Performance Improvements

The Particle system has been optimized to produce up to 6x faster particle simulations and 4x faster playback of particles in the Viewer. In our internal tests, improvements are seen at any scale, with more improvement in simulations with a higher number of particles.

These improvements are a rewrite of some of Nuke's core particle code, and may result in some differences in output from previous versions of Nuke:

- BUG ID 133272 - ParticleSpawn: The **transfer velocity** control's math was incorrect and produced unexpected results. This change may break backward compatibility with legacy scripts.
- BUG ID 370706 - ParticleExpression: Age values for particles created between the first and second frame of a simulation were clamped at the first frame, resulting in incorrect ages for some particles when expressions were applied. This change may break backward compatibility with legacy scripts.

For custom Particle plug-in developers, you can take advantage of new **ParticleSystem** class accessor methods, which return pointers to attribute arrays. Using these is much faster than calling the individual methods for each particle. See Nuke's [NDK Development Guide](#) for more information.

Smart Vector Toolset Improvements

A new node, VectorCornerPin, has been added to the Smart Vector Toolset in NukeX. Using the VectorCornerPin can reduce the need to create multiple VectorDistort nodes with different reference frames and mix between them.

VectorCornerPin uses SmartVector to warp a corner-pinned image between keyframes. You can set keyframes using **User** and **From** controls, just like in the CornerPin node, causing the Source image to warp according to the additional SmartVector input.


See [Warping Images Using VectorCornerPin](#) for more information.

Sony SDK Update

Sony SDK has been updated to version 3.1, adding support for the Sony VENICE camera, and X-OCN encoded footage from the F5, F55, and VENICE.

Timeline Multiview Support

In addition to multi-view formats such as **.exr** and **.sxr**, Nuke Studio, Hiero, and HieroPlayer now allow you to define views using separate files on a single track item, similar to Nuke's Node Graph **%V** Read functionality. For example, if you read in **image.left.dpx** and change the name to **image.%V.dpx**, both **image.left.dpx** and **image.right.dpx** are read using the same Read node, provided that views called **left** and **right** exist in your **Project Settings**.

Tracks can display all views or any single view using the  view button, allowing you to set up stereo and VR timelines for review. Once tracks are set, you can use the new export structure to create Nuke scripts with stereo setups for compositing.

See [Stereoscopic and Multi-View Projects](#) for more information.

Viewer Selection Modes

The selection tool has been improved in both 3D and 2D views, including new modes. You can now select areas of a certain shape with the marquee tools or use the lasso tool to make a selection by tracing the edges of any shape. Additional hotkeys have been added, allowing you to draw a rectangular/ellipse selection from the center and constrain it to square or circle.

Selection area behavior matches Roto/RotoPaint in that, when you hold **Shift** to add selections, the square/ellipse bbox is anchored at the initial click point with a side length of the Y axis delta.

See [Selection Modes](#) for more information.



NOTE: The Viewer properties **viewerSelectorMode** control can be accessed Pythonically by knob index.

Feature Enhancements

- BUG ID 343648 - Documentation: The Nuke help now includes a supported camera formats page.

Bug Fixes

- BUG ID 154598 - MXF: Setting **debayer quality** to **High Quality** on some Sony RAW files displayed an **error decoding frame** message in the Comp Viewer.
- BUG ID 176742 - SmartDistort: Error messages during input connection were misleading.
- BUG ID 235679 - NDK Documentation: The documentation stated incorrectly that the **GeoInfo::copy ()** function copies primitive data.
- BUG ID 272897 - Timeline Disk Caching: Caching continued after closing the project associated with the frames being cached.
- BUG ID 277342 - LiveGroups: Undoing a change to a node knob inside a LiveGroup didn't work as expected.
- BUG ID 304664 - Timeline Disk Caching: The sequence **Properties > Clip Reformat** options did not work as expected when Timeline Disk Caching was enabled.
- BUG ID 308870 - Licensing: Nuke 11.0v2 created client floating license files with incorrect names.
- BUG ID 324685 - Denoise: Various controls in the **Properties** panel did not work as expected.
- BUG ID 328102 - Write: Reloading a script incorrectly enabled the **check file matches input** option in **.exr** Write node **Properties**.
- BUG ID 329048 - ARRIRAW: Undoing changes to Read **Properties** settings displayed an error in the Viewer.
- BUG ID 329252 - ARRIRAW: Setting an incorrect **Debayer Mode** in Nuke Studio did not display an error.
- BUG ID 350887 - VectorDistort: Error reporting was unclear when attempting to calculate vectors for a single frame.
- BUG ID 353546 - Denoise: Setting **Source** to **Digital** did not work as expected for all input resolutions.
- BUG ID 354345 - Monitor Output: Realtime playback on the timeline was not possible when the output resolution was set to 2160p30.
- BUG ID 358699 - R3D: In **legacy** mode, the default colorspace was not read from the **.rmd** metadata.
- BUG ID 358988 - DnD: Drag-and-drop functionality did not work as expected on the **Project Settings** panel.
- BUG ID 359553 - Stereo: Changing the order of views in the **Project Settings** changed the hero view in the Compositing environment.

- BUG ID 359747 - Soft Effects: Certain BlinkScript kernels caused Nuke Studio to become unresponsive.
- BUG ID 361673 - LiveGroups: Python exceptions were displayed incorrectly for some functions.
- BUG ID 361843 - Localization: Undoing actions during localization did not work as expected.
- BUG ID 362147 - Bounding Box Warning: Setting the **threshold** to 0% caused the warning to behave erratically.
- BUG ID 362683 - LiveGroups: Expression links within LiveGroups occasionally produced corrupt files when the script was saved.
- BUG ID 362885 - LensDistortion: Certain scripts exhibited slow render times and lag.
- BUG ID 362908 - Write: Enabling **read file** in the **Properties** occasionally reset the **file type** control.
- BUG ID 363903 - LiveGroups: Overrides on exposed knobs did not work as expected inside nested LiveGroups.
- BUG ID 363967 - Denoise: Setting the **Output** control to **Noise** produced unexpected results.
- BUG ID 329061/364388 - ARRIRAW/MXF: Undoing or re-doing changes to a shot did not update the **Properties** panel.
- BUG ID 365089 - LiveGroups: Copying and pasting an editable, but unmodified LiveGroup created an edited LiveGroup.
- BUG ID 365096 - LiveGroups: Publishing an editable, but unmodified LiveGroup created an edited LiveGroup on reload.
- BUG ID 365102 - Windows only: Reading files with spaces in the file path did not work as expected.
- BUG ID 365190 - MXF: Changing controls in the **Properties** panel did not always update the Viewer correctly.
- BUG ID 365567 - MXF: Exporting **.mxl** sequences as **.mov** files using **Process as Sequence** produced frame offsets.
- BUG ID 365712 - Export: Spurious **knob value** warnings were displayed on certain export tasks.
- BUG ID 365863 - MXF: Reading or importing Venice Raw SQ files did not work as expected.
- BUG ID 366072 - LiveGroups: Invisible knobs were not ignored by the override functionality.
- BUG ID 366263 - LensDistortion: Loading a script created a larger bounding box than expected.
- BUG ID 366574 - Denoise: Nuke script precision was changed incorrectly to use Scientific Notation downstream of Denoise nodes.
- BUG ID 366697 - LiveGroups: Reloading a LiveGroup and then enabling an **output node** in the **advanced** controls published the LiveGroup incorrectly.
- BUG ID 366872/369082 - ARRIRAW: Clicking **load settings from metadata** in the **Properties** panel destroyed the undo stack.
- BUG ID 367591 - Particles: Output from a certain Particles system appeared to bounce incorrectly.
- BUG ID 359974/359983/368716 - Timeline Multiview: Stereo output set to display both eyes or side by side did not display correctly on SDI monitors.

- BUG ID 368743 - Channel Management: Reading clips that broke the channel limit followed by clips that didn't break the limit occasionally caused Nuke to crash.
- BUG ID 368883 - MXF: Copy and pasting Read nodes did not copy the knob values correctly.
- BUG ID 368915 - LiveGroup: Entering an invalid **file** path and then undoing the action placed the LiveGroup into the editable state, but the padlock icon was still displayed on the LiveGroup tab.
- BUG ID 369083 - Sony SDK: Selecting the unsupported **SGamut** in the Read properties did not display an error.
- BUG ID 369425 - MXF: Metadata for some key pairs did not display the correct values.
- BUG ID 369510 - Sony SDK: Editing comps containing certain **.mxf** files caused Nuke Studio to crash.
- BUG ID 369749 - Mac OS X/macOS only: Exporting multi-view timelines to the **.exr** format displayed an error unnecessarily.
- BUG ID 369787 - R3D: Clicking **Load Settings from RMD** in the **Properties** panel destroyed the undo stack.
- BUG ID 369899 - LiveGroups: Knobs that can add/remove other knobs, such as the Read node's **File** knob, could still modify the **Properties** panel in locked scripts.
- BUG ID 370124 - Mac OS X/macOS only: The monitor output Side by Side mode did not play back as expected.
- BUG ID 370360 - LiveGroups: Right-clicking a published LiveGroup's **Properties** panel and selecting **Set knobs to default** set the LiveGroup's state to editable.
- BUG ID 370392 - ARRIRAW: Tooltips did not include information on other file types, such as the **.mxf** extension.
- BUG ID 370395 - Viewer Selection Modes: making selections using different modes did not update in the Viewer in real time.
- BUG ID 370415 - ARRIRAW: Selecting the **Debayer Mode** incorrectly did not display a clear error message.
- BUG ID 370501 - ARRIRAW: Setting the **Colorspace** incorrectly to any of the available Monochrome settings did not display a clear error message.
- BUG ID 370506 - LiveGroups: The padlock icon on the LiveGroup's sub-graph was not clearly visible.
- BUG ID 370509 - Multi-View Timelines: The **Reconnect Media** function did not include the **detect views** option and couldn't reconnect multi-view clips.
- BUG ID 370512 - LiveGroups: Knobs added to published LiveGroups were not saved with the script.
- BUG ID 370519 - LiveGroups: Making a parent LiveGroup editable enabled the Undo and Redo buttons on child LiveGroup **Properties** panel.
- BUG ID 370536 - Channel Management: Existing Read nodes in the script displayed an error incorrectly when the **Channel Warning Threshold** was reached.
- BUG ID 370626 - ARRIRAW: Setting **Proxy Playback** to **Half Size Proxy** did not work as expected.

- BUG ID 370645 - ARRIRAW: Enabling the **lens squeeze** options in legacy scripts caused them to disappear.
- BUG ID 370750 - Multi-View Timelines: Single view tracks below multi-view tracks were not visible when **Obey Alpha** and **See Through Missing Media** were enabled.
- BUG ID 370846 - Sony SDK: The **SLog2** colorspace in Nuke Studio did not match Sony Raw Viewer.
- BUG ID 371220 - ARRIRAW: The **Noise Reduction** control was not supported and has been removed.
- BUG ID 371327 - Multi-View Timelines: Double-clicking certain clips caused Nuke Studio to crash.
- BUG ID 371377 - Multi-View Timelines: Localizing stereo clips did not work as expected.
- BUG ID 371428 - Particles: Multiple particle inputs did not render correctly.
- BUG ID 371435 - Multi-View Timelines: Certain multi-view **.exr** files did not show the hero view on extra tracks.
- BUG ID 371437 - Multi-View Timelines: Clips with invalid views imported with partially filled localization bars in the Project panel.
- BUG ID 371463 - Linux only: The R3D **Use CUDA** option in the Read **Properties** panel was disabled.
- BUG ID 371466/371476 - Particles: The **P_Fogbox** toolset occasionally didn't emit particles correctly.
- BUG ID 371529 - ParticleBounce: The **Properties** panel included three **ParticleBounce** tabs.
- BUG ID 371596 - Viewer Selection Modes: Sampling a pixel in the Viewer using **Ctrl/Cmd**-click disabled Viewer selections in the Gridwarp node.
- BUG ID 371598 - Multi-View Timelines: Exporting certain files attempted to access the **Preferences** in command line mode and displayed an error.
- BUG ID 371685 - Multi-View Timelines: Switching between mono and stereo setups occasionally caused the Viewer to render black.
- BUG ID 371747 - ARRIRAW: Nuke Studio could not create comps from certain **.mxf** files.
- BUG ID 371903/371987 - ARRIRAW: Certain combinations of **Aspect Ratio**, **Resolution**, and **Lens Squeeze** displayed an error in the Viewer.
- BUG ID 371926 - LiveGroups: Pressing 1, 2, 3, and so on to add a Viewer to the Node Graph does not work as expected when a Viewer exists in a locked LiveGroup.
- BUG ID 371931 - LiveGroups: Undoing **Publish** or **Make Editable** did not return the LiveGroup to its previous state.
- BUG ID 371973 - ARRIRAW: The **Aspect Ratio** control has been moved above the **Resolution** control to reflect precedence.
- BUG ID 372286 - LiveGroups: Deleting a custom **rgba** knob on a LiveGroup created gaps in the **Properties** panel layout.
- BUG ID 372290 - LiveGroups: Deleting an override knob did not revert the source knob to its original value.

- BUG ID 372422 - LiveGroups: Certain override values were not completely deleted when the associated knob was deleted.
- BUG ID 372466 - LiveGroups: Publishing a deleted LiveGroup Pythonically returned **True**.
- BUG ID 372496 - Channel Management: Reading certain files that broke the Channel Warning Threshold from the command line displayed **Warning: Read1: Cannot assign channel number to channel995** multiple times.
- BUG ID 372620 - Channel Management: The channel threshold warning did not display after executing **File > Close Comp** or **Clear**.
- BUG ID 372639 - Channel Management: Reading clips containing more than 1024 channels caused Nuke to crash.
- BUG ID 372672 - Sony SDK: Setting different resolutions for the same file in multiple Read nodes caused Nuke to crash during playback.
- BUG ID 372740 - ARRIRAW: The thumbnails for **.ari** and **.mxf** files were not set to their native resolutions.
- BUG ID 372749 - LiveGroups: Deleting overrides on exposed knobs and re-publishing did not lock the LiveGroup.
- BUG ID 372772 - LiveGroups: Nesting a Published LiveGroup inside another LiveGroup and then undoing the action locked the overrides on the published LiveGroup.
- BUG ID 372777 - Sony SDK: Invalid relative resolutions were available when using **High Quality** debayering.
- BUG ID 372934 - ARRIRAW: The error message displayed for unsupported resolutions in legacy scripts was misleading.
- BUG ID 373011 - ARRIRAW: Certain **.ari** and **.mxf** files displayed an error message when read into Nuke.
- BUG ID 373069 - Sony SDK: Scrubbing the playhead while a Read node was updating caused Nuke to crash.
- BUG ID 373242 - ARRIRAW: Legacy controls were not correctly mapped to the new knob name changes.
- BUG ID 373296 - ARRIRAW: Loading legacy scripts unexpectedly changed knob values.
- BUG ID 373375 - Sony SDK: Multiple Read nodes referencing the same file with different control values was not supported.
- BUG ID 373386 - DeepRecolor: Soft edges for different objects in auxiliary channels were not combined correctly when **target input alpha** was enabled.
- BUG ID 373581/373708 - Multi-View Timelines: Comps were not created correctly when views were in separate clips, rather than from multi-view files such as **.exr** clips.
- BUG ID 373676 - ARRIRAW: Certain legacy scripts could not be loaded.
- BUG ID 373682 - Channel Management: The **Channel Count** text in Nuke's interface was the wrong color.

- BUG ID 373684 - Channel Management: The **Channel Count** in Nuke's interface was clamped to 1024.
- BUG ID 373701 - Multi-View Timelines: Comps were not named correctly when created from separate clips, rather than from multi-view files such as **.exr** clips.
- BUG ID 373720 - LiveGroups: Modifying a LiveGroup and then undoing the action did not revert the LiveGroup to the editable state.
- BUG ID 373860 - Windows only: The **Proxy Playback** control was not set correctly with legacy **.ari** and **.mxf** files.
- BUG ID 373868 - ARRIRAW: Loading certain scripts displayed a warning.
- BUG ID 373897 - ARRIRAW: Right-clicking on a sequence with the **Properties** panel open for **.ari** and **.mxf** shots caused Nuke Studio to crash.
- BUG ID 373992 - LiveGroup: Applying overrides to exposed knobs did not update the LiveGroup state icon in the Node Graph correctly.
- BUG ID 374109 - LiveGroups: Undoing a **Make Editable** action was not registering as an individual undo in the stack.
- BUG ID 374259 - Channel Management: The info bar at the bottom-right of the Hiero interface was not displayed correctly and errors were printed on the command line.
- BUG ID 374628 - ParticleWind: The **steps per frame** control in the ParticleSettings node was not taken into account when applying wind.
- BUG ID 375178 - R3D: Switching the **Image Pipeline** from **legacy** to **IPP2** mode did not display all the available options.
- BUG ID 375204 - Soft Effects: Hidden knobs were exposed incorrectly on certain effects' **Properties** panels.
- BUG ID 375909 - Windows only: Reloading a LiveGroup displayed a **LiveGroupInfo: Unknown command** message.
- BUG ID 375928 - Export: Transcoding audio shots from multi-view sequences did not work as expected.

New Known Issues Specific to Nuke 11.3

This section covers new known issues and gives workarounds for them, where appropriate.

- BUG ID 376045 - ARRIRAW: Dropping files with more than one period in the file name from the **Project** panel to the Node Graph displays a temporary error on the Read node.
- BUG ID 374982 - Windows only: LiveGroups knob override indicators don't display or update immediately in the **Properties** panel.
- BUG ID 374142 - macOS only: Cloning certain custom knobs using **Shift** and drag-and-drop did not work as expected.

- BUG ID 373227 - LiveGroups: Undoing edits to a LiveGroup does not return the group's state to editable.
- BUG ID 373222 - Timeline Caching: Certain interface components did not update correctly when the **Clip Reformat** option was changed.
- BUG ID 373170 - Sony SDK: Setting the **Gamut** control to **Rec709** did not match the Colorspace node's **sRGB** output.
- BUG ID 373072 - Sony SDK: Setting **Resolution** to **Eighth** displayed dead pixels in the Viewer for certain clips.
- BUG ID 369203 - Sony 3.1: Certain **.mxf** files do not playback as expected due to decoding errors.
- BUG ID 367089 - ARRIRAW - Dragging certain **.ari** files into the Node Graph momentarily shows an error on the Read node.
- BUG ID 366511 - Particles: Caching certain heavy simulations may be slower than previous versions of Nuke.
- BUG ID 366048 Linux only: Running heavy Particles simulations occasionally display the OS **not responding** error dialog.

Developer Notes

Here are the changes relevant to developers. See **Help > Documentation** from the Nuke menu bar or <https://learn.foundry.com/nuke/developers/112/ndkdevguide/appendixc/index.html> for more information.

As Nuke develops, we sometimes have to make changes to the API and ABI under the hood. We try to keep these changes to a minimum and only for certain releases, but from time to time API and ABI compatibility is not guaranteed. See the following table for the situations when you may have to recompile your plug-ins and/or make changes to the source code.

Release Type	Example	Compatibility	Recompile	Rewrite
Version	10.0v1 to 10.0v2	API and ABI		
Point	10.0v1 to 10.5v1	API	●	
Major	10.0v1 to 11.0v1	-	●	●

Additionally, node **Class()** names occasionally change between major releases. While these changes do not affect legacy scripts, you may not get the results you were expecting if a node class has been modified. The **toolbars.py** file, used to create Nuke's node toolbar, contains all the current node class names and is located in **<install_directory>/plugins/nukescripts/** for reference.

As an example, between Nuke 9 and Nuke 10, the CameraShake node **Class()** changed from CameraShake2 to CameraShake3. In the **toolbars.py** file for the two releases, the entries for the CameraShake node appear as follows:

```
m.addCommand("CameraShake", "nuke.createNode(\"CameraShake2\")",
icon="CameraShake.png")
m.addCommand("CameraShake", "nuke.createNode(\"CameraShake3\")",
icon="CameraShake.png")
```

New Features

There are no new features in this release.

Feature Enhancements

- BUG ID 374043 - NDK Documentation: A new method, **KnobChangedObserver**, has been added enabling a knob or op to watch for knob changes in other nodes.

Bug Fixes

- BUG ID 359072 - Python: The API function **openInTimeline()** did not display the track view icon correctly.
- BUG ID 360592 - LiveGroups: Publishing a LiveGroup Pythonically without a valid **file** path threw an exception.
- BUG ID 364627 - Python: Calling **nuke.thisClass()** occasionally caused Nuke to crash.
- BUG ID 371058 - Multi-View Timelines: Python exports did not recognize path substitutions in the **Preferences**.