Release Notes for Nuke and Hiero 13.0v7

Release Date

14 February 2022

Warning: As a result of the current COVID-19 government recommendations here in the UK, much of the Nuke team is still working from home. Currently, Foundry cannot guarantee that our usual high standards of QA have been applied to Nuke's monitor output functionality, including VR headset support, in this release.

Qualified Operating Systems

Note: Installing Nuke 13.0 takes significantly longer than Nuke 12.2 builds, particularly on Windows OS, due to the upgrade to Python 3 and the addition of the PyTorch library.

- macOS Catalina (10.15.x) or macOS Big Sur (11.x)
- Windows 10 (64-bit)
- CentOS 7.4, 7.5, and 7.6 (64-bit)

Note: The VFX Platform 2020 upgrade includes library versions that are only compatible with CentOS 7.4, or later.

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 3.0 (Kepler) or above. A list of the compute capabilities of NVIDIA GPUs is available at https://developer.nvidia.com/cuda-gpus

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 10.1 or above. On Windows and Linux, CUDA graphics drivers are bundled with the regular drivers for your NVIDIA GPU. Driver versions 418.96 (Windows) and 418.39 (Linux), or above are required. See https://www.nvidia.com/Download/Find.aspx for more information.

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

AMD

Note: Bit-wise equality between GPU and CPU holds in most cases, but for some operations there are limitations to the accuracy possible with this configuration.

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

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

- AMD Radeon Pro WX 7100
- AMD Radeon Pro W 5700
- AMD Radeon Pro WX 8200
- AMD Radeon Pro WX 9100

- AMD Radeon RX 6800 XT

Note: For information on the recommended driver for each GPU, see https://www.amd.com/en/support

- On Mac, integrated AMD GPUs are supported on the following Intel CPU Macs:
  - Any late 2013 Mac Pro onward (including 2019 Mac Pro),
  - Mid-2015 MacBook Pros onward, and
  - Late 2017 iMac Pros onward.

  All supported Mac Pros include a multi-GPU support option, where applicable. Bitwise equality between GPU and CPU holds in most cases, but for some operations, there are limitations to the accuracy possible with this configuration.

Warning: Although AMD GPUs are enabled on other Mac models, they are not officially supported and used at your own risk.

Multi-GPU Processing

Nuke's GPU support includes an **Enable multi-GPU support** option. When enabled in the preferences, GPU processing is shared between the available GPUs for extra processing speed.

Note: Multi-GPU processing is only available for identical GPUs in the same machine. For example, two NVIDIA GeForce GTX 1080s or two AMD Radeon™ Pro WX 9100s.

New Features

There are no new features in this release.

Feature Enhancements

There are no feature enhancements in this release.

Bug Fixes

- BUG ID 372721 - Viewing a CornerPin node with a Crop and VectorBlur upstream caused Nuke to crash.
- BUG ID 429243 - Preferences: The path substitutions table did not extend as expected to accommodate multiple rows.
- BUG ID 429245 - Preferences: Using **/** (slashes) or spaces in path substitutions in the **Preferences** padded table rows incorrectly, making the UI unusable.
- BUG ID 453338 - Installer: The **Privacy notice** link in the EULA page did not work as expected.
- BUG ID 466734 - CopyCat: Stopping training on the CPU and then resuming on the GPU, and the opposite, GPU to CPU, did not work as expected.
- BUG ID 467929 - Monitor Out: UHD Psf output modes were not supported as expected.
- BUG ID 472651 - Using a picker sample region in the Viewer with a Deep node upstream caused the UI to respond more slowly.
- BUG ID 473297 - Tracker: Enabling the **center_viewer** knob in the Viewer controls stopped tracks from stabilizing correctly.
- BUG ID 478738 - Cryptomatte did not allow per-frame metadata changes from sidecar files.
- BUG ID 484567 - Preferences: Adding a new entry to the path substitutions table occasionally added two rows.
- BUG ID 486534 - Read/Write: Reading certain **.exr** files caused Nuke Studio to crash.
- BUG ID 487796 - Windows only: Nuke Indie project files (**.hroxind**) included an incorrect registry value.
- BUG ID 490627 - Create Comp: The default Monitor Out color transform selected in the **Project Settings** was not applied in the exported **.nk** script as expected.
- BUG ID 493069 - HieroPlayer: Selecting **Editorial** > **Rename Shots** from the right-click context menu did not work as expected.
- BUG ID 493427 - Cryptomatte: Selections were not displayed as expected when square brackets were used in the matte name.
- BUG ID 495347 - Read/Write: Animated Transform nodes upstream of VectorDistort nodes caused the first frame to render incorrectly from the command line and in interactive sessions with the Fame Server.
- BUG ID 496618 - Timeline Editing: Deleting video tracks from the timeline directly after saving a project caused Nuke Studio to crash.
- BUG ID 499094 - AIR Tools: The padding method used by the AIR tools caused artifacts in the output in certain situations.
- BUG ID 500095 - AIR Tools: The CUDA_CACHE_MAXSIZE terminal information listed the default CUDA_CACHE_PATH incorrectly.

New Known Issues Specific to Nuke 13.0

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

- BUG ID 499823 - CopyCat: The tooltip for the **Graph** dropdown on the **Graph** tab is incorrect.
- BUG ID 498878 - CopyCat: Expression nodes supplying temporal data (frames) are not evaluated correctly.
  As a workaround, render the output of the Expression node and then train the network using the files on disk instead.
- BUG ID 497323 - Monitor Out: 12 bit 4:4:4 RGB outputs do not work as expected in UHD display mode.
- BUG ID 495149 - Viewer: Enabling **use GPU for Viewer when possible** in the Viewer **Properties** panel with **dithering algorithm** set to **low frequency** causes the Viewer to display no image.
  As a workaround with OCIO color management, you can check **Enable OCIO GPU path for the GPU Viewer** in the **Project Settings**.

Note: The workaround does not apply to projects running under Nuke color management.

- BUG ID 494848 - Monitor Out: The timeline Viewer framerate counter does not work as expected with Blackmagic Design cards.
- BUG ID 494532 - Color Management: Clearing or closing and reopening a comp in Nuke causes the **Project Settings** > **Color** > **color management** control to reset to the default **Nuke** value.
- BUG ID 493421 - OCIODisplay: Copying an OCIODisplay node or effect between the timeline and node graph environments does not retain gamma and gain values.
- BUG ID 492259 - Monitor Out: Resizing a floating monitor out window with **title safe** guides enabled causes the monitor to flicker.
- BUG ID 492248 - Upscale: Setting **Project Settings** > **Color** > **OCIO config** to **nuke-default** and upscaling an image causes an unexpected color shift.
- BUG ID 488817 - Hydra: The Project3D node's **project on** control always projects on both faces regardless of the option chosen.
- BUG ID 486238 - Inference: Previewing a CopyCat **.ost** file in the application file browser causes Nuke to crash.
- BUG ID 485000 - CopyCat: The description box for error values on the Loss/Step graph does not scale correctly with larger values.
- BUG ID 472519 - CopyCat: Training a network using multi-layer source and ground truth images, such as **.exr** files, does not work as expected.
  As a workaround, use a Shuffle node to remove all layers except **rbga**.

- BUG ID 470014 - macOS only: Canceling the CopyCat training progress bar during the **validating inputs** phase causes Nuke to display an error message.
- BUG ID 470012 - CopyCat: Canceling the training progress bar during the **caching inputs** phase causes Nuke to crash.
- BUG ID 469655 - Monitor Out: Title safe **format** not showing on perimeter edges of Monitor Out.
- BUG ID 469593 - Monitor Out: The Monitor Out panel tab is difficult to access.
- BUG ID 469578 - Monitor Out: Crashing when changing resolution modes during playback.
- BUG ID 469262 - Monitor Out: Prior to Nuke 13.0v1 it was possible to have multiple Monitor Out devices.
- BUG ID 469132 - USD: Light3 panel shows a small broken column after using **read from file**.
- BUG ID 468980 - Monitor Out: Switching between files that have different aspect ratios leaves behind some of the previous image in the floating window.
- BUG ID 468665 - Nuke Studio: White screen display when scaling the timeline Viewer.
- BUG ID 467984 - USD: Camera3 doesn't show the full camera Path.
- BUG ID 467265 - USD: Highlight selections gets stuck within the SceneGraph.
- BUG ID 467257 - USD: Pressing **Spacebar** in the SceneGraph disables items and opens the panel in full-screen at the same time.
- BUG ID 467229 - USD: Layout issues with the **Type** column when resizing the SceneGraph.
- BUG ID 467209 - USD: Importing a USD with the **R** hotkey doesn't display the filename in the SceneGraph.
- BUG ID 467198 - CopyCat: Clicking the refresh button above the graph does not update the **Runs** table.
- BUG ID 467195 - macOS only: Switching desktop while an Upscale node is processing displays an **OMP: Warning #190: Forking a process while a parallel region is active is potentially unsafe** error message repeatedly on the command line.
- BUG ID 465112 - Hydra: Viewing animated USD's file will playback faster, when moving the camera / dragging a selection box over the viewer.
- BUG ID 464964 - Installing Nuke 13.0 takes significantly longer than Nuke 12.2.
- BUG ID 464442 - Cryptomatte: Clicking the **Clear** button under the **Matte List** cannot be undone as expected.
- BUG ID 463253 - Hydra: Solid color applied in Hydra Viewer when set to **textured** in the **Display Settings**.
- BUG ID 462011 - macOS only: Certain machines running Big Sur display **QWidgetWindow()** command line errors on start up.
- BUG ID 461710 - USD: Axis, Camera and Light in Viewer are set to default until selected.
- BUG ID 459921 - Toggling the **Materials** checkbox in the Hydra Viewer causes the grid to display incorrectly.
- BUG ID 459512 - CopyCat: The **Properties** panel does not always update to reflect changes to upstream channels.
  As a workaround, close and reopen the **Properties** panel.

- BUG ID 458511 - CopyCat: The **visibility** control in the **Graphs** tab is reset by the next update if it is toggled while training is running.
- BUG ID 458509 - CopyCat: Enabling or disabling **Log Scale** in the **Graphs** tab causes graph updates to lag.
- BUG ID 458508 - CopyCat: Training does not currently stop or display an error if a NaN value is encountered.
- BUG ID 457886 - USD: Alembic **.abc** items not graying out when **read from file** is checked until refresh.
- BUG ID 457608 - Monitor Out: Some menus in Monitor Out **Strip overflow** menu not functional.
- BUG ID 456513 - QPainter error messages printed to the terminal.
- BUG ID 448430 - Monitor Out: Floating window occasionally not minimizing in Nuke Studio.
- BUG ID 445560 - macOS only: MO XDR: Nuke occasionally crashes on setting Monitor Out workspace when using XDR monitor.
- BUG ID 443270 - Monitor Out: GUI strip updates as viewer spawns.
- BUG ID 441488 - Nuke crashes when executing the Marcom2D script with command line **-c 8G.**
- BUG ID 440212 - Nuke crashes when executing the Marcom2D script in command line.
- BUG ID 427838 - Windows only: Monitor Out: Moving floating window to 4K monitor crashes or scales incorrectly.

Developer Notes

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	12.0v1 to 12.0v2	API and ABI		
Point	12.0v1 to 12.1v1	API	●	
Major	12.0v1 to 13.0v1	-	●	●

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")
```

Release Notes for Nuke and Hiero 13.0v6

Release Date

02 December 2021

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Qualified Operating Systems

Note: Installing Nuke 13.0 takes significantly longer than Nuke 12.2 builds, particularly on Windows OS, due to the upgrade to Python 3 and the addition of the PyTorch library.

- macOS Catalina (10.15.x) or macOS Big Sur (11.x)
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Requirements for Nuke's GPU Acceleration

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

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

AMD

Note: Bit-wise equality between GPU and CPU holds in most cases, but for some operations there are limitations to the accuracy possible with this configuration.

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

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

- AMD Radeon Pro WX 7100
- AMD Radeon Pro W 5700
- AMD Radeon Pro WX 8200
- AMD Radeon Pro WX 9100

- AMD Radeon RX 6800 XT

Note: For information on the recommended driver for each GPU, see https://www.amd.com/en/support

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  - Any late 2013 Mac Pro onward (including 2019 Mac Pro),
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Nuke's GPU support includes an **Enable multi-GPU support** option. When enabled in the preferences, GPU processing is shared between the available GPUs for extra processing speed.

Note: Multi-GPU processing is only available for identical GPUs in the same machine. For example, two NVIDIA GeForce GTX 1080s or two AMD Radeon™ Pro WX 9100s.

New Features

There are no new features in this release.

Feature Enhancements

- BUG ID 488270 - Inference: Loading Nuke 13.1 **.cat** files containing custom knobs in Nuke 13.0 now displays an error message.
- BUG ID 493594 - Python: You can now set/get the **value()** of the Monitor Out **viewer** knob, similar to the other knobs in the MonitorOutNode **Properties** and UI strip.

- BUG ID 494822 - Versioning: A new **versionscanner.log** file is created when you version clips and shots up and down in the **Project** bin or timeline. This file keeps track of all version changes and is a useful tool for troubleshooting and debugging. The file is stored in NUKE_TEMP_DIR/logs. For example, on Windows:

  `C:/Users/<username>/AppData/Local/Temp/nuke/logs/versionscanner.log`

Bug Fixes

- BUG ID 152698 - Precomp: Copying and pasting Precomp nodes pasted the new node on top of the old one.
- BUG ID 160086 - Blink API: The blinkBlurAndGain example plug-in did not compile correctly.
- BUG ID 374335 - DeepRead format information in the Viewer's 2D image information was 1 pixel smaller than the actual format.
- BUG ID 379217 - Read/Write: Rendered **.exr** files did not obtain their **node_hash** from the Write node.
- BUG ID 419049 - Timeline Editing: Sequences of **.exr** shots with large amounts of embedded metadata created excessively large Nuke Studio projects.
- BUG ID 420354 - Workspaces: Node panels did not update correctly if the **Properties** panel was open on a second monitor.
- BUG ID 447233 - Particles: Moving in 3D space during playback from a ParticleFlock node caused Nuke to crash.
- BUG ID 445909 - Monitor Out: Video Legal Range did not working correctly with certain AJA cards.
- BUG ID 468596 - macOS only: Modal dialog prompts added to **menu.py** always displayed behind the splash screen on start-up and could not be dismissed.
- BUG ID 471966 - Python: Adding a tab to the **Preferences** dialog using the **Tab_Knob** function did not display the tab as expected.
- BUG ID 474297 - Cryptomatte: Undoing actions in Read nodes with a Cryptomatte node in the script did not always work as expected.
- BUG ID 476386 - Frame Server: **FrameServerThreads** did not initiate the **self.logger** as expected.
- BUG ID 476430 - Cryptomatte: Blender cryptomatte files did not import into Nuke as expected.
- BUG ID 480813 - Python: Calling **list.sort()** on a list of nodes did not work as expected.
- BUG ID 484135 - Linux Only: Nuke 12.2 used more RAM than Nuke 12.1 builds and clearing the cache freed up less memory.
- BUG ID 484808 - Multi-Project Edit: Dragging or copying and pasting a sequence into another project duplicated bin sequences.
- BUG ID 485052 - Read/Write: Changing the Read node **File** control from an **.arx** file to another wrapper format displayed errors or caused Nuke to crash.

- BUG ID 485295 - Licensing: Hiero incorrectly checked out a **hiero_i** and **nukestudio_i** license if both were available.
- BUG ID 485345 - MOV: Playback occasionally stalled on the last frame of certain **.mov** files.
- BUG ID 485480 - Project Bin: Dragging bin items to locations in the same pane moved the items without displaying a confirmation dialog.
- BUG ID 486845 - Camera: Reloading a script caused the Camera node to default to the first camera available in the associated **.fbx** or **.abc** file when **read from file** was enabled.
- BUG ID 487285 - Reloading large LiveGroup and Precomp nodes was slow in large scripts.
- BUG ID 487299 - Localization: Creating a new project with localization enabled and then creating a comp from the timeline caused Nuke Studio and Hiero to save the **.nk** file in the localization directory.
- BUG ID 487657 - Flipbooking: Setting a custom OCIO config using an environment variable and then flipbooking to HieroPlayer caused each flipbook to open in a different HieroPlayer session.
- BUG ID 487789 - Script Editor: Commenting out multiple lines using **Ctrl**/**Cmd**+**/** did not work as expected.
- BUG ID 488530 - Node Graph: Dragging a node onto an existing connection occasionally produced unexpected results.
- BUG ID 489214 - CopyCat: Starting training when the playhead was not on the first frame of a clip with more than 100 frames displayed an error message.
- BUG ID 489439 - Sync Review: HieroPlayer could not host or connect to sync sessions unless Nuke or Hiero were launched on the machine first.
- BUG ID 489498 - Export: Executing **Build Track** > **From Export Tag** occasionally displayed blank frames in the Viewer.
- BUG ID 489578 - Export: Executing **Build Track** > **From Export Tag** occasionally ignored metadata in Text soft effects.
- BUG ID 490592 - Monitor Out: Switching between the timeline and comp environment did not retain the **Output Transform** knob value as expected.
- BUG ID 490663 - CopyCat: Clicking **Create Inference** did not work as expected if the **Data Directory** file path contained spaces.
- BUG ID 491033 - Monitor Out: The **Video Legal Range** control did not work as expected with AJA cards over HDMI in Nuke.
- BUG ID 491173 - Monitor Out: The **Video Legal Range** control was applied twice with AJA cards in Nuke Studio.
- BUG ID 491569/491574 - Monitor Out: Looping clips with certain cards enabled occasionally caused tearing or frame skips on the monitor display.
- BUG ID 491583 - NDK Documentation: The Cryptomatte and Tetrahedron example files were missing from the examples directory.
- BUG ID 491881 - Windows only: Read node error displays in the Viewer, such as missing colorspaces, occasionally caused Nuke to crash.

- BUG ID 492229 - Sync Review: Clicking the **Connect** button a few times with an invalid **Host** name occasionally caused the application to crash.
- BUG ID 492443 - Soft Effects: Copying effects from Nuke Indie to Nuke Studio Non-Commercial was enabled incorrectly.
- BUG ID 492587 - Nuke Indie: The **Tags** panel could not be accessed as expected.
- BUG ID 494776 - Create Comp: Saving a comp and then returning to the timeline environment occasionally stopped some shots displaying as expected in the timeline Viewer.

New Known Issues Specific to Nuke 13.0

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

- BUG ID 495149 - Viewer: Enabling **use GPU for Viewer when possible** in the Viewer **Properties** panel with **dithering algorithm** set to **low frequency** causes the Viewer to display no image.
  As a workaround with OCIO color management, you can check **Enable OCIO GPU path for the GPU Viewer** in the **Project Settings**.

Note: The workaround does not apply to projects running under Nuke color management.

- BUG ID 494532 - Color Management: Clearing or closing and reopening a comp in Nuke causes the **Project Settings** > **Color** > **color management** control to reset to the default **Nuke** value.
- BUG ID 492259 - Monitor Out: Resizing a floating monitor out window with **title safe** guides enabled causes the monitor to flicker.
- BUG ID 492248 - Upscale: Setting **Project Settings** > **Color** > **OCIO config** to **nuke-default** and upscaling an image causes an unexpected color shift.
- BUG ID 488817 - Hydra: The Project3D node's **project on** control always projects on both faces regardless of the option chosen.
- BUG ID 486238 - Inference: Previewing a CopyCat **.ost** file in the application file browser causes Nuke to crash.
- BUG ID 485000 - CopyCat: The description box for error values on the Loss/Step graph does not scale correctly with larger values.
- BUG ID 472519 - CopyCat: Training a network using multi-layer source and ground truth images, such as **.exr** files, does not work as expected.
  As a workaround, use a Shuffle node to remove all layers except **rbga**.
- BUG ID 470014 - macOS only: Canceling the CopyCat training progress bar during the **validating inputs** phase causes Nuke to display an error message.
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- BUG ID 469655 - Monitor Out: Title safe **format** not showing on perimeter edges of Monitor Out.
- BUG ID 469593 - Monitor Out: The Monitor Out panel tab is difficult to access.
- BUG ID 469578 - Monitor Out: Crashing when changing resolution modes during playback.
- BUG ID 469262 - Monitor Out: Prior to Nuke 13.0v1 it was possible to have multiple Monitor Out devices.
- BUG ID 469132 - USD: Light3 panel shows a small broken column after using **read from file**.
- BUG ID 468980 - Monitor Out: Switching between files that have different aspect ratios leaves behind some of the previous image in the floating window.
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Developer Notes

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.

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Version	12.0v1 to 12.0v2	API and ABI		
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Major	12.0v1 to 13.0v1	-	●	●

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")
```

Release Notes for Nuke and Hiero 13.0v5

Release Date

28 September 2021

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> **Note:** The VFX Platform 2020 upgrade includes library versions that are only compatible with CentOS 7.4, or later.

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 3.0 (Kepler) or above. A list of the compute capabilities of NVIDIA GPUs is available at https://developer.nvidia.com/cuda-gpus

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 10.1 or above. On Windows and Linux, CUDA graphics drivers are bundled with the regular drivers for your NVIDIA GPU. Driver versions 418.96 (Windows) and 418.39 (Linux), or above are required. See https://www.nvidia.com/Download/Find.aspx for more information.

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

AMD

Note: Bit-wise equality between GPU and CPU holds in most cases, but for some operations there are limitations to the accuracy possible with this configuration.

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

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

- AMD Radeon Pro WX 7100
- AMD Radeon Pro W 5700
- AMD Radeon Pro WX 8200
- AMD Radeon Pro WX 9100

- AMD Radeon RX 6800 XT

Note: For information on the recommended driver for each GPU, see https://www.amd.com/en/support

- On Mac, integrated AMD GPUs are supported on the following Intel CPU Macs:
  - Any late 2013 Mac Pro onward (including 2019 Mac Pro),
  - Mid-2015 MacBook Pros onward, and
  - Late 2017 iMac Pros onward.

  All supported Mac Pros include a multi-GPU support option, where applicable. Bitwise equality between GPU and CPU holds in most cases, but for some operations, there are limitations to the accuracy possible with this configuration.

Warning: Although AMD GPUs are enabled on other Mac models, they are not officially supported and used at your own risk.

Multi-GPU Processing

Nuke's GPU support includes an **Enable multi-GPU support** option. When enabled in the preferences, GPU processing is shared between the available GPUs for extra processing speed.

Note: Multi-GPU processing is only available for identical GPUs in the same machine. For example, two NVIDIA GeForce GTX 1080s or two AMD Radeon™ Pro WX 9100s.

New Features

- BUG ID 244774 - Timeline Editing: You can now copy and paste shots and soft effects between different projects in the same Nuke Studio or Hiero session and between Nuke Studio and Hiero sessions.

Feature Enhancements

There are no feature enhancements in this release.

Bug Fixes

- BUG ID 351910 - Timeline Editing: Copying a sequence into a new project did not work as expected.
- BUG ID 352502 - Localization: Clearing a comp or closing and reopening a script discarded the green localization progress bar on Read nodes.
- BUG ID 380723 - Read/Write: Clicking **Load Settings from RMD** in **.r3d** files written using IPP2 incorrectly enabled the **Colorspace** and **Gamma Curve** controls.
- BUG ID 391032 - DeepRead: Using Tcl and Python expressions in the **file** control displayed a **Plugin Error** message.
- BUG ID 405652 - Node **liftimeStart** knob values were not saved in the Nuke script if the **start** or **end** values were **0**.
- BUG ID 413707 - EdgeExtend: The **Matte has no fully white pixels to sample from** error message was not ignored correctly in some cases, causing renders to fail unnecessarily.
- BUG ID 426901 - File Formats Update: In **IPP2 Custom** mode, enabling the **Use GPU** checkbox displayed grading controls from the **IPP2 Pipeline** incorrectly.
- BUG ID 435284 - Python: Calling **nuke.message()** or **nuke.alert()** did not pause processing on the main thread as expected.
- BUG ID 440798 - Timeline Editing: Using the **Ripple Delete** (**Shift**+**Backspace**) shortcut in the timeline occasionally offset frames incorrectly.
- BUG ID 461944 - Python: Changing a Read node from an image sequence to a container file format Pythonically caused Nuke to crash if the Read node had **postage stamp** set to a **static frame**.
- BUG ID 462986 - Read/Write: Importing **.mov** files with custom resolutions occasionally caused the application to crash.
- BUG ID 468630 - Monitor Out: Certain controls in the **Monitor Out** strip did not work as expected.
- BUG ID 475029 - Cryptomatte: The **cryptoLayerChoice** knob value was not retained when opening certain scripts containing a gizmo.
- BUG ID 483089 - Python: Calling **import nuke** failed to load modules using Nuke's Python interpreter.
- BUG ID 483350 - Read/Write: Loading unknown file types after loading a **.mov** file caused Nuke to crash.
- BUG ID 483554 - Developer Info: **numCPUs** was used where **numThreads** should be used.
- BUG ID 483961 - Python: Nuke renders did not set the thread count reliably using **-m** or **nuke.env ['threads'] = n**.
- BUG ID 484526 - Python: Dragging and dropping a custom PySide2 widget on a panel in Nuke caused the application to crash.
- BUG ID 484726 - Soft Effects: Undoing cut or delete operations on cloned effects occasionally decoupled the clone state, reverting it to a standard effect.

- BUG ID 484879 - Soft Effects: Cutting and pasting a clone occasionally created a standard effect, rather than a clone.
- BUG ID 485146 - Developer Info: Nuke's arg parser used a too-small, signed **int** for memory limits.
- BUG ID 485619 - Cryptomatte: Mattes with floating point IDs containing hyphens could not be selected in the Viewer.
- BUG ID 487403 - Cryptomatte: Clicking **Picker Add** did not allow you to pick mattes with names containing - (dash) characters.
- BUG ID 488584 - Cryptomatte: Clicking **Picker Remove** didn't work for mattes with floating point ID values.

New Known Issues Specific to Nuke 13.0

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

- BUG ID 486238 - Inference: Previewing a CopyCat **.ost** file in the application file browser causes Nuke to crash.
- BUG ID 485000 - CopyCat: The description box for error values on the Loss/Step graph does not scale correctly with larger values.
- BUG ID 472519 - CopyCat: Training a network using multi-layer source and ground truth images, such as **.exr** files, does not work as expected.
  As a workaround, use a Shuffle node to remove all layers except **rbga**.
- BUG ID 471681 - CopyCat: Training a network from the command prompt with the **-X** argument (execute only the specified node) occasionally fails.
- BUG ID 470149 - CopyCat: Training cannot be resumed from the command line. For example, using **copyCatNode.knob('resumeTraining').execute()** displays an optimizer error.
  As a workaround, open the script in GUI mode and click **Resume Training**.
- BUG ID 470014 - macOS only: Canceling the CopyCat training progress bar during the **validating inputs** phase causes Nuke to display an error message.
- BUG ID 470012 - CopyCat: Canceling the training progress bar during the **caching inputs** phase causes Nuke to crash.
- BUG ID 470001 - CopyCat: The **Batch Size** tooltip should state that the size must be *less than or equal to* the number of image pairs in the data set.
- BUG ID 469655 - Monitor Out: Title safe **format** not showing on perimeter edges of Monitor Out.
- BUG ID 469593 - Monitor Out: The Monitor Out panel tab is difficult to access.
- BUG ID 469578 - Monitor Out: Crashing when changing resolution modes during playback.
- BUG ID 469262 - Monitor Out: Prior to Nuke 13.0v1 it was possible to have multiple Monitor Out devices.
- BUG ID 469132 - USD: Light3 panel shows a small broken column after using **read from file**.

- BUG ID 468999 - AIR: Using the Deblur, Inference, or Upscale nodes on large images occasionally causes Nuke to crash.
- BUG ID 468980 - Monitor Out: Switching between files that have different aspect ratios leaves behind some of the previous image in the floating window.
- BUG ID 468665 - Nuke Studio: White screen display when scaling the timeline Viewer.
- BUG ID 467984 - USD: Camera3 doesn't show the full camera Path.
- BUG ID 467270 - USD: Can't highlight multiple items in the SceneGraph.
- BUG ID 467265 - USD: Highlight selections gets stuck within the SceneGraph.
- BUG ID 467257 - USD: Pressing **Spacebar** in the SceneGraph disables items and opens the panel in full-screen at the same time.
- BUG ID 467229 - USD: Layout issues with the **Type** column when resizing the SceneGraph.
- BUG ID 467209 - USD: Importing a USD with the **R** hotkey doesn't display the filename in the SceneGraph.
- BUG ID 467198 - CopyCat: Clicking the refresh button above the graph does not update the **Runs** table.
- BUG ID 467195 - macOS only: Switching desktop while an Upscale node is processing displays an **OMP: Warning #190: Forking a process while a parallel region is active is potentially unsafe** error message repeatedly on the command line.
- BUG ID 466734 - CopyCat: Stopping training on the CPU and then resuming on the GPU, and the opposite GPU to CPU, does not work as expected.
- BUG ID 465112 - Hydra: Viewing animated USD's file will playback faster, when moving the camera / dragging a selection box over the viewer.
- BUG ID 464964 - Installing Nuke 13.0 takes significantly longer than Nuke 12.2.
- BUG ID 464442 - Cryptomatte: Clicking the **Clear** button under the **Matte List** cannot be undone as expected.
- BUG ID 463253 - Hydra: Solid color applied in Hydra Viewer when set to **textured** in the **Display Settings**.
- BUG ID 462011 - macOS only: Certain machines running Big Sur display **QWidgetWindow()** command line errors on start up.
- BUG ID 461710 - USD: Axis, Camera and Light in Viewer are set to default until selected.
- BUG ID 459921 - Toggling the **Materials** checkbox in the Hydra Viewer causes the grid to display incorrectly.
- BUG ID 459512 - CopyCat: The **Properties** panel does not always update to reflect changes to upstream channels.
  As a workaround, close and reopen the **Properties** panel.
- BUG ID 458511 - CopyCat: The **visibility** control in the **Graphs** tab is reset by the next update if it is toggled while training is running.

- BUG ID 458509 - CopyCat: Enabling or disabling **Log Scale** in the **Graphs** tab causes graph updates to lag.
- BUG ID 458508 - CopyCat: Training does not currently stop or display an error if a NaN value is encountered.
- BUG ID 457886 - USD: Alembic **.abc** items not graying out when **read from file** is checked until refresh.
- BUG ID 457608 - Monitor Out: Some menus in Monitor Out **Strip overflow** menu not functional.
- BUG ID 456513 - QPainter error messages printed to the terminal.
- BUG ID 448430 - Monitor Out: Floating window occasionally not minimizing in Nuke Studio.
- BUG ID 445909 - Monitor Out: Video Legal Range not working correctly with certain AJA cards.
- BUG ID 445560 - macOS only: MO XDR: Nuke occasionally crashes on setting Monitor Out workspace when using XDR monitor.
- BUG ID 443270 - Monitor Out: GUI strip updates as viewer spawns.
- BUG ID 441488 - Nuke crashes when executing the Marcom2D script with command line **-c 8G.**
- BUG ID 440212 - Nuke crashes when executing the Marcom2D script in command line.
- BUG ID 427838 - Windows only: Monitor Out: Moving floating window to 4K monitor crashes or scales incorrectly.

Developer Notes

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	12.0v1 to 12.0v2	API and ABI		
Point	12.0v1 to 12.1v1	API	●	
Major	12.0v1 to 13.0v1	-	●	●

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")
```

Release Notes for Nuke and Hiero 13.0v4

Release Date

28 July 2021

Warning: As a result of the current COVID-19 government recommendations here in the UK, much of the Nuke team is still working from home. Currently, Foundry cannot guarantee that our usual high standards of QA have been applied to Nuke's monitor output functionality, including VR headset support, in this release.

Qualified Operating Systems

Note: Installing Nuke 13.0 takes significantly longer than Nuke 12.2 builds, particularly on Windows OS, due to the upgrade to Python 3 and the addition of the PyTorch library.

- macOS Catalina (10.15.x) or macOS Big Sur (11.x)
- Windows 10 (64-bit)
- CentOS 7.4, 7.5, and 7.6 (64-bit)

Note: The VFX Platform 2020 upgrade includes library versions that are only compatible with CentOS 7.4, or later.

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 3.0 (Kepler) or above. A list of the compute capabilities of NVIDIA GPUs is available at https://developer.nvidia.com/cuda-gpus

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 10.1 or above. On Windows and Linux, CUDA graphics drivers are bundled with the regular drivers for your NVIDIA GPU. Driver versions 418.96 (Windows) and 418.39 (Linux), or above are required. See https://www.nvidia.com/Download/Find.aspx for more information.

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

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Note: Bit-wise equality between GPU and CPU holds in most cases, but for some operations there are limitations to the accuracy possible with this configuration.

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

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- AMD Radeon Pro W 5700
- AMD Radeon Pro WX 8200
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- AMD Radeon RX 6800 XT

Note: For information on the recommended driver for each GPU, see https://www.amd.com/en/support

- On Mac, integrated AMD GPUs are supported on the following Intel CPU Macs:
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Warning: Although AMD GPUs are enabled on other Mac models, they are not officially supported and used at your own risk.

Multi-GPU Processing

Nuke's GPU support includes an **Enable multi-GPU support** option. When enabled in the preferences, GPU processing is shared between the available GPUs for extra processing speed.

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New Features

HieroPlayer - Now Free with Nuke and NukeX

HieroPlayer is now a free annual subscription with your Nuke or NukeX license. Simply renew your existing Nuke or NukeX license to receive your HieroPlayer entitlement or fill in the on-demand form.

HieroPlayer is an artist desktop review tool that lets you play back shots or a sequence and compare versions of renders quickly, letting you easily see your work in the context of the VFX timeline.

See HieroPlayer Free with Nuke for more information.

Feature Enhancements

- BUG ID 481030 - HieroPlayer now supports track blending in the same way as Nuke Studio and Hiero. See Blending Tracks on the Timeline for more information.
- BUG ID 481534 - HieroPlayer now includes several new workspaces tailored to specific tasks, including Flipbook Player, Reviewing, and Sync Session.

Bug Fixes

- BUG ID 282435 - HieroPlayer: Random shots on the timeline were occasionally locked.
- BUG ID 378555 - Localization: Playback during localization of source files did not perform as expected.
- BUG ID 427913 - Monitor Out: Looping a sequence occasionally skipped frames on the monitor and in the timeline Viewer.
- BUG ID 436068/443679 - Sync Review: Reviewing large projects referencing remote server footage was sluggish and occasionally caused reconnection issues or the application to crash.
- BUG ID 437414 - Windows only: Pressing **V** to display available versions on an offline shot caused Nuke Studio to crash.
- BUG ID 440884 - Sync Review: Clicking the update button in a client session with Viewer A/B mode active disconnected the client.
- BUG ID 465300 - Read/Write: Certain **Photo - JPEG** encoded **.mov** files with non-standard format sizes caused Nuke Studio to crash.
- BUG ID 469710 - Read/Write: Certain **.mov** files caused Nuke Studio and Hiero to crash.
- BUG ID 473394 - Sync Review: Client sessions occasionally disconnected from the host when reviewing in large projects.
- BUG ID 473395 - Sync Review: Pushing changes from a client to the host occasionally disconnected or caused the application to crash.
- BUG ID 474853 - Cryptomatte: Selecting mattes with opacity values less than 1 did not work as expected.
- BUG ID 477143 - OCIO: Using **Set Media Color Transform** on a bin clip and enabling OCIO/ACES did not always update the Read node's **colorspace** control as expected.
- BUG ID 481790 - Localization: Opening a project containing localized files caused Nuke Studio to become unresponsive.
- BUG ID 482494 - HieroPlayer: Saving a custom workspace over a default workspace and assigning a different keyboard shortcut caused the order of existing keyboard shortcuts to display incorrectly.
- BUG ID 482618 - Windows only: The NDK Examples **index.html** page is missing from: **<install_dir>/Documentation/NDKExamples**

New Known Issues Specific to Nuke 13.0

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

- BUG ID 472519 - CopyCat: Training a network using multi-layer source and ground truth images, such as **.exr** files, does not work as expected.
  As a workaround, use a Shuffle node to remove all layers except **rbga**.
- BUG ID 471681 - CopyCat: Training a network from the command prompt with the **-X** argument (execute only the specified node) occasionally fails.
- BUG ID 470149 - CopyCat: Training cannot be resumed from the command line. For example, using **copyCatNode.knob('resumeTraining').execute()** displays an optimizer error.
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- BUG ID 470001 - CopyCat: The **Batch Size** tooltip should state that the size must be *less than or equal to* the number of image pairs in the data set.
- BUG ID 469655 - Monitor Out: Title safe **format** not showing on perimeter edges of Monitor Out.
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- BUG ID 469578 - Monitor Out: Crashing when changing resolution modes during playback.
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- BUG ID 468980 - Monitor Out: Switching between files that have different aspect ratios leaves behind some of the previous image in the floating window.
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- BUG ID 467984 - USD: Camera3 doesn't show the full camera Path.
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- BUG ID 467195 - macOS only: Switching desktop while an Upscale node is processing displays an **OMP: Warning #190: Forking a process while a parallel region is active is potentially unsafe** error message repeatedly on the command line.
- BUG ID 466734 - CopyCat: Stopping training on the CPU and then resuming on the GPU, and the opposite GPU to CPU, does not work as expected.
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- BUG ID 464964 - Installing Nuke 13.0 takes significantly longer than Nuke 12.2.
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- BUG ID 458508 - CopyCat: Training does not currently stop or display an error if a NaN value is encountered.
- BUG ID 457886 - USD: Alembic **.abc** items not graying out when **read from file** is checked until refresh.
- BUG ID 457608 - Monitor Out: Some menus in Monitor Out **Strip overflow** menu not functional.
- BUG ID 456513 - QPainter error messages printed to the terminal.
- BUG ID 448430 - Monitor Out: Floating window occasionally not minimizing in Nuke Studio.
- BUG ID 445909 - Monitor Out: Video Legal Range not working correctly with certain AJA cards.
- BUG ID 445560 - macOS only: MO XDR: Nuke occasionally crashes on setting Monitor Out workspace when using XDR monitor.
- BUG ID 443270 - Monitor Out: GUI strip updates as viewer spawns.
- BUG ID 441488 - Nuke crashes when executing the Marcom2D script with command line **-c 8G.**
- BUG ID 440212 - Nuke crashes when executing the Marcom2D script in command line.

- BUG ID 427838 - Windows only: Monitor Out: Moving floating window to 4K monitor crashes or scales incorrectly.

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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.

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

Release Notes for Nuke and Hiero 13.0v3

Release Date

01 July 2021

Warning: As a result of the current COVID-19 lockdown here in the UK, Foundry cannot guarantee that our usual high standards of QA have been applied to Nuke's monitor output functionality, including VR headset support, in this release.

Qualified Operating Systems

Note: Installing Nuke 13.0 takes significantly longer than Nuke 12.2 builds, particularly on Windows OS, due to the upgrade to Python 3 and the addition of the PyTorch library.

- macOS Catalina (10.15.x) or macOS Big Sur (11.x)
- Windows 10 (64-bit)
- CentOS 7.4, 7.5, and 7.6 (64-bit)

Note: The VFX Platform 2020 upgrade includes library versions that are only compatible with CentOS 7.4, or later.

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

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

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Note: Bit-wise equality between GPU and CPU holds in most cases, but for some operations there are limitations to the accuracy possible with this configuration.

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Warning: Although AMD GPUs are enabled on other Mac models, they are not officially supported and used at your own risk.

Multi-GPU Processing

Nuke's GPU support includes an **Enable multi-GPU support** option. When enabled in the preferences, GPU processing is shared between the available GPUs for extra processing speed.

Note: Multi-GPU processing is only available for identical GPUs in the same machine. For example, two NVIDIA GeForce GTX 1080s or two AMD Radeon™ Pro WX 9100s.

New Features

OCIO

Several new OCIO soft effects have been added to Nuke Studio and Hiero and the Colorspace soft effect has been renamed for clarity:

- OCIO ColorSpace
- OCIO Display Transform
- OCIO Log Convert

- OCIO Look Transform

See Soft Effects in Nuke's Online Help for more information.

Feature Enhancements

- BUG ID 474434 - Non-Commercial: The CopyCat and Inference nodes can now be used in NukeX Non-Commercial mode.
- BUG ID 475760 - OCIO: Setting **isdata: true** in your OCIO config file for a certain colorspace now bypasses the Viewer Transform. This is useful for colorspaces using non-color data channels such as the normals pass in multi-pass renders.

Bug Fixes

- BUG ID 273650 - OCIO: Looks were not applied to the Nuke Studio Viewer as expected.
- BUG ID 358709 - Documentation: A layer command was missing attributes in the Nuke Python Developer's Guide for Channels.
- BUG ID 360410 - Selecting **File** > **New Comp** in Nuke did not carry command-line arguments, such as **--safe**, over to the new Nuke script.
- BUG ID 392571 - Soft Effects: Copying and pasting a shot that included a cloned soft effect removed the effect on the copy.
- BUG ID 428258 - Python: Commenting out the last line of code in the Script Editor caused Nuke to become unresponsive.
- BUG ID 437414 - Windows only: Pressing **V** to display available versions on an offline shot caused Nuke Studio to crash.
- BUG ID 444711 - Assert: Adding an Assert node between transforms broke concatenation.
- BUG ID 453576/472075 - Tags: Selecting a new icon for a tag did not update the tag icon in the Viewer as expected.
- BUG ID 458752 - Licensing: Nuke did not display licensing errors as expected.
- BUG ID 466816 - Read/Write: Certain **.mp4**/**.mov** files caused Nuke to become unresponsive during playback of the last frame.
- BUG ID 467080 - Export: Re-exporting comps occasionally displayed an **out of frame range** warning in the Viewer after scanning for versions and then versioning up.
- BUG ID 469046 - Soft Effects: Some effects were displayed in different colors between Nuke Studio and Hiero or HieroPlayer.
- BUG ID 469260 - Read/Write: Failure to decode a frame from certain **.mov**/**.mp4** files written with a "non-intra" codec caused Nuke to become unresponsive.

- BUG ID 470531 - Retiming: Attempting to retime a clip on an odd number frame at clip-level, resulted in frame offsets in exported shots.
- BUG ID 470569 - Retiming: Exporting a shot with frame handles beyond the source clip handle range and then clicking **Build Track from Export Tag** reimported the shot with an offset if the source clip did not start at frame 1.
- BUG ID 471672 - Viewers: Disabling tracks in a sequence did not update the timeline Viewer as expected.
- BUG ID 473399 - Viewing the output of certain scripts including a Merge (under), Shuffle, and Write node caused Nuke to crash.
- BUG ID 473689 - Sync Review: Importing files during a Sync Review session occasionally caused Nuke Studio to crash.
- BUG ID 475236 - Project Bin: Deleting bin items from certain Nuke Studio projects was occasionally slow.
- BUG ID 475297 - Viewers: Selecting **Audio and Video** in the timeline Viewer settings did not display the audio waveform.
- BUG ID 475479 - HieroPlayer: Opening the **Preferences** and then clicking **OK** without making any changes caused HieroPlayer to crash.
- BUG ID 475778 - Group: Copying/pasting or loading Group nodes from ToolSets placed the node incorrectly in the Node Graph.
- BUG ID 476091 - Export: Re-exporting comps and then opening the new comp occasionally displayed a **no such file or directory** error.
- BUG ID 476207 - Cryptomatte: The example plug-in did not work as expected.
- BUG ID 476360 - C_Stitcher: The output of C_Stitcher was re-rendered for every scanline in the Viewer.
- BUG ID 477141 - Read/Write: The **Render to timeline** option was missing from the Nuke Studio **Render** dialog.
- BUG ID 477320 - Python: Some files were missing from the Flipbooking with External Applications **pyQtExamples** directory.

New Known Issues Specific to Nuke 13.0

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

- BUG ID 482618 - Windows only: The NDK Examples **index.html** page is missing from:
  <install_dir>/Documentation/NDKExamples
  As a workaround, use this location instead:
  <install_dir>/Documentation/NDKExamples/NDK/index.html
- BUG ID 472519 - CopyCat: Training a network using multi-layer source and ground truth images, such as **.exr** files, does not work as expected.
  As a workaround, use a Shuffle node to remove all layers except **rbga**.

- BUG ID 470149 - CopyCat: Training cannot be resumed from the command line. For example, using **copyCatNode.knob('resumeTraining').execute()** displays an optimizer error.
  As a workaround, open the script in GUI mode and click **Resume Training**.
- BUG ID 470014 - macOS only: Canceling the CopyCat training progress bar during the **validating inputs** phase causes Nuke to display an error message.
- BUG ID 470012 - CopyCat: Canceling the training progress bar during the **caching inputs** phase causes Nuke to crash.
- BUG ID 470001 - CopyCat: The **Batch Size** tooltip should state that the size must be *less than or equal to* the number of image pairs in the data set.
- BUG ID 469655 - Monitor Out: Title safe **format** not showing on perimeter edges of Monitor Out.
- BUG ID 469593 - Monitor Out: The Monitor Out panel tab is difficult to access.
- BUG ID 469578 - Monitor Out: Crashing when changing resolution modes during playback.
- BUG ID 469262 - Monitor Out: Prior to Nuke 13.0v1 it was possible to have multiple Monitor Out devices.
- BUG ID 469132 - USD: Light3 panel shows a small broken column after using **read from file**.
- BUG ID 468999 - AIR: Using the Deblur, Inference, or Upscale nodes on large images occasionally causes Nuke to crash.
- BUG ID 468980 - Monitor Out: Switching between files that have different aspect ratios leaves behind some of the previous image in the floating window.
- BUG ID 468665 - Nuke Studio: White screen display when scaling the timeline Viewer.
- BUG ID 467984 - USD: Camera3 doesn't show the full camera Path.
- BUG ID 467270 - USD: Can't highlight multiple items in the SceneGraph.
- BUG ID 467265 - USD: Highlight selections gets stuck within the SceneGraph.
- BUG ID 467257 - USD: Pressing **Spacebar** in the SceneGraph disables items and opens the panel in full-screen at the same time.
- BUG ID 467229 - USD: Layout issues with the **Type** column when resizing the SceneGraph.
- BUG ID 467209 - USD: Importing a USD with the **R** hotkey doesn't display the filename in the SceneGraph.
- BUG ID 467198 - CopyCat: Clicking the refresh button above the graph does not update the **Runs** table.
- BUG ID 467195 - macOS only: Switching desktop while an Upscale node is processing displays an **OMP: Warning #190: Forking a process while a parallel region is active is potentially unsafe** error message repeatedly on the command line.
- BUG ID 466734 - CopyCat: Stopping training on the CPU and then resuming on the GPU, and the opposite GPU to CPU, does not work as expected.
- BUG ID 465112 - Hydra: Viewing animated USD's file will playback faster, when moving the camera / dragging a selection box over the viewer.
- BUG ID 464964 - Installing Nuke 13.0 takes significantly longer than Nuke 12.2.

- BUG ID 464442 - Cryptomatte: Clicking the **Clear** button under the **Matte List** cannot be undone as expected.
- BUG ID 463253 - Hydra: Solid color applied in Hydra Viewer when set to **textured** in the **Display Settings**.
- BUG ID 462011 - macOS only: Certain machines running Big Sur display **QWidgetWindow()** command line errors on start up.
- BUG ID 461710 - USD: Axis, Camera and Light in Viewer are set to default until selected.
- BUG ID 459921 - Toggling the **Materials** checkbox in the Hydra Viewer causes the grid to display incorrectly.
- BUG ID 459512 - CopyCat: The **Properties** panel does not always update to reflect changes to upstream channels.
  As a workaround, close and reopen the **Properties** panel.
- BUG ID 458511 - CopyCat: The **visibility** control in the **Graphs** tab is reset by the next update if it is toggled while training is running.
- BUG ID 458509 - CopyCat: Enabling or disabling **Log Scale** in the **Graphs** tab causes graph updates to lag.
- BUG ID 458508 - CopyCat: Training does not currently stop or display an error if a NaN value is encountered.
- BUG ID 457886 - USD: Alembic **.abc** items not graying out when **read from file** is checked until refresh.
- BUG ID 457608 - Monitor Out: Some menus in Monitor Out **Strip overflow** menu not functional.
- BUG ID 456513 - QPainter error messages printed to the terminal.
- BUG ID 448430 - Monitor Out: Floating window occasionally not minimizing in Nuke Studio.
- BUG ID 445909 - MO SDI: Video Legal Range not working correctly (AJA).
- BUG ID 445560 - macOS only: MO XDR: Nuke occasionally crashes on setting Monitor Out workspace when using XDR monitor.
- BUG ID 443270 - Monitor Out: GUI strip updates as viewer spawns.
- BUG ID 441488 - Nuke crashes when executing the Marcom2D script with command line **-c 8G.**
- BUG ID 440212 - Nuke crashes when executing the Marcom2D script in command line.
- BUG ID 427838 - Windows only: Monitor Out: Moving floating window to 4K monitor crashes or scales incorrectly.

Developer Notes

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	12.0v1 to 12.0v2	API and ABI		
Point	12.0v1 to 12.1v1	API	●	
Major	12.0v1 to 13.0v1	-	●	●

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")
```

Release Notes for Nuke and Hiero 13.0v2

Release Date

29 April 2021

Warning: As a result of the current COVID-19 lockdown here in the UK, Foundry cannot guarantee that our usual high standards of QA have been applied to Nuke's monitor output functionality, including VR headset support, in this release.

Qualified Operating Systems

Note: Installing Nuke 13.0 takes significantly longer than Nuke 12.2 builds, particularly on Windows OS, due to the upgrade to Python 3 and the addition of the PyTorch library.

- macOS Catalina (10.15.x) or macOS Big Sur (11.x)
- Windows 10 (64-bit)
- CentOS 7.4, 7.5, and 7.6 (64-bit)

Note: The VFX Platform 2020 upgrade includes library versions that are only compatible with CentOS 7.4, or later.

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 3.0 (Kepler) or above. A list of the compute capabilities of NVIDIA GPUs is available at https://developer.nvidia.com/cuda-gpus

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 10.1 or above. On Windows and Linux, CUDA graphics drivers are bundled with the regular drivers for your NVIDIA GPU. Driver versions 418.96 (Windows) and 418.39 (Linux), or above are required. See https://www.nvidia.com/Download/Find.aspx for more information.

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

AMD

Note: Bit-wise equality between GPU and CPU holds in most cases, but for some operations there are limitations to the accuracy possible with this configuration.

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

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

- AMD Radeon Pro WX 7100
- AMD Radeon Pro W 5700
- AMD Radeon Pro WX 8200
- AMD Radeon Pro WX 9100

- AMD Radeon RX 6800 XT

Note: For information on the recommended driver for each GPU, see https://www.amd.com/en/support

- On Mac, integrated AMD GPUs are supported on the following Intel CPU Macs:
  - Any late 2013 Mac Pro onward (including 2019 Mac Pro),
  - Mid-2015 MacBook Pros onward, and
  - Late 2017 iMac Pros onward.

  All supported Mac Pros include a multi-GPU support option, where applicable. Bitwise equality between GPU and CPU holds in most cases, but for some operations, there are limitations to the accuracy possible with this configuration.

Warning: Although AMD GPUs are enabled on other Mac models, they are not officially supported and used at your own risk.

Multi-GPU Processing

Nuke's GPU support includes an **Enable multi-GPU support** option. When enabled in the preferences, GPU processing is shared between the available GPUs for extra processing speed.

Note: Multi-GPU processing is only available for identical GPUs in the same machine. For example, two NVIDIA GeForce GTX 1080s or two AMD Radeon™ Pro WX 9100s.

New Features

There are no new features in this release.

Feature Enhancements

There are no features enhancements in this release.

Bug Fixes

- BUG ID 140786 - Backdrop nodes should be created near pointer if nothing is selected.
- BUG ID 148736 - Backdrop node to be placed correctly wherever it is created.
- BUG ID 167882 - Read/Write: WriteGeo cannot export **.fbx** files with an upper case file extension.
- BUG ID 390137 - When expression linking knobs, the **value()** method appears to return the incorrect value.
- BUG ID 407810 - When Backdrop nodes are created, they are created to the right side of the Node Graph.
- BUG ID 446363 - Node undo/redo/reset knobs are disabled when making adjustments with a Shuffle2 node upstream.
- BUG ID 454180 - USD: Nuke crashes after copying and pasting cloned Camera/Axis node.
- BUG ID 456647 - UI: Resizing the Node Graph map to **0** causes the nodes in the Node Graph to disappear.
- BUG ID 466706 - USD: Undo doesn't work within the SceneGraph.
- BUG ID 466814 - Duplicate Alembics not showing on scene node.
- BUG ID 466845 - Hydra: Removing image input doesn't revert texture in Hydra viewport.
- BUG ID 468386 - Cryptomatte: Plugging in a node above Cryptomatte forces the Manifest source to change.
- BUG ID 468395 - Loading heavier geometry into the Hydra viewer then applying a Shader/Material causes the 2D viewer to have zoom/image issues.
- BUG ID 468608 - User Knobs: Custom user knobs created in at root level duplicate when script is closed and re-opened.
- BUG ID 468664 - Cryptomatte: **Picker Add** doesn't work with some of the matte names including special characters.
- BUG ID 469145 - OCIOv2: When OCIO roles are hidden, changing **Colour Management** causes errors.
- BUG ID 469401 - Cryptomatte: Scripts with Cryptomatte names including "**,**" saved with the Cryptomatte Gizmo are not correctly interpreted by the Cryptomatte plug-in.
- BUG ID 469412 - Runaway rescaling of the viewer with particular shaders.
- BUG ID 469506 - OCIO Roles: Changing the config file with OCIO Roles disabled displays errors in the **Project Settings**.
- BUG ID 469539 - Cryptomatte: Names including tabs not getting trimmed when copied/pasted into matte list.
- BUG ID 469559 - OCIO Roles: The default **Monitor Out** LUT in the **Project Settings** is incorrect from ACES 1.0.3 and 1.1 configurations.
- BUG ID 469648 - Hydra: Hydra Viewer shows incorrect texture for view from split knob.

- BUG ID 470087 - Cryptomatte: Unable to use TCL expressions in the **matteList** knob.
- BUG ID 470146 - Hydra: Hydra Viewer doesn't display the model builder preview texture.
- BUG ID 470583 - Node Graph: Dragging and dropping a node selection with a Read node creates an input on the Read node and connects it.
- BUG ID 470881 - Text node **clip to** knob doesn't handle black outside correctly.
- BUG ID 470999 - AddChannels **format_size** knob doesn't handle black outside correctly.
- BUG ID 471301 - Toggling the **enableShadows** knob in Hydra Viewer crashes Nuke.
- BUG ID 471335 - **.psd** breakout Layers do not work.
- BUG ID 471685 - OCIO Roles: Disabling OCIO roles causes errors for non-default color transform combo boxes.
- BUG ID 471781 - OCIO: Viewer custom OCIO config crashes when incorrect file path is added.
- BUG ID 471782 - OCIO: Viewer custom OCIO config crashes when colorspace cannot be found.
- BUG ID 472719 - The Viewer becomes corrupt or multiplied when tabbing between 3D and 2D with a 3D object and Roto nodes upstream in the Hydra Viewer.
- BUG ID 472732 - Cryptomatte: Cryptomatte plug-in resets layer selection when input is disconnected or modified by the addition of a Dot node.
- BUG ID 473043 - Setting colorspace roles in Nuke Studio/Hiero results in **Invalid LUT selected** error.
- BUG ID 473324 - Read/Write: WriteGeo file format detection different from Write.
- BUG ID 473587 - Cryptomatte: Nuke crashes when changing input from multi-crypto-layer stream to single-crypto-later.
- BUG ID 473744 - MacOS only: failing to catch exceptions in vectorizer.

New Known Issues Specific to Nuke 13.0

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

- BUG ID 427838 - Windows only: Monitor Out: Moving floating window to 4K monitor crashes or scales incorrectly.
- BUG ID 440212 - Nuke crashes when executing the Marcom2D script in command line.
- BUG ID 441488 - Nuke crashes when executing the Marcom2D script with command line **-c 8G.**
- BUG ID 443270 - Monitor Out: GUI strip updates as viewer spawns.
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- BUG ID 448430 - Monitor Out: Floating window occasionally not minimizing in Nuke Studio.
- BUG ID 456513 - QPainter error messages printed to the terminal.
- BUG ID 457608 - Monitor Out: Some menus in Monitor Out **Strip overflow** menu not functional.

- BUG ID 457886 - USD: Alembic **.abc** items not graying out when **read from file** is checked until refresh.
- BUG ID 459921 - Toggling the **Materials** checkbox in the Hydra Viewer causes the grid to display incorrectly.
- BUG ID 461710 - USD: Axis, Camera and Light in Viewer are set to default until selected.
- BUG ID 462011 - MacOS only: Certain machines running Big Sur display **QWidgetWindow()** command line errors on start up.
- BUG ID 463253 - Hydra: Solid color applied in Hydra Viewer when set to **textured** in the **Display Settings**.
- BUG ID 464964 - Installing 13.0 takes a significant of time amount compared to 12.2.
- BUG ID 465112 - Hydra: Viewing animated USD's file will playback faster, when moving the camera / dragging a selection box over the viewer.
- BUG ID 467209 - USD: Importing a USD with the **R** hotkey doesn't display the filename in the SceneGraph.
- BUG ID 467229 - USD: Layout issues with **Type** column when resizing the SceneGraph.
- BUG ID 467257 - USD: Pressing spacebar in the SceneGraph disables item and opens panel in full-screen at the same time.
- BUG ID 467265 - USD: Highlight selections gets stuck within the SceneGraph.
- BUG ID 467270 - USD: Can't hightlight multiple items in the SceneGraph.
- BUG ID 467984 - USD: Camera3 doesn't show the full camera Path.
- BUG ID 468665 - Nuke Studio: White screen display when scaling the Timeline Viewer
- BUG ID 468980 - Monitor Out: Switching between files that have different aspect ratios will leave behind some of the previous image in the floating window.
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- BUG ID 469262 - Monitor Out: Prior to Nuke 13.0v1 it was possible to have multiple Monitor Out devices.
- BUG ID 469578 - Monitor Out: Crashing when changing resolution modes during playback.
- BUG ID 469593 - Monitor Out: Monitor Out panel tab is difficult to access.
- BUG ID 469655 - Monitor Out: Title safe 'Format' not showing on perimeter edges of Monitor Out.

Developer Notes

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	12.0v1 to 12.0v2	API and ABI		
Point	12.0v1 to 12.1v1	API	●	
Major	12.0v1 to 13.0v1	-	●	●

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")
```

Release Notes for Nuke and Hiero 13.0v1

Release Date

17 March 2021

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Qualified Operating Systems

Note: Installing Nuke 13.0 takes significantly longer than Nuke 12.2 builds, particularly on Windows OS, due to the upgrade to Python 3 and the addition of the PyTorch library.

- macOS Catalina (10.15.x) or macOS Big Sur (11.x)
- Windows 10 (64-bit)
- CentOS 7.4, 7.5, and 7.6 (64-bit)

Note: The VFX Platform 2020 upgrade includes library versions that are only compatible with CentOS 7.4, or later.

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

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

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An NVIDIA GPU with compute capability 3.0 (Kepler) or above. A list of the compute capabilities of NVIDIA GPUs is available at https://developer.nvidia.com/cuda-gpus

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 10.1 or above. On Windows and Linux, CUDA graphics drivers are bundled with the regular drivers for your NVIDIA GPU. Driver versions 418.96 (Windows) and 418.39 (Linux), or above are required. See https://www.nvidia.com/Download/Find.aspx for more information.

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

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- AMD Radeon Pro WX 7100
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- AMD Radeon Pro WX 8200
- AMD Radeon Pro WX 9100

- AMD Radeon RX 6800 XT

Note: For information on the recommended driver for each GPU, see https://www.amd.com/en/support

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  - Late 2017 iMac Pros onward.

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Nuke's GPU support includes an **Enable multi-GPU support** option. When enabled in the preferences, GPU processing is shared between the available GPUs for extra processing speed.

Note: Multi-GPU processing is only available for identical GPUs in the same machine. For example, two NVIDIA GeForce GTX 1080s or two AMD Radeon™ Pro WX 9100s.

New Features

Hydra Viewer

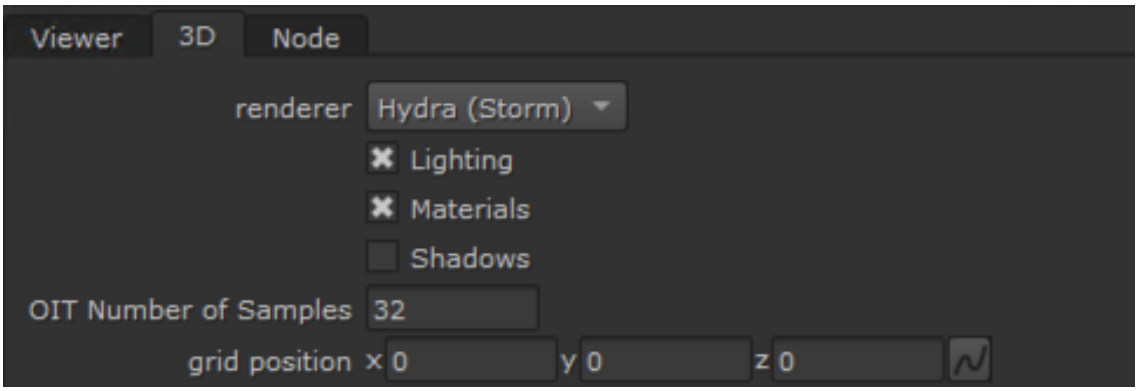
Nuke 13.0 adds Hydra support to Nuke's 3D Viewer, which utilizes hdStorm as a new viewport renderer. Supporting hdStorm in Nuke's Viewer ensures Nuke has a 3D Viewer consistent with other applications in your pipeline, such as Katana, Solaris, and USDView, as well as providing a 3D Viewer that more closely represents the output from ScanlineRender.

Note: The Hydra Viewer is currently only available on Windows and Linux OS.

Nuke Viewer | Hydra Viewer | Scanline Render

The Hydra Viewer is now the default 3D Viewer, but you can choose which Viewer to use in the Viewer Properties **3D** > **renderer** dropdown. You can also select whether or not to display lights, materials and shadows in the Hydra Viewer by toggling the relevant checkboxes.

OIT Number of Samples controls the render quality when you have multiple overlapping semi-transparent objects in the 3D Viewer. Increasing the number of samples improves the rendered output, but uses more OS resources and can affect performance.



USD - Camera, Lights, and Axis

Nuke 13.0 introduces the ability to load Camera, Light and Axis data from a **.usd** file via the relevant native 3D nodes in Nuke. This means if you've started using USD elsewhere in your pipeline, you can continue to use it to carry the data you need directly into Nuke without converting to a different format.

Each node includes UI and Scenegraph improvements to help with working with USD data, while still allowing artists to continue with familiar workflows. The extensions to the nodes are open source so that pipelines can further extend and customize these nodes for their unique USD setup.

- Ability to load USD camera data into Nukes native Camera node
- Ability to load USD light data into Nukes native Light node

Note: Only Point, Spot, and Directional lights are supported.

- Ability to load USD data into Nukes native Axis node and use a selected prim's position data to populate the Axis node knobs
- USD version upgrade to 20.08

Extended Monitor Out

We have extended the Monitor Out feature and unified the systems in Nuke and Nuke Studio, bringing a more stable and consistent experience across the Nuke family. This work brings many exciting new features into Nuke, including independent output transform controls, and the floating window, a separate display that can be viewed without a monitor out card. These additions will benefit artists working without a separate SDI out device as well as those who frequently use monitor out within the Nuke family.

As well as the valuable enhancements for Nuke users, stability, reliability and usability have all been greatly improved in the Nuke Studio workflow. The experience moving between the timeline and nodegraph when using the monitor out is also much smoother.

Monitor Out features (Nuke and Nuke Studio)

- New Monitor Out node for selecting and controlling output devices
    - Supports floating window as well as AJA and BMD SDI/HDMI devices
    - Minimize floating window with application
    - Improved layout of video card resolution settings
        - Resolutions now grouped together in easy to use cascade menu
        - PsF formats added to BMD cards
    - Display of SDK and Driver versions for AJA and BMD devices
    - Online help provided in the Help button (?) of the **Properties** panel
- New workspace added for quick access to **Monitor Out** strip
- New overflow menu added to **Monitor Out** strip
- New **Preferences**:
    - **Viewer (Monitor Out)**
    - **Color Management** preferences updated to include Monitor Out
        - OCIO preferences and **Default Color Transforms** added to Nuke
    - Background color choice in floating window
    - Keep floating window on top
    - Control to disable VR headset devices

Monitor Out Features in Nuke (previously exclusive to Nuke Studio)

- Floating Window
- Output transform color settings are independent from the Viewer
- Input Process activation independent from the Viewer
    - Can be used to change the resolution of the output to the device - for example, when working in 4K and monitoring via HD SDI
- Gain and Gamma control activation independent from the Viewer
- Buffer control activation independent from the Viewer
- Flip the monitor output vertically

AJA Kona SDK Update

- AJA SDK has been updated to 15.5.4
- There may be AJA issues when using macOS 11.0 (Big Sur)

Note: When using this release you will need to update the driver on your card to 15.5.3
This unified software, driver and firmware package contains everything you need in order to start using your AJA video I/O hardware and includes enhancements.
macOS Driver Installer
Windows Driver Installer
Linux Driver Installer
Please read the AJA Desktop Software – Release Notes v15.5.3 for complete detail.

BMD Decklink SDK Update

- BMD DeckLink SDK has been updated to 11.7
- This update adds support for macOS 11.0 (Big Sur)

Note: When using this release you will need to update the driver on your card to 11.7
This unified software, driver and firmware package contains everything you need in order to start using your BMD video I/O hardware and includes enhancements.
macOS Driver Installer
Windows Driver Installer
Linux Driver Installer
Please read the BMD Decklink software - Release Notes v11.7 for complete detail.

HDR Display - macOS Only (Beta)

This release includes the ability to enable HDR display workflows on macOS. If you're running Nuke on macOS Catalina or Big Sur and have a compatible screen capable of displaying values above 1, you can view your projects with HDR luminance ranges using **sRGBf** in OCIO Color Management. You can also display images in the P3 gamut, giving more accurate color on wide gamut displays.

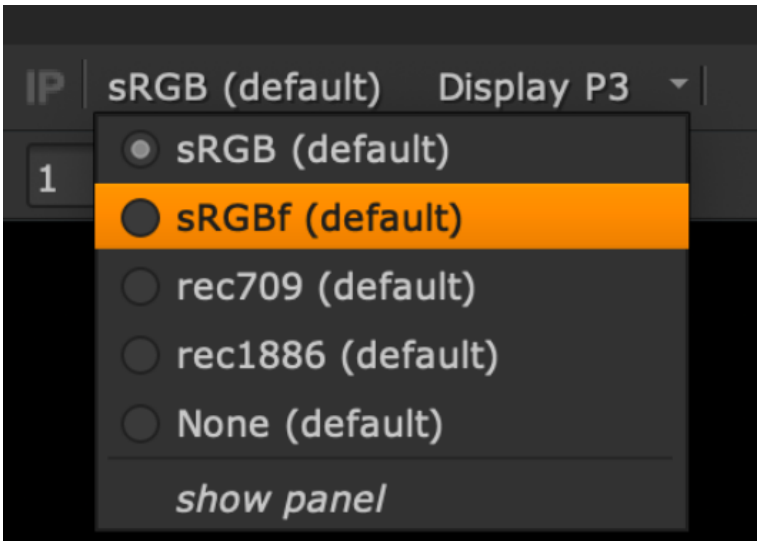
Note: This feature requires a 2019 Mac Pro running macOS 10.15, or later, and a suitable display or a current generation iMac Pro, iMac or MacBook Pro with an HDR screen.

1. On an Apple XDR, set the profile of your display to one of the HDR options in the OS System Display Preferences:
   - Pro Display XDR (P3-1600 nits)
   - Apple Display (P3-500 nits)
   - HDR Video (P3-ST2084) - 1000 nits

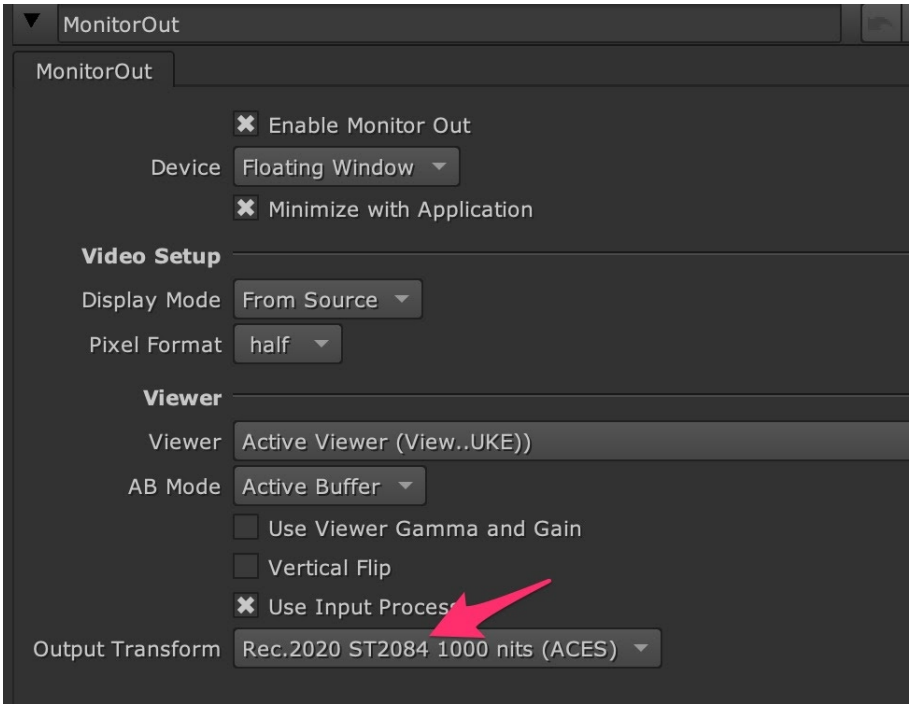
   On other monitors, enable the **High Dynamic Range** checkbox.
2. In the **Preferences**, open the **Color Management** > **HDR** section and check **Enable macOS HDR Color Profile (Display P3) (Beta)**.
3. 

   Note: Enabling this control requires you to restart the application.

   This control sets the Viewer colorspace to **Display P3**, so that the screen can display values above 1. This setting also applies the P3 colorspace to the following;
   - All Viewers
   - Node Graph
   - Dope Sheet
   - Curve editors
   - Scopes
4. In the Viewer **Properties**, set the **gl buffer depth** to **half-float** or **float** to allow HDR values to display.
5. Set the **Viewer Process** to **sRGBf** using OCIO Color Management or provide your own extended color space. This ensures that the frame buffer is not clamped at 1.



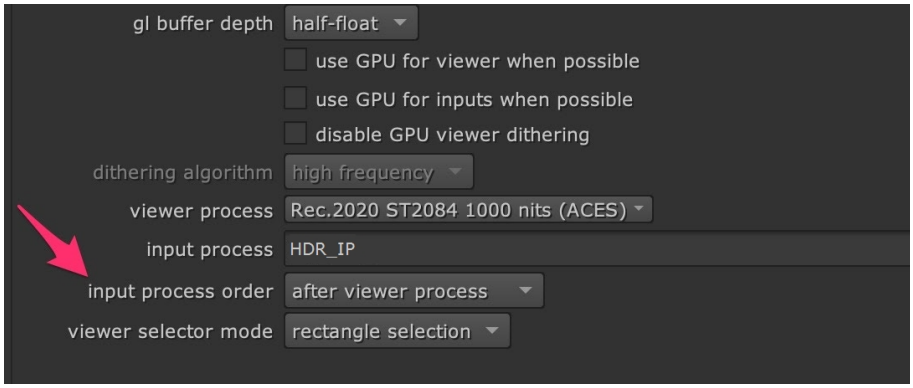
6. To use the **HDR Video (P3-ST2084)** setting on the monitor, select an appropriate ST2084 **Output Transform** in the MonitorOut **Properties** or in the Viewer.



A further color space conversion is required to allow HDR images to display correctly. An example of how this can be achieved in Nuke can be seen using a gizmo created by a customer, Nick Shaw - the gizmo is available for download here: PQ-EDR_v101.gizmo

For more information on gizmos and how to use them, see Accessing Gizmos in Nuke.

Using this gizmo as an **Input Process** and setting the **input process order** to **after viewer process** renders the correct image in the Viewer.



The gizmo also contains a slider called **Normalization (nits)**. This allows you to set the PQ nit value which is normalized to 1.0. This is useful, for example, to prevent clipping of a 1000 nit PQ signal on the 16" MacBook Pro's 500 nit display.

OCIO Improvements

This release contains the first of several OCIO updates that will be added to the Nuke family in the future. A new Preference has been added, **Project Defaults** > **Color Management** > **Prioritize OCIO Roles**, which is enabled by default to match legacy behavior.

Prioritizing OCIO Roles creates them in the main menu of cascading dropdowns, with **Colorspaces** in a sub-menu. If the checkbox is disabled, roles are demoted to a submenu called **Roles**.

- BUG ID 417279 - A new **Allow OCIO Roles in Colorspace Knobs** control allows you to enable and disable OCIO roles in all colorspace controls.

> ⚠ **Warning:** If you plan to disable roles using this control, restart the application before changing any other Color Management settings. Disabling this control may cause knob errors when loading scripts created in Nuke 12 builds.

OCIO Environment Variable (Nuke and Nuke Studio)

An environment variable has been added to control the state of the OCIO Roles preference. This allows you to set up the desired behavior at an environment level for all artists, rather than setting it individually and risk users having different settings. If the environment variable is set, the OCIO Roles preference is disabled, so individual artists cannot change the setting. The variable has three settings:

- NUKE_OCIO_ROLES=0 Roles are hidden

- NUKE_OCIO_ROLES=1 Roles are prioritised (Current behavior of 12.2)
- NUKE_OCIO_ROLES=2 Roles are de-prioritised

Sync Review Improvements - Annotations Roundtrip

For Nuke 13.0 we have expanded Sync Review to include all the actions needed on a Review Session, such as changes in the timeline, importing new footage, or creating new soft effects. Sync Review for NukeStudio, Hiero, and HieroPlayer enable teams to collaborate and continue working together towards a shared vision of the final image.

Previously, only the playback controls, versioning system and annotations were updated during the session, and editorial changes required a manual push to update other participants' sessions. In Nuke 13.0, most actions available in the timeline, Viewer, and Project bin are synced automatically during the session including:

- Changes in the Viewer: Layer and channel selection, the TC/TF frame slider option, Viewer guides, and zoom in and out.
- Changes in the Timeline: Creating new tracks, renaming shots, adding or deleting soft effects, retimes and transitions, changes to soft effects parameters, lock status of tracks, trimming, and moving shots on the timeline.
- Changes in the **Project** bin: Creating, renaming, moving or deleting project items, importing files, creating new sequences, tags, and bins.

Annotations in HieroPlayer

HieroPlayer now includes the same annotations capabilities as Nuke Studio and Hiero, providing greater creative control during review sessions.

Machine Learning Tools (AIR)

Nuke 13.0 introduces a new suite of machine learning tools designed to assist artists with some of the heavy-lifting in VFX work. These tools require an NVIDIA GPU with a minimum compute capability of 3.0 to enable GPU acceleration.

CopyCat

Enables you to copy sequence-specific effects, such as garbage matting, beauty repairs, or deblurring, from a small number of frames in a sequence and then train a network to replicate this effect on the full sequence. Connect a selection of the original frames to the **Input** along with what you want them to look

like in the **Ground Truth** and click **Start Training**. The plug-in outputs a trained network ready for the Inference node to apply your effect.

Note: CopyCat requires a NukeX or Nuke Studio license.

Inference

Runs the neural networks produced by the CopyCat node. Once CopyCat has successfully trained a network, its weights are saved in a checkpoint **.cat** file, which is then referenced by the Inference node to apply the effect to the remainder of the sequence, or even a different sequence altogether.

Note: Inference requires a NukeX or Nuke Studio license to select the **.cat** file used, but can be processed using a Nuke Render license (nuke_r).

Deblur

The Deblur node attempts to remove motion blur from the input image using a pre-trained machine learning network.

Upscale

The Upscale node increases the input format by a factor of two using a pre-trained machine learning network. Upscale also includes a **Tile Size** control that allows you to process the image in smaller chunks to cut down the use of OS resources.

AIR on Ampere GPUs

In order to run the AIR plug-ins on Ampere GPUs, you must set a global environment variable CUDA_CACHE_MAXSIZE to a value between 2147483648 (2 GB) and 4294967296 (4 GB). This is because the AIR plug-ins need to compile CUDA kernels in order to run on this GPU. This process is only necessary once and should take about half an hour.

The compiled kernels are stored in the CUDA cache and require about 2 GB of space, so the environment variable CUDA_CACHE_MAXSIZE must be set accordingly.

Note: We recommend setting the CUDA_CACHE_MAXSIZE variable globally where possible, otherwise running Nuke under a user account where it is not set may invalidate the cache.

The cache is stored in different default locations by OS:

Windows
%APPDATA%/NVIDIA/ComputeCache

Linux
~/nv/ComputeCache

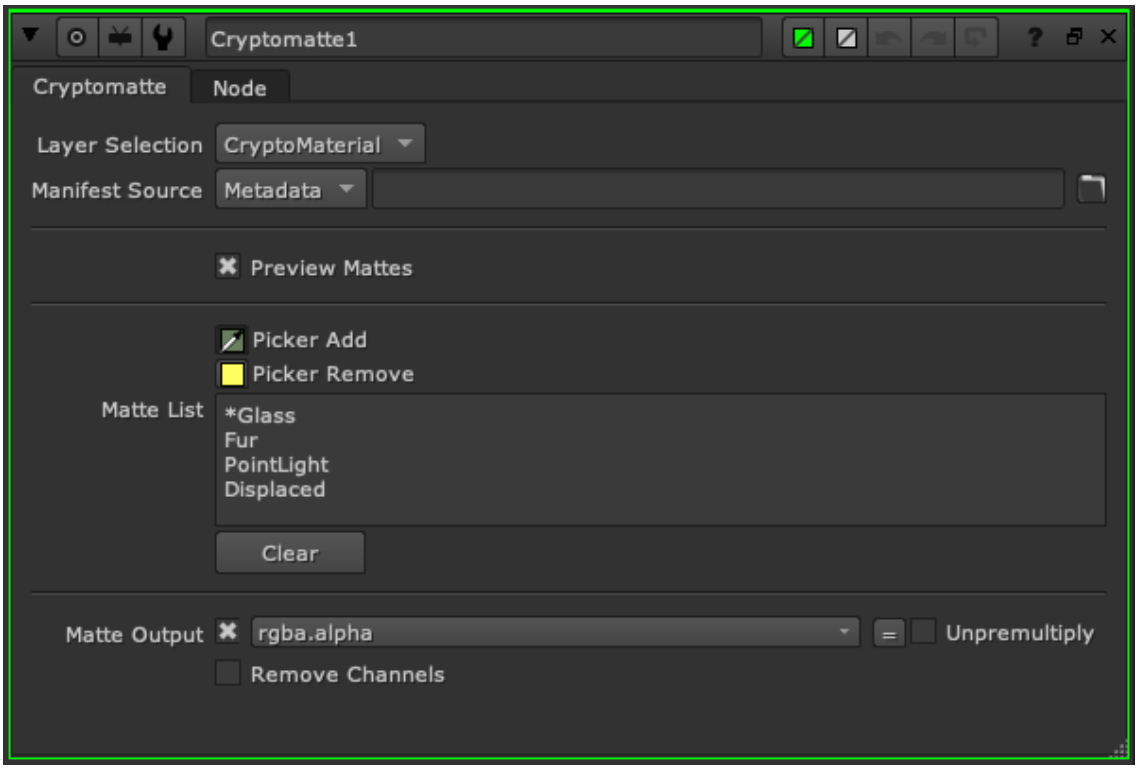
The location can be changed by setting the environment variable CUDA_CACHE_PATH.

Cryptomatte

This release introduces a native Cryptomatte plug-in within Nuke. This plug-in will be available as an example in the NDK.

New features in this release include:

- Simplified and updated UI for the **Properties** panel.
- A vertical matte list, making selections more easily readable.
- A **Manifest Source** control, which allows the manifest to be read either as a separate sidecar file or from metadata embedded in the input image.



Known Issues with Cryptomatte:

• The Encryptomatte node is not supported.

File I/O SDK Updates

ARRIRAW SDK 6.2.3.0

The sharpening range from -5 to +5 has been extended to +35 and offers a stronger resharpening option. This feature is intended for multi-camera productions.

• Fixed symbols that were not exported in Linux and Mac builds.

• Fixed bug in processing ALEXA Mini footage with input container format 16:9.

• Fixed usage of cuda function when rendermode isn't GpuCuda.

• Fixed possible OpenCL crash in clEnqueueReleaseGLObjects.

Avid DNxCodec 2.6.2.31

Update to the latest SDK for DNxHR and DNxHD (**.mov** and **.mxf**) reading and writing.

• BUG ID 357576 - DNxHD: Using AMD CPUs to read and write DNxHD **.mov** files caused Nuke to crash.

• BUG ID 426404 - DNxHR: Reading alpha channels in DNxHR **.mov** files is now supported.

- BUG ID 466457 - DNxHR: Reading and writing alpha channels in DNxHR **.mxf** files is now supported.

VFX Reference Platform 2020

The VFX Reference Platform is a set of tool and library versions to be used as a common target platform for building software for the VFX industry. See https://www.vfxplatform.com/ for more information.

In addition to upgrading these core libraries, Nuke uses numerous third-party libraries, many of which were also upgraded. This is a broad and significant upgrade, that sees Nuke using the latest versions of technologies like Python and OpenEXR.

Library Upgrades

- Boost → 1.70.0
- FBX → 2020.1.1
- Intel MKL → 2019.5.281
- Intel TBB → 2019 Update 6
- OpenEXR → 2.4.2
- OpenSubDiv → 3.4.3
- Ptex → 2.3.2
- Python → 3.7.7
- QT Python (Pyside) → 5.12.6 (with Patch)

Feature Enhancements

- BUG ID 158422/199269 - FrameHold: A new **Set to Current Frame** button has been added to the **Properties** panel.
- BUG ID 421243 - Nuke's **Preferences** > **Project Defaults** > **Color Mangement** options are now the same as Nuke Studio's, allowing you to set separate **Default Color Transforms** on a file type basis.
- BUG ID 453754 - Particles: The deprecated **particleT** attribute has been removed, resulting in a minor performance improvement. **particleT** was used to determine the age of the particle, but this information can be calculated from the **particleStartTime** attribute and the current time.
- BUG ID 457334 - CaraVR: The C_GenerateMap gizmo has been replaced by a plug-in for Nuke 13.0. This work includes the addition of a new **Format** control, which allows you to set the format of output ppass or stmaps when the node is not connected to a parent node. When the **Source** input is connected to any other node, the format is obtained from the parent node and the **Format** control is disabled.

Bug Fixes

- BUG ID 137121 - Nuke crashed on start up if the **disk cache** location set in the **Preferences** was no longer available.
- BUG ID 328844 - OFX: Inserting a CornerPin node after an OFX plug-in, such as Mocha Pro, occasionally caused Nuke to crash.
- BUG ID 333902 - Monitor Out: The Viewer gain and gamma controls did not affect the monitor display when Viewer GPU acceleration was enabled.
- BUG ID 349441 - Monitor Out: Switching from Kona3G card Monitor Out to floating window output caused Nuke to crash.
- BUG ID 379806 - Python: The Hiero example file **spreadsheet_csv_export.py** did not work as expected.
- BUG ID 401016 - Python: Calling **Gizmo.filename()** returned the value of a gizmo's **file** knob, rather than the gizmo's location on disk.
- BUG ID 401881 - Windows only: Custom shortcuts using **Shift** and keypad numbers could not be initialized.
- BUG ID 412043 - Windows only: Case mismatches in file paths were not handled as expected.
- BUG ID 419327 - DNxHD and DNxHR **.mov** files did not display different codec information in the Read node's **Properties** panel.
- BUG ID 431846 - Shuffle2: Expression linking **Input** or **Output Layer** controls to a **channel** control in another node caused Nuke to crash.
- BUG ID 431886 - Dragging files into the **Project** bin occasionally caused Nuke Studio and Hiero to become unresponsive.
- BUG ID 432704 - Shuffle2: Channels and layers that were not available were occasionally displayed in the **Properties** panel.
- BUG ID 433153 - UI: The overlay and guides menu was occasionally disabled if it included custom guides.
- BUG ID 438360 - Documentation: The NDK documentation for **Setting up Projects and Compilers** was out of date.
- BUG ID 441045 - Read/Write: DNxHR **.mov** files Imported into Nuke were identified incorrectly as DNxHD.
- BUG ID 447701 - macOS only: 3D Viewer rotation handles were drawn incorrectly on machines with certain GPUs.
- BUG ID 447820 - Deep: Viewing a DeepMerge node with **deep.front** and **deep.back** set to **inf** values caused Nuke to crash.
- BUG ID 448363 - BlinkScript: Creating unsigned variables using **uint** displayed an error when GPU acceleration was enabled.
- BUG ID 457741 - User Knobs: Adding multiple Group knobs in the **Project Settings** properties panel only created one endGroup knob.

- BUG ID 459491 - Read/Write: Reading DNx **.mov** files drew the Read node's **Properties** panel incorrectly.
- BUG ID 461787 - UI: The toolbar at the top of Nuke's Viewer was slightly larger in 3D mode than 2D mode.
- BUG ID 461854 - Read/Write: Reading legacy mov32 files using the mov64Reader displayed a persistent error in the timeline Viewer.
- BUG ID 463633 - Colorspace: Exporting a script with various output colorspaces displayed an **Invalid LUT selected** error.
- BUG ID 464353 - Median nodes did not produce the correct result at the edges of certain images.
- BUG ID 464372 - Python: Nuke could not load movWriter from an external version of Python.
- BUG ID 464455 - Python: The **foundrySG_Example.py** example and documentation did not work as expected.
- BUG ID 464508 - Transform: Adjusting the **scale** control in a Transform node's **Properties** panel with **show overscan** active in the Viewer settings caused Nuke to crash.
- BUG ID 465012 - Python: **FnFilenameField.py** was missing an import of **QtCore.QEvent** and displayed errors in the console.
- BUG ID 465045 - Read/Write: The info bar overlay in Nuke Studio's Viewer displayed a one frame offset for **.mov** and **.mxf** files compared to the source timecode.
- BUG ID 465303 - Deep: Scripts with DeepRecolor nodes upstream of DeepToImage nodes caused Nuke to crash.
- BUG ID 465375 - Tags: Selecting shots with tags on the timeline was slow compared to shots without tags.
- BUG ID 467078 - Python: Renaming tags using the **setName()** function did not work as expected.
- BUG ID 468211 - UI: Dragging widgets between panes occasionally named tabs incorrectly.

New Known Issues Specific to Nuke 13.0

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

- BUG ID 470149 - CopyCat: Training cannot be resumed from the command line. For example, using **copyCatNode.knob('resumeTraining').execute()** displays an optimizer error.
  As a workaround, open the script in GUI mode and click **Resume Training**.
- BUG ID 470014 - macOS only: Canceling the CopyCat training progress bar during the **validating inputs** phase causes Nuke to display an error message.
- BUG ID 470012 - CopyCat: Canceling the training progress bar during the **caching inputs** phase causes Nuke to crash.
- BUG ID 470001 - CopyCat: The **Batch Size** tooltip should state that the size must be *less than or equal to* the number of image pairs in the data set.

- BUG ID 469655 - Monitor Out: The Viewer overlays for safe zones and guides are not reproduced correctly on the monitor.
- BUG ID 469593 - Monitor Out: Opening a floating **Monitor Out** pane using the **Window** menu in Nuke Studio and Hiero makes the pane hard to dock.
- BUG ID 469578 - Monitor Out: Changing resolution during playback occasionally causes Nuke to crash.
- BUG ID 469559 - OCIO Roles: The default **Monitor Out** LUT in the **Project Settings** is incorrect from ACES 1.0.3 and 1.1 configurations.
- BUG ID 469506 - OCIO Roles: Changing the config file with OCIO Roles disabled displays errors in the **Project Settings**.
- BUG ID 469401 - Cryptomatte: Reopening scripts with matte names including "," saved with the gizmo are not correctly interpreted by the plug-in.
- BUG ID 469262 - Monitor Out: Nuke 13.0 does not currently support different Monitor Out devices per Viewer node.
- BUG ID 469132 - USD: Enabling and disabling read from file in Light nodes occasionally draws the **USD Options** incorrectly.
  As a workaround, close and reopen the **Properties** panel.
- BUG ID 468999 - AIR: Using the Deblur, Inference, or Upscale nodes on large images occasionally causes Nuke to crash.
- BUG ID 468980 - Monitor Out: Switching between files with different aspect ratios outputs a mixture of the images in the floating window.
- BUG ID 468665 - macOS only: Zooming or framing using the **F** keyboard shortcut in the timeline Viewer occasionally displays a blank white screen.
- BUG ID 467984 - USD: The **File** tab does not always show the full **Path** to USD Camera objects.
- BUG ID 467270 - USD: The **Scenegraph** does not currently support multiple item selection.
- BUG ID 467265 - USD: The highlight on selected items in the import dialog occasionally persists after clicking away from the item.
- BUG ID 467257 - USD: Pressing **Spacebar** in the **Scenegraph** disables selected items and opens the panel in full-screen mode at the same time.
- BUG ID 467229 - USD: The **Scenegraph** tab's **Type** column does not always resize correctly.
- BUG ID 467209 - USD: Reading **.usd** files using the **R** keyboard shortcut doesn't display the file name at the top of the **Scenegraph** pane.
- BUG ID 467198 - CopyCat: Clicking the refresh button above the graph does not update the **Runs** table.
- BUG ID 467195 - macOS only: Switching desktop while an Upscale node is processing displays an **OMP: Warning #190: Forking a process while a parallel region is active is potentially unsafe** error message repeatedly on the command line.
- BUG ID 466734 - CopyCat: Stopping training on the CPU and then resuming on the GPU, and the opposite GPU to CPU, does not work as expected.

- BUG ID 465112 - Hydra View: Moving the camera or dragging a selection box over the Viewer increases the playback speed of animated USD scenes.
- BUG ID 464964 - Installation: Installing Nuke 13.0 takes significantly longer than Nuke 12.2 builds, particularly on Windows OS.
- BUG ID 464442 - Cryptomatte: Clicking the **Clear** button under the **Matte List** cannot be undone as expected.
- BUG ID 463253 - Hydra Viewer: Loading a USD scene and setting the **display** control to **textured** displays solid color incorrectly.
- BUG ID 462011 - macOS only: Certain machines running Big Sur display **QWidgetWindow()** command line errors on start up.
- BUG ID 461710 - USD: Imported cameras are always set to the default camera in the 3D Viewer.
- BUG ID 459921 - Hydra Viewer: Disabling **Materials** in the Hydra Viewer **Properties** panel causes the grid to display in gray.
- BUG ID 459512 - CopyCat: The **Properties** panel does not always update to reflect changes to upstream channels.
  As a workaround, close and reopen the **Properties** panel.
- BUG ID 458511 - CopyCat: The **visibility** control in the **Graphs** tab is reset by the next update if it is toggled while training is running.
- BUG ID 458509 - CopyCat: Enabling or disabling **Log Scale** in the **Graphs** tab causes graph updates to lag.
- BUG ID 458508 - CopyCat: Training does not currently stop or display an error if a NaN value is encountered.
- BUG ID 457886 - ABC: Checking read from file does not disable the Axis controls as expected.
  As a workaround, click into another tab in the **Properties** panel and then back to the **Axis** tab.
- BUG ID 457608 - Monitor Out: Some items in the overflow menu for the **Monitor Out** strip do not work as expected.
- BUG ID 456513 - Qt: Launching Nuke from the command line displays several **QPainter** error messages.
- BUG ID 448430 - Monitor Out: Enabling **Minimize with Application** in the MonitorOut **Properties** does not minimize the floating window as expected.
- BUG ID 445909 - AJA: The **Use Video Legal Range** control does not work as expected in Nuke's monitor out.
- BUG ID 445560 - macOS only: Switching to the **Monitor Out** workspace for XDR monitor out causes Nuke to crash.
- BUG ID 443270 - Monitor Out: The monitor UI re-draws twice if **Monitor Out** is set as the startup workspace.
- BUG ID 441488/440212 - Loading certain scripts in low-RAM environments or limiting the amount of RAM with the **-c** command line option causes Nuke to crash or become unresponsive.

- BUG ID 427838 - Windows only: Moving a floating monitor out window to a 4K monitor causes scaling to behave unexpectedly.

Developer Notes

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	12.0v1 to 12.0v2	API and ABI		
Point	12.0v1 to 12.1v1	API	●	
Major	12.0v1 to 13.0v1	-	●	●

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")
```