Release Notes for Nuke and Hiero 14.0v3

Release Date

23 February 2023

Qualified Operating Systems

- macOS Big Sur (11.x) or macOS Monterey (12.x). Nuke is currently supported under Rosetta emulation on Apple's new Apple Silicon hardware and M1 chips. Native support is not currently available and Foundry is planning to support the Nuke family natively on Apple's M1 and M2 hardware at a later date.

Article: For more information on Foundry products and supported macOS versions, see Foundry Knowledge Base article Q100592.

- Windows 10 (64-bit) and Windows 11 (64-bit)
- CentOS 7.6 (64-bit), or later

Note: The currently supported version of VFX Reference Platform includes library versions that are only compatible with CentOS 7.6, 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 3.5 (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 11.1, or above. On Windows and Linux, CUDA graphics drivers are bundled with the regular drivers for your NVIDIA GPU. Driver versions 456.81 (Windows) and 455.32 (Linux), or above are required. See https://www.nvidia.com/Download/Find.aspx for more information on compatible drivers.

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 W6600
- AMD Radeon PRO W6800
- AMD Radeon Pro W5700
- 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

- ID 505463 - Non-Commercial: BlinkScript is now supported in Nuke Non-Commercial.
- ID 523882 - Read/Write: Support for the ALEXA Mini LF **.mxf** ProRes codec has been improved.

Bug Fixes

- ID 154613 - Read/Write: Sony **.mxf** HDR files with RGB values >1 were clamped at 1 in the timeline Viewer.

- ID 278964 - Monitor Out: 8-bit and 10-bit output was slightly below 100% of the legal ranges with video safe level activated.
- ID 475398 - Monitor Out: Blackmagic Design cards output incorrect 10-bit values.
- ID 493421 - OCIODisplay: Copying an OCIODisplay node or effect between the timeline and comp environments did not retain gamma and gain values.
- ID 500103 - Stereo: Rendering stereo images with the frame server enabled or disabled or from the terminal produced different results from RayRender.
- ID 504611 - Stereo: Entering **%V** in a Write node's **file** control stopped metadata passing through when **read file** was enabled.
- ID 507113 - Python: Adding a custom knob and then clicking the edit knobs button in the **Properties** panel caused Nuke to crash.
- ID 509491 - Viewing a ScanlineRender node downstream of an EdgeExtend node caused Nuke to crash.
- ID 510025 - Python: Calling **nuke.layers()** returned the layers incorrectly.
- ID 511641 - Viewing a Transform node downstream of an InPaint node caused Nuke to crash.
- ID 513148 - UI: The last three characters in the Versioning popup on the timeline were hidden behind a scrollbar.
- ID 513480 - Gizmos: Updating certain gizmos with new knobs caused Nuke to crash.
- ID 519235 - Frame Server: Closing Nuke displayed an error on the command line.
- ID 520355 - OCIODisplay: The **gain** and **gamma** values could not be undone, redone, or reset in soft effects.
- ID 522873 - Read/Write: Connecting a Viewer to a Read node that referenced an ARRI Alexa 35 file caused Nuke to crash if the thumbnail was still rendering.
- ID 523609 - Read/Write: Certain **.mxf** files created using FFmpeg displayed at the wrong resolution.
- ID 525647 - Timeline Editing: Exporting a sequence displayed unexpected command line messages.
- ID 525655 - Read/Write: Exporting **.mov** files as **ProRes Mov 4444** displayed a **Warning: Could not find value "<colorspace>" for "monitorLut". It will be appended to the menu list** error message.
- ID 527773 - Cryptomatte: Viewing a Cryptomatte node connected to an **.exr** with certain metadata upstream caused Nuke to crash.
- ID 527947 - BlinkScript: Certain kernels failed to compile on NVIDIA RTX 4000 series GPUs.
- ID 528062 - OCIO: Soft Effects that rely on a specific config loaded the **Preferences** config instead of the **Project Settings** config in Nuke Studio/Hiero.
- ID 528302 - OCIO: Selecting the v2.1 Studio ACES config in the **Preferences** and then closing and reopening Nuke displayed a **Warning: Could not find value "sRGB - Display/ACES 1.0 - SDR Video" for "monitorLut"** error message.
- ID 528356 - OCIO: The **Preferences** > **Project Defaults** > **Color Management** settings reverted unexpectedly to **OCIO** > **custom**.
- ID 528596 - Python: Calling **nuke.clone()** in terminal mode caused Nuke to crash.

- ID 532603 - Colorspace: The **ARRILogC4** encoding curve was incorrect.
- ID 533394 - Read/Write: Reading Alexa 35 files and using the OpenVPCal toolset caused Nuke to crash.
- ID 533800 - macOS only: Creating a Keylight node caused Nuke to crash.
- ID 534212 - 3D Arch: **libnuke** incorrectly linked against USD libraries.
- ID 534550 - Nuke Indie: Creating GridWarp nodes did not work as expected.
- ID 534562 - Nuke Indie: Creating Reformat nodes did not work as expected.

New Known Issues Specific to Nuke 14.0

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

- ID 534720 - Read/Write: ARRI RAW Alexa 35 timecode metadata is off by -1 frame when read in Nuke Studio.
- ID 534623 - Read/Write: Nuke Studio and Hiero do not always interpret the FPS of ARRI RAW Alexa 35 footage correctly.
  As a workaround, change the frame rate manually by right-clicking on the clip in the **Project** bin and selecting **Set Frame Rate**.
- ID 532211 - Windows only: **QEventDispatcher** messages are displayed in the command prompt, but they can be ignored.
- ID 532078 - Bokeh: Attaching an image to the **Kernel** input does not work as expected in Viewer downrez and proxy modes.
- ID 526530 - CatFileCreator: Converted **.cat** files from Nuke 14 cannot be used in earlier versions of Nuke.
  As a workaround, convert the **.cat** file in the version of Nuke you intend to use, such as Nuke 13.2v5.
- ID 526041 - 3D Arch: Payload overrides in the Scene Graph do not work as expected for nested payloads.
- ID 525872 - 3D Arch: The GeoDrawMode node's **Draw Color** can not be animated as expected.
- ID 525863 - 3D Arch: DirectLight has much brighter intensity when rendered through ScanlineRender than in the 3D Viewer.
- ID 525819 - 3D Arch: **Display Color** animation in Nuke geometry nodes, such as GeoCube, is not displayed as expected when rendered through ScanlineRender.
- ID 525817 - 3D Arch: **Display Opacity** changes in Nuke geometry nodes, such as GeoCube, are not displayed as expected when rendered through ScanlineRender.
- ID 525816 - 3D Arch: **Display Opacity** changes are not displayed as expected when blended against the background.
- ID 525714 - 3D Arch: Selections in the 3D Viewer are added to selections from the **Scene Graph** tab when scene graph locations are dropped in a node's **Mask** control.
- ID 525575 - CameraTracker: CameraTrackerPointCloud nodes incorrectly display point data in the 2D output from ScanlineRender.

- ID 524963 - 3D Arch: The Scene Graph background pattern changes when scrolling through objects in the list.
- ID 524835 - OCIONamedTransform: The Viewer error when no transform is selected contains a **[** (square bracket).
- ID 524626 - 3D Arch: Hit detection in the 3D Viewer is slower than in previous versions of Nuke, which causes delayed response times.
- ID 524274 - Read/Write: Color transforms are not applied correctly to ARRI Alexa 35 footage after changing the **arri_colorspace** knob.
- ID 522999 - 3D Arch: CameraTrackerPointCloud displays as a red node, rather than green to indicate that it is a legacy 3D system node.
- ID 521937 - 3D Arch: Changing the active state of materials in the scene graph disables the material for the current Viewer node.
  As a workaround, create a new Viewer node and connect it to the scene.
- ID 521907 - 3D Arch: Points in point clouds generated from CameraTracker data default to a size too large for the Viewer.
- ID 521508 - 3D Arch: The bounding box does not always follow its geometry downstream of a GeoMerge node.
- ID 521133 - 3D Arch: Rotating geometry using the transform handles in the Viewer does not follow pointer movement as expected.
- ID 520821 - 3D Arch: The CameraTracker point cloud **Point Size** control does not scale as expected at large size values.
- ID 520716 - 3D Arch: The **GeoImport** > **Display Materials** checkbox does not always toggle materials on and off.
- ID 520622 - 3D Arch: The **Draw Mode** applied by GeoDrawMode nodes is not set consistently.
- ID 520296 - 3D Arch: Creating a GeoSphere or GeoCylinder node in the Node Graph labels the tab in the **Properties** panel incorrectly.
- ID 520282/519482 - UI: Moving the **Licensing** dialog around causes the window to jitter.
- ID 519987 - 3D Arch: Creating nodes Pythonically does not always create the expected node connections.
- ID 519068 - Windows Installer: Specifying a different install directory does not automatically create a Nuke container directory for the necessary Nuke files.
  As a workaround, manually specify a container directory during install.
- ID 518874 - 3D Arch: Double-clicking prims in the Viewer does not open the associated **Properties** panel as expected.
- ID 518795 - 3D Arch: GeoCard always writes the **control_point** knob value in the Nuke script, even if it's set to the default value.
- ID 518654 - 3D Arch: Node names are occasionally drawn incorrectly at different Node Graph zoom levels.
- ID 518593 - 3D Arch: Setting the **Mask** to a prim that is not the node above a GeoDrawMode ignores the selected **Draw Mode**.

- ID 518581 - UnrealReader: The CompareMetaData node reads incorrect frame metadata from UnrealReader Write section rendered EXRs.
- ID 517980 - Windows Installer: The installer screen occasionally displays twice during installation.
- ID 517657 - 3d Arch: Instanceable Reference and Point Instanced geometry is un-selectable in the Viewer.
- ID 516166 - 3D Arch: Pressing **Enter** to cycle through searched items in the Scene Graph allows items to be cycled through even if a contributing node is removed upstream.
- ID 516052 - 3D Arch: Projected textures in some customer scripts are placed incorrectly by ScanlineRender2.
- ID 515379 - 3D Arch: The GeoSphere default **Height** value is incorrect.
- ID 515370 - 3D Arch: Clicking **Invert Selection** in the GeoPrune properties does not update mask selections correctly in the Viewer.
- ID 515355 - 3D Arch: Scaling in **World** space after rotation skews the transform and scale handles incorrectly.
- ID 515353 - 3D Arch: Scaling in **World** space after rotation causes the rotation handles to wobble.
- ID 514854 - 3D Arch: Scale handles in **World** space don't work as expected if the pivot point of geometry is rotated.
- ID 514693 - 3D Arch: Handle rotations at large scale can become inconsistent and unstable.
- ID 514669 - 3D Arch: The Z-axis handle is not working in the Viewer **Screen** space.
- ID 514631 - 3D Arch: The match position menu (snap menu) doesn't work as expected in the new 3D system.
- ID 513943 - 3D Arch: The **Localization** controls are missing from GeoImport's node **Properties**.
- ID 513286 - 3D Arch: Vertex selection occasionally discards selected points.
- ID 513142 - 3D Arch: Vertex grouping does not grouping all selected vertices in PointCloudGenerator point clouds.
- ID 511940 - 3D Arch: Prims with no **Kind** assigned are ignored by the GeoDrawMode node.
- ID 511765 - 3D Transform Handles: Scaling a camera on a single axis does not always work as expected.
- ID 511107 - 3D Arch: Exclusion does not work as expected in the GeoCollection node.
- ID 510783 - 3D Arch: Small **u_extent** and **v_extent** values in GeoSphere/GeoRevolve(Sphere) cause textures to disappear in the Viewer.
- ID 505862 - 3D Pivot Point: Rotation stabilization doesn't work as expected in XYZ and ZYX rotation order mode.

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	13.2v1 to 13.2v2	API and ABI		
Point	13.1v1 to 13.2v1	API	●	
Major	13.0v1 to 14.0v1	-	●	●

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 13 and Nuke 14, the Axis node **Class()** changed from Axis3 to Axis4. In the **toolbars.py** file for the two releases, the entries for the Axis node appear as follows:

```
m3Dclassic.addCommand("Axis", "nuke.createNode(\"Axis3\")", icon="Axis.png",
tag=MenuItemTag.Classic, node="Axis3", tagTarget=MenuItemTagTargetFlag.TabMenu)

m3D.addCommand("Axis", "nuke.createNode(\"Axis4\")", icon="Axis_3D.png",
tag=MenuItemTag.Beta, node="Axis4")
```

Release Notes for Nuke and Hiero 14.0v2

Release Date

19 January 2023

Qualified Operating Systems

- macOS Big Sur (11.x) or macOS Monterey (12.x). Nuke is currently supported under Rosetta emulation on Apple's new Apple Silicon hardware and M1 chips. Native support is not currently available and Foundry is planning to support the Nuke family natively on Apple's M1 and M2 hardware at a later date.

Article: For more information on Foundry products and supported macOS versions, see Foundry Knowledge Base article Q100592.

- Windows 10 (64-bit) and Windows 11 (64-bit)
- CentOS 7.6 (64-bit), or later

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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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- AMD Radeon Pro W5700
- 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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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

Simulate Physical Lens Behavior with Bokeh

Nuke 14.0v2 includes a new node, Bokeh, which is a native version of a plug-in originally developed by Peregrine Labs and acquired by Foundry in 2022. The native version of Bokeh in Nuke is backwards compatible with version 1.4.8 of the pgBokeh plug-in. Bokeh defocuses an image according to a Z depth map, Deep data, or Camera information and allows you to control where the focal plane lies so you can focus on specific elements in an image, and simulate real-world lenses. You can also control the shape of the defocus kernel using the **Kernel** input.

See the Bokeh reference documentation for more information.

Feature Enhancements

- ID 525528 - 3D Arch: UsdProcessingEngine documentation is now available through the **Help** > **Documentation** menu.

Bug Fixes

- ID 159324 - Python Documentation: The **hiero.core.nuke.launchNuke()** function was not documented correctly in the Hiero Python Developers Guide.
- ID 506934 - CopyCat: Collapsing the Preview panel in the Viewer did not redrawn it next to the contact sheet as expected.
- ID 509958 - 3D Arch: Inserting a TimeClip node between a texture node connected to a geometry **img** input and a geometry node caused the texture to flicker.
- ID 514129 - 3D Arch: Deselection in the **Vertex selection** and **Face selection** modes did not work as expected.
- ID 516157 - 3D Arch: SpotLight did not work as expected with ShapingAPI attributes.
- ID 516624 - 3D Arch: Changing the Camera **projection_mode** did not change the camera wireframe in the 3D Viewer as expected.
- ID 519331 - 3D Arch: Camera4 nodes did not always pick up animation data from scene inputs.
- ID 519664 - 3D Arch: Scaling on GeoTransform with **Prim Transform Order** set to **Append** affected the scale of the handles unexpectedly.
- ID 519980 - 3D Arch: Projected output from the ScanlineRender2 did not always match the output from the Viewer.
- ID 521379 - 3D Arch: Connecting a Camera downstream of a GeoImport node made the scene disappear in the Viewer.
- ID 521704 - Python Documentation: The Hiero Python Developers Guide Included a typo.
- ID 522833 - 3D Arch: Rendering a DirectLight through ScanlineRender did not illuminate the correct side of geometry.
- ID 522835 - 3D Arch: Rendering a PointLight through ScanlineRender did light geometry in all directions as expected.
- ID 523203 - 3D Arch: Error: Failed verification: ' primInfo ' was continually printed on the command line when transforming prims.
- ID 523484 - Python API: 3D Arch attributes with empty array values incorrectly returned **None**.
- ID 523858 - 3D Arch: The **Scene Graph** tab search function didn't always work as expected on large scenes.
- ID 524172 - 3D Arch: The 3D Viewer and ScanlineRender shader output was not always consistent.

- ID 524405 - 3D Arch: Searching in the Scene Graph for a string with a large number of results caused Nuke to become unresponsive.
- ID 524470 - 3D Arch: Connecting the output of certain ScanlineRender nodes to the Viewer caused Nuke to crash.
- ID 524723 - Linux Ubuntu distros only: Using a Wacom pen with **UI Scaling** set to 1.5 offset the pointer position incorrectly.
- ID 524877/525578 - 3D Arch: Rendering a texture with animated transforms through ScanlineRender produced a pink hue incorrectly.
- ID 524901 - 3D Arch: Using relative paths in GeoInstance knobs caused Nuke to become unresponsive.
- ID 525462 - 3D Arch: The 3D texture cache occasionally retained textures from deleted node.
- ID 525570 - 3D Arch: GeomOp cached materials were not cleared as expected when connections changed.
- ID 525586 - 3D Arch: Local Parent TRS knobs were ignored when the Viewer was locked in a camera node.
- ID 525730 - 3D Arch: The **display_color** and **display_opacity** knobs could not be animated in prim node **Properties** panels.
- ID 526012 - 3D Arch: Changing the **full size format** of ScanlineRender output using the **Project Settings** caused Nuke to crash.
- ID 526069 - OCIO: Saving a project file with the OCIO config set to a new ACES 1.3 config caused Nuke Studio and Hiero to treat the configs as custom configs, which caused load problems on other machines.
- ID 526139 - 3D Arch: ScanlineRender did not render animated materials as expected.
- ID 526170 - 3D Arch: Certain USD assets were slower to load with **Display Materials** disabled in the GeoImport controls.
- ID 526188 - 3D Arch: Drag selecting in the Viewer with **Object selection** mode active did not highlight selections as expected.
- ID 526219 - 3D Arch: Duplicating prims with GeoInstance produced multiple **Duplicate item** errors on the command line.
- ID 526473 - ARRIRAW: Changing the file path in a Read node and then saving and reloading the script displayed multiple knob errors unexpectedly.
- ID 526511 - 3D Arch: Classic Nuke 3D Light nodes had authoring enabled for Color and Intensity.
- ID 526644 - Node Graph: Pressing **Tab** in the Node Graph to search for nodes had a delayed response time.
- ID 527584 - OCIO: NamedTransform selection was failing on script loading.
- ID 527630 - Read/Write: Writing **all** channels to a multiview **.exr** did not work as expected.
- ID 528117 - 3D Arch: GeoPrune did not prune Lights as expected.
- ID 528316 - Expressions: Copy/pasting expression linked nodes in the Node Graph discarded the expression link.
- ID 528541 - ReadGeo: The **Scenegraph** tab **Load** column in the node **Properties** was empty when importing **.usd** files.

- ID 528667 - Documentation The OpenTimelineIO version listed in the third-party library list was incorrect.
- ID 531816 - 3D Arch: Null prims in imported geometry caused Nuke to crash.
- ID 531993 - AIR: AIR nodes, such as Upscale, displayed errors on the command line when CUDA wasn't installed on the machine.
- ID 532002 - Python API: Calling **OfxPropertySuiteV1::propGetInt()** for the parameter **kFnOfxImageEffectPropView** caused Nuke to crash.

New Known Issues Specific to Nuke 14.0

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

- ID 532211 - Windows only: **QEventDispatcher** messages are displayed in the command prompt, but they can be ignored.
- ID 532078 - Bokeh: Attaching an image to the **Kernel** input does not work as expected in Viewer downrez and proxy modes.
- ID 527100 - AIR: On machine running under Lovelace GPUs, a message that the kernels need caching displays on the command line despite there being no need for PTX caching.
- ID 526530 - CatFileCreator: Converted **.cat** files from Nuke 14 cannot be used in earlier versions of Nuke. As a workaround, convert the **.cat** file in the version of Nuke you intend to use, such as Nuke 13.2v5.
- ID 526245 - UnrealReader: Disabling **Advanced** > **Cinematic Quality** in the node **Properties** occasionally displays incorrect output on multiple passes.
- ID 526041 - 3D Arch: Payload overrides in the Scene Graph do not work as expected for nested payloads.
- ID 525872 - 3D Arch: The GeoDrawMode node's **Draw Color** can not be animated as expected.
- ID 525863 - 3D Arch: DirectLight has much brighter intensity when rendered through ScanlineRender than in the 3D Viewer.
- ID 525819 - 3D Arch: **Display Color** animation in Nuke geometry nodes, such as GeoCube, is not displayed as expected when rendered through ScanlineRender.
- ID 525817 - 3D Arch: **Display Opacity** changes in Nuke geometry nodes, such as GeoCube, are not displayed as expected when rendered through ScanlineRender.
- ID 525816 - 3D Arch: **Display Opacity** changes are not displayed as expected when blended against the background.
- ID 525807 - UnrealReader: The **OCIOConfigurationIsEnabled** knob name on the **Advanced** tab contains a typo.
- ID 525714 - 3D Arch: Selections in the 3D Viewer are added to selections from the **Scene Graph** tab when scene graph locations are dropped in a node's **Mask** control.
- ID 525575 - CameraTracker: CameraTrackerPointCloud nodes incorrectly display point data in the 2D output from ScanlineRender.

- ID 524835 - OCIONamedTransform: The Viewer error when no transform is selected contains a **[** (square bracket).
- ID 524626 - 3D Arch: Hit detection in the 3D Viewer is slower than in previous versions of Nuke, which causes delayed response times.
- ID 524411 - Read/Write: Reading certain ARRI Alexa 35 files displays an **arrimxf_json_deserialize** error message on the command line.
- ID 522999 - 3D Arch: CameraTrackerPointCloud displays as a red node, rather than green to indicate that it is a legacy 3D system node.
- ID 522873 - Read/Write: Connecting a Viewer to a Read node that references an ARRI Alexa 35 file causes Nuke to crash if the thumbnail is still rendering.
- ID 521937 - 3D Arch: Changing the active state of materials in the scene graph disables the material for the current Viewer node.
  As a workaround, create a new Viewer node and connect it to the scene.
- ID 521907 - 3D Arch: Points in point clouds generated from CameraTracker data default to a size too large for the Viewer.
- ID 521508 - 3D Arch: The bounding box does not always follow its geometry downstream of a GeoMerge node.
- ID 521133 - 3D Arch: Rotating geometry using the transform handles in the Viewer does not follow pointer movement as expected.
- ID 520821 - 3D Arch: The CameraTracker point cloud **Point Size** control does not scale as expected at large size values.
- ID 520716 - 3D Arch: The **GeoImport** > **Display Materials** checkbox does not always toggle materials on and off.
- ID 520622 - 3D Arch: The **Draw Mode** applied by GeoDrawMode nodes is not set consistently.
- ID 520296 - 3D Arch: Creating a GeoSphere or GeoCylinder node in the Node Graph labels the tab in the **Properties** panel incorrectly.
- ID 520282/519482 - UI: Moving the **Licensing** dialog around causes the window to jitter.
- ID 519987 - 3D Arch: Creating nodes Pythonically does not always create the expected node connections.
- ID 519068 - Windows Installer: Specifying a different install directory does not automatically create a Nuke container directory for the necessary Nuke files.
  As a workaround, manually specify a container directory during install.
- ID 518874 - 3D Arch: Double-clicking prims in the Viewer does not open the associated **Properties** panel as expected.
- ID 518795 - 3D Arch: GeoCard always writes the **control_point** knob value in the Nuke script, even if it's set to the default value.
- ID 518654 - 3D Arch: Node names are occasionally drawn incorrectly at different Node Graph zoom levels.
- ID 518593 - 3D Arch: Setting the **Mask** to a prim that is not the node above a GeoDrawMode ignores the selected **Draw Mode**.

- ID 518581 - UnrealReader: The CompareMetaData node reads incorrect frame metadata from UnrealReader Write section rendered EXRs.
- ID 517980 - Windows Installer: The installer screen occasionally displays twice during installation.
- ID 516166 - 3D Arch: Pressing **Enter** to cycle through searched items in the Scene Graph allows items to be cycled through even if a contributing node is removed upstream.
- ID 516052 - 3D Arch: Projected textures in some customer scripts are placed incorrectly by ScanlineRender2.
- ID 515379 - 3D Arch: The GeoSphere default **Height** value is incorrect.
- ID 515370 - 3D Arch: Clicking **Invert Selection** in the GeoPrune properties does not update mask selections correctly in the Viewer.
- ID 515355 - 3D Arch: Scaling in **World** space after rotation skews the transform and scale handles incorrectly.
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- ID 514631 - 3D Arch: The match position menu (snap menu) doesn't work as expected in the new 3D system.
- ID 513943 - 3D Arch: The **Localization** controls are missing from GeoImport's node **Properties**.
- ID 513286 - 3D Arch: Vertex selection occasionally discards selected points.
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As an example, between Nuke 13 and Nuke 14, the Axis node **Class()** changed from Axis3 to Axis4. In the **toolbars.py** file for the two releases, the entries for the Axis node appear as follows:

```
m3Dclassic.addCommand("Axis", "nuke.createNode(\"Axis3\")", icon="Axis.png",
tag=MenuItemTag.Classic, node="Axis3", tagTarget=MenuItemTagTargetFlag.TabMenu)

m3D.addCommand("Axis", "nuke.createNode(\"Axis4\")", icon="Axis_3D.png",
tag=MenuItemTag.Beta, node="Axis4")
```

Release Notes for Nuke and Hiero 14.0v1

Release Date

06 December 2022

Qualified Operating Systems

- macOS Big Sur (11.x) or macOS Monterey (12.x). Nuke is currently supported under Rosetta emulation on Apple's new Apple Silicon hardware and M1 chips. Native support is not currently available and Foundry is planning to support the Nuke family natively on Apple's M1 and M2 hardware at a later date.

Article: For more information on Foundry products and supported macOS versions, see Foundry Knowledge Base article Q100592.

- Windows 10 (64-bit) and Windows 11 (64-bit)
- CentOS 7.6 (64-bit), or later

Note: The currently supported version of VFX Reference Platform includes library versions that are only compatible with CentOS 7.6, 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 3.5 (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 11.1, or above. On Windows and Linux, CUDA graphics drivers are bundled with the regular drivers for your NVIDIA GPU. Driver versions 456.81 (Windows) and 455.32 (Linux), or above are required. See https://www.nvidia.com/Download/Find.aspx for more information on compatible drivers.

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 W6600
- AMD Radeon PRO W6800
- AMD Radeon Pro W5700
- 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

New USD-Based 3D Architecture (Beta)

We're completely revamping Nuke's 3D system introducing a new beta USD-based system to allow artists to efficiently work with modern 3D scenes at scale.

The new USD architecture brings Nuke's 3D in line with modern standards and introduces a dedicated scene graph, new path and masking workflows, over 40 nodes, and new USD-based workflows. We'll be continuing to develop the new 3D system across the Nuke 14 series and, to ensure artists don't lose access to any workflows they are used to, the new system will work in parallel with the classic 3D system.

See New 3D System Nodes for more information on the nodes available in the new 3D system.

New 3D System: Scene Graph

With the new 3D system comes the introduction of a dedicated scene graph that allows users to easily view, navigate and manage large, complex 3D scenes. Artists will get a clear, visual overview of a scene and experience the intuitive drag-and-drop functionality to new path masks in nodes. This advanced scene graph is consistent with modern 3D workflows and ensures every primitive inside the new system will have a unique ID path that will exist in a scene graph hierarchy.

See Manage Your Scene with the Scene Graph for more information.

New 3D System: Paths and Masking

We're giving artists greater control with new path and masking workflows. All nodes that create geometry will have a new path knob that enables users to determine where the geometry they're creating lives in the scene hierarchy and how it's named. Similarly, any nodes that modify geometry will have a new mask knob that allows artists to specify which part of the 3D scene that node should affect. These knobs are based on a simplified CEL expression language that allows the use of tokens and expressions. For artists, this means that the knobs can default to intuitive workflows with minimal input, but also allow for complex selections if you want to go deeper.

See Paths and Masks Control the Scene for more information.

New 3D System: Lights and Materials

Introducing new material and light nodes in Nuke 14.0. With support for USD material networks, a new PreviewSurface material node allows for USD-based specular or metallic workflows and materials can display immediately in the viewer when working with USD files with their own looks. This gives artists a way to quickly see their assets in a more accurate representation inside Nuke's 3D viewer. New USD lights mean that when importing lights from other USD-based applications, you will have the exact same lights inside Nuke and when combined with Hydra and potential future support of additional renderers in Nuke's viewport, this means artists could see a more consistent image across applications going forward.

See Light Your Scene and Assign Textures to Objects for more information.

New 3D System: Feedback Forum

So that you can help continue to shape the new 3D system across the 14 series, we are introducing a dedicated community forum to enable discussions and feedback with the 3D team. We're interested in

hearing from you in regards to all areas, from existing nodes and workflow improvements, new node or workflow suggestions, feedback on performance, the API, or new features such as the scene graph or path and masking workflows.

Join us to help develop the future of 3D compositing workflows in Nuke:
https://community.foundry.com/discuss/nuke3d

UnrealReader

In Nuke 14.0, UnrealReader features support for Unreal Custom Render Passes allowing for effects like non-photorealistic rendering, OpenColorIO to allow matching of color spaces between Nuke and Unreal, easier picking of Sequences, and access to Unreal Sequence metadata to retrieve info on objects like lights.

See Visualize Unreal Scenes in NukeX and Nuke Indie for more information.

CopyCat Performance Improvements

Nuke 14.0 ships with UI and performance improvements to Nuke's AIR tools. These updates include a new checkpoint targeting human matting that has been added to CopyCat, speeding up training by up to ten times. We've also upgraded to PyTorch 1.12.1 which widens the range of support for models converted to **.cat** via the CatFileCreator node and sped up CopyCat training by 20% on NVIDIA Ampere GPUs.

See Train Neural Networks to Replicate Effects Using Machine Learning for more information.

Introducing the Cattery

The Cattery is a library of free third-party, open source machine learning models converted to **.cat** files to run natively in Nuke. Cattery aims to bridge the gap between academia and production, giving everyone access to a range of open-source ML models that all run in Nuke. We'll be giving you access to state-of-the-art models addressing segmentation, depth estimation, optical flow, upscaling, denoising, and style transfer, with plans to expand the models hosted in the future and open the site up to user submissions.

Head straight over to Cattery and start making use of the ML models
here: https://community.foundry.com/cattery

Timeline Updates

You now have access to full OCIO soft effect support in HieroPlayer. This means projects imported from Studio or Hiero can be opened and all the OCIO soft effects can be accessed and adjusted. New instances of OCIO soft effects can be added on new tracks or clips, giving you even greater control over how you work in HieroPlayer and allowing you to review in the context of a sequence. We've also updated OTIO to the latest

0.15 version so that pipelines can continue to explore this new format for moving editorial data throughout your pipeline.

Colorimetry Metadata in Monitor Out

For artists working with HDR data, we are including colorimetry metadata support to allow for users to have an easier and quicker setup for their monitoring devices. You can now enable and control metadata passed over HDMI or SDI, so that their video content is automatically displayed in HDR on their appropriate monitor, helping to reduce setup time and providing greater workflow efficiencies.

OCIOv2.1 and ACES 1.3

We've updated Nuke to support OCIO 2.1.2 and, as part of that, users will also be able to use the latest ACES version 1.3. This includes new color space conversion transforms for supporting ARRI, Sony, Red and BMD cameras as well as the ACES Reference Gamut Compression algorithm for fixing highly saturated images lit with LED light sources.

We are also pleased to announce that we have also added two new configs:

- **studio-config-v0.1.0_aces-v1.3_ocio-v2.1.2** - The ACES Studio config is geared toward studios that require a config that includes a wide variety of camera colorspaces, displays and looks. In spirit it is close to the ACES 1.2 config whilst leveraging the new OCIO 2 features and being smaller. As of this release, it does not contain any external dependencies such as LUT files.
- **cg-v0.2.0_aces-v1.3_ocio-v2.1.2** - The ACES CG config is intended for use in CG lookdev, lighting, and rendering applications. It implements a fully-featured ACES color pipeline without the many camera input transforms that make up the bulk of the OCIO v1 ACES configs. The CG config is completely self-contained (no external LUT files), providing a single file color pipeline with minimal clutter. It has robust support for the most common texture and working color spaces, and SDR and HDR output transforms used in high-end CG production environments.

See OCIO Color Management for more information.

Login-Based Team Licensing

We have extended support for login based licensing to the entire Nuke Family (including render licenses and plug-ins) and expanded it to include new features and functionality for teams and organizations.

Login-based team licensing allows you to manage your pool of licenses, with a number of new tools and features for administrators to control who has access to them, giving you more control and greater flexibility over how you administer and use your software and licenses.

Note: Login-based team licensing is entirely opt-in, you can continue using the existing RLM licensing system if that covers your licensing needs.

For more information on licensing Foundry products, see: https://learn.foundry.com/licensing/

VFX Reference Platform 2022

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.

Linux Only

- GCC → 9.3.1

macOS Only

- Min Deployment Target → macOs 10.15 (Catalina)

Windows Only

- Min Platform Toolset → Visual Studio 2019
- Windows SDK → 10.0.19041

Common Components

- Python → 3.9.1
- Qt → 5.15.2
- Qt Python (Pyside2) → 5.15
- OpenEXR → 3.1.4
- Alembic → 1.8.3
- OpenColorIO → 2.1.2
- ACES → 1.3
- Boost → 1.7.6
- Intel TBB → 2020 Update 3

- Intel MKL → 2020
- C++ API/SDK → 2017

ARRI Image SDK version 7.0.0

Support for the new ARRI Alexa 35 camera using the ARRI IMAGE 7.0.0 SDK is now out of the beta phase and supported in Nuke 14.0.

Note: Legacy ARRI files including **.ari**, **.arx**, and **.mxf** files load using the older ARRI RAW 6.2 SDK.

Sony and R3D SDK Updates

The Sony and R3D SDKs have been updated to 4.21.0 and 8.3.0, respectively. These SDK updates also contain bug fixes for previous releases and include support for new camera:

- Sony Venice 2
- Red V-RAPTOR XL

Feature Enhancements

There are no feature enhancements in this release.

Bug Fixes

- ID 439456 - Read/Write: Reading DNxHD files that did not contain certain metadata displayed a **Mov64 Reader: Failed to create DNx decoder** error message.
- ID 511559 - BlinkScript: Fetching a sample value using **[#]** (square brackets) caused compilation to fail on the GPU.
- ID 516263 - Metadata: Resizing the **Metadata** column and then scrubbing on the timeline or switching to a different item reset the size of the **Keys** column.
- ID 518594 - Navigating to **Help** > **Nuke Plug-ins** did not redirect to the plug-ins page as expected.
- ID 518878 - Timeline Editing: Sequences with multiple tags and Burn-In effects decreased playback performance.
- ID 520255 - Soft Effects: The Burn-In effect did not work as expected.
- ID 521294 - Sync Review: Enabling or disabling track blending or masking during a sync session affected other sessions' Viewer unexpectedly.

New Known Issues Specific to Nuke 14.0

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

- ID 526530 - CatFileCreator: Converted **.cat** files from Nuke 14 cannot be used in earlier versions of Nuke. As a workaround, convert the **.cat** file in the version of Nuke you intend to use, such as Nuke 13.2v5.
- ID 526473 - ARRIRAW: Changing the file path in a Read node and then saving and reloading the script displays multiple knob errors unexpectedly.
- ID 526245 - UnrealReader: Disabling **Advanced** > **Cinematic Quality** in the node **Properties** occasionally displays incorrect output on multiple passes.
- ID 526188 - 3D Arch: Drag selecting in the Viewer with **Object selection** mode active does not highlight selections as expected.
- ID 526069 - OCIO: Saving a project file with the OCIO config set to a new ACES 1.3 config causes Nuke Studio and Hiero to treat the configs as custom configs, which causes load problems on other machines.
- ID 526041 - 3D Arch: Payload overrides in the Scene Graph do not work as expected for nested payloads.
- ID 525934 - 3D Arch: Time samples are created for the Display Color control even when it is not animated.
- ID 525872 - 3D Arch: The GeoDrawMode node's **Draw Color** can not be animated as expected.
- ID 525863 - 3D Arch: DirectLight has much brighter intensity when rendered through ScanlineRender than in the 3D Viewer.
- ID 525819 - 3D Arch: **Display Color** animation in Nuke geometry nodes, such as GeoCube, is not displayed as expected when rendered through ScanlineRender.
- ID 525817 - 3D Arch: **Display Opacity** changes in Nuke geometry nodes, such as GeoCube, are not displayed as expected when rendered through ScanlineRender.
- ID 525816 - 3D Arch: **Display Opacity** changes are not displayed as expected when blended against the background.
- ID 525807 - UnrealReader: The **OCIOConfigurationIsEnabled** knob name on the **Advanced** tab contains a typo.
- ID 525714 - 3D Arch: Selections in the 3D Viewer are added to selections from the **Scene Graph** tab when scene graph locations are dropped in a node's **Mask** control.
- ID 525575 - CameraTracker: CameraTrackerPointCloud nodes incorrectly display point data in the 2D output from ScanlineRender.
- ID 525462 - 3D Arch: The 3D texture cache occasionally retains textures from deleted node. As a workaround, close Nuke and then reopen the script.
- ID 524835 - OCIONamedTransform: The Viewer error when no transform is selected contains a **[** (square bracket).
- ID 524626 - 3D Arch: Hit detection in the 3D Viewer is slower than in previous versions of Nuke, which causes delayed response times.

- ID 524411 - Read/Write: Reading certain ARRI Alexa 35 files displays an **arrimxf_json_deserialize** error message on the command line.
- ID 524172 - 3D Arch: The 3D Viewer and ScanlineRender shader output is not always consistent.
- ID 524097 - Windows only: The links from the EULA page in the installer do not work as expected.
  As a workaround, copy and paste the required links in to a browser manually.
- ID 523858 - 3D Arch: The **Scene Graph** tab search function doesn't always work as expected on large scenes.
- ID 523489 - 3D Arch: Selecting a Camera in the Viewer look-through dropdown doesn't always work as expected.
- ID 522999 - 3D Arch: CameraTrackerPointCloud displays as a red node, rather than green to indicate that it is a legacy 3D system node.
- ID 522873 - Read/Write: Connecting a Viewer to a Read node that references an ARRI Alexa 35 file causes Nuke to crash if the thumbnail is still rendering.
- ID 521937 - 3D Arch: Changing the active state of materials in the scene graph disables the material for the current Viewer node.
  As a workaround, create a new Viewer node and connect it to the scene.
- ID 521907 - 3D Arch: Points in point clouds generated from CameraTracker data default to a size too large for the Viewer.
- ID 521508 - 3D Arch: The bounding box does not always follow its geometry downstream of a GeoMerge node.
- ID 521379 - 3D Arch: Connecting a Camera downstream of a GeoImport node makes the scene disappear in the Viewer.
- ID 521133 - 3D Arch: Rotating geometry using the transform handles in the Viewer does not follow pointer movement as expected.
- ID 520821 - 3D Arch: The CameraTracker point cloud **Point Size** control does not scale as expected at large size values.
- ID 520716 - 3D Arch: The **GeoImport** > **Display Materials** checkbox does not always toggle materials on and off.
- ID 520622 - 3D Arch: The **Draw Mode** applied by GeoDrawMode nodes is not set consistently.
- ID 520296 - 3D Arch: Creating a GeoSphere or GeoCylinder node in the Node Graph labels the tab in the **Properties** panel incorrectly.
- ID 520282 - UI: Moving the **Licensing** dialog around causes the window to jitter.
- ID 519987 - 3D Arch: Creating nodes Pythonically does not always create the expected node connections.
- ID 519980/519482 - 3D Arch: Projected output from the ScanlineRender2 does not always match the output from the Viewer.
- ID 519664 - 3D Arch: Scaling on GeoTransform with **Prim Transform Order** set to **Append** affects the scale of the handles unexpectedly.
- ID 519331 - 3D Arch: Camera4 nodes don't always pick up animation data from scene inputs.

- ID 519068 - Windows Installer: Specifying a different install directory does not automatically create a Nuke container directory for the necessary Nuke files.
  As a workaround, manually specify a container directory during install.
- ID 518874 - 3D Arch: Double-clicking prims in the Viewer does not open the associated **Properties** panel as expected.
- ID 518795 - 3D Arch: GeoCard always writes the **control_point** knob value in the Nuke script, even if it's set to the default value.
- ID 518654 - 3D Arch: Node names are occasionally drawn incorrectly at different Node Graph zoom levels.
- ID 518593 - 3D Arch: Setting the **Mask** to a prim that is not the node above a GeoDrawMode ignores the selected **Draw Mode**.
- ID 518581 - UnrealReader: The CompareMetaData node reads incorrect frame metadata from UnrealReader Write section rendered EXRs.
- ID 518143 - macOS only: The 3D Viewer clipped parts of objects that had materials assigned, even though the stage was set up correctly.
- ID 517980 - Windows Installer: The installer screen occasionally displays twice during installation.
- ID 517657 - 3D Arch: The **instanceable reference** and **point instancer** options in the GeoInstance node create unselectable geometry in the Viewer.
- ID 516624 - 3D Arch: Changing the Camera **projection_mode** does not change the camera wireframe in the 3D Viewer as expected.
- ID 516166 - 3D Arch: Pressing **Enter** to cycle through searched items in the Scene Graph allows items to be cycled through even if a contributing node is removed upstream.
- ID 516052 - 3D Arch: Projected textures in some customer scripts are placed incorrectly by ScanlineRender2.
- ID 515379 - 3D Arch: The GeoSphere default **Height** value is incorrect.
- ID 515370 - 3D Arch: Clicking **Invert Selection** in the GeoPrune properties does not update mask selections correctly in the Viewer.
- ID 515355 - 3D Arch: Scaling in **World** space after rotation skews the transform and scale handles incorrectly.
- ID 515353 - 3D Arch: Scaling in **World** space after rotation causes the rotation handles to wobble.
- ID 514854 - 3D Arch: Scale handles in **World** space don't work as expected if the pivot point of geometry is rotated.
- ID 514693 - 3D Arch: Handle rotations at large scale can become inconsistent and unstable.
- ID 514669 - 3D Arch: The Z-axis handle is not working in the Viewer **Screen** space.
- ID 514631 - 3D Arch: The match position menu (snap menu) doesn't work as expected in the new 3D system.
- ID 514186 - 3D Arch: Geometry incorrectly shares the same texture when connected to a cloned node upstream.

- ID 514129 - 3D Arch: Deselection in the **Vertex selection** and **Face selection** modes does not work as expected.
- ID 513943 - 3D Arch: The **Localization** controls are missing from GeoImport's node **Properties**.
- ID 513286 - 3D Arch: Vertex selection occasionally discards selected points.
- ID 513142 - 3D Arch: Vertex grouping does not grouping all selected vertices in PointCloudGenerator point clouds.
- ID 511940 - 3D Arch: Prims with no **Kind** assigned are ignored by the GeoDrawMode node.
- ID 511765 - 3D Transform Handles: Scaling a camera on a single axis does not always work as expected.
- ID 511107 - 3D Arch: Exclusion does not work as expected in the GeoCollection node.
- ID 510783 - 3D Arch: Small **u_extent** and **v_extent** values in GeoSphere/GeoRevolve(Sphere) cause textures to disappear in the Viewer.
- ID 509958 - 3D Arch: Inserting a TimeClip node between a texture node connected to a geometry **img** input and a geometry node causes the texture to flicker.
- ID 506934 - CopyCat: Collapsing the contact sheet in the Viewer does not work as expected.
- ID 505862 - 3D Pivot Point: Rotation stabilization doesn't work as expected in XYZ and ZYX rotation order mode.

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