# RenderMan for Houdini 24.0

## Welcome to RenderMan for Houdini 24!

RenderMan for Houdini (RfH) continues full support of the latest RenderMan 24.0.  See the RenderMan Release Notes for more details.

This current release offers support for:

- Houdini 17.5
- Houdini 18.0 (including Solaris)
- Houdini 18.5 (including Solaris)

Please see the release notes below for all the new capabilities and known issues.  See the Installation of RenderMan for Houdini page for the list of specific production builds RfH works with.

> ⓘ
> - Rendering with RenderMan will not operate on Houdini Apprentice editions, see SideFX's website for options that allow Third Party Rendering
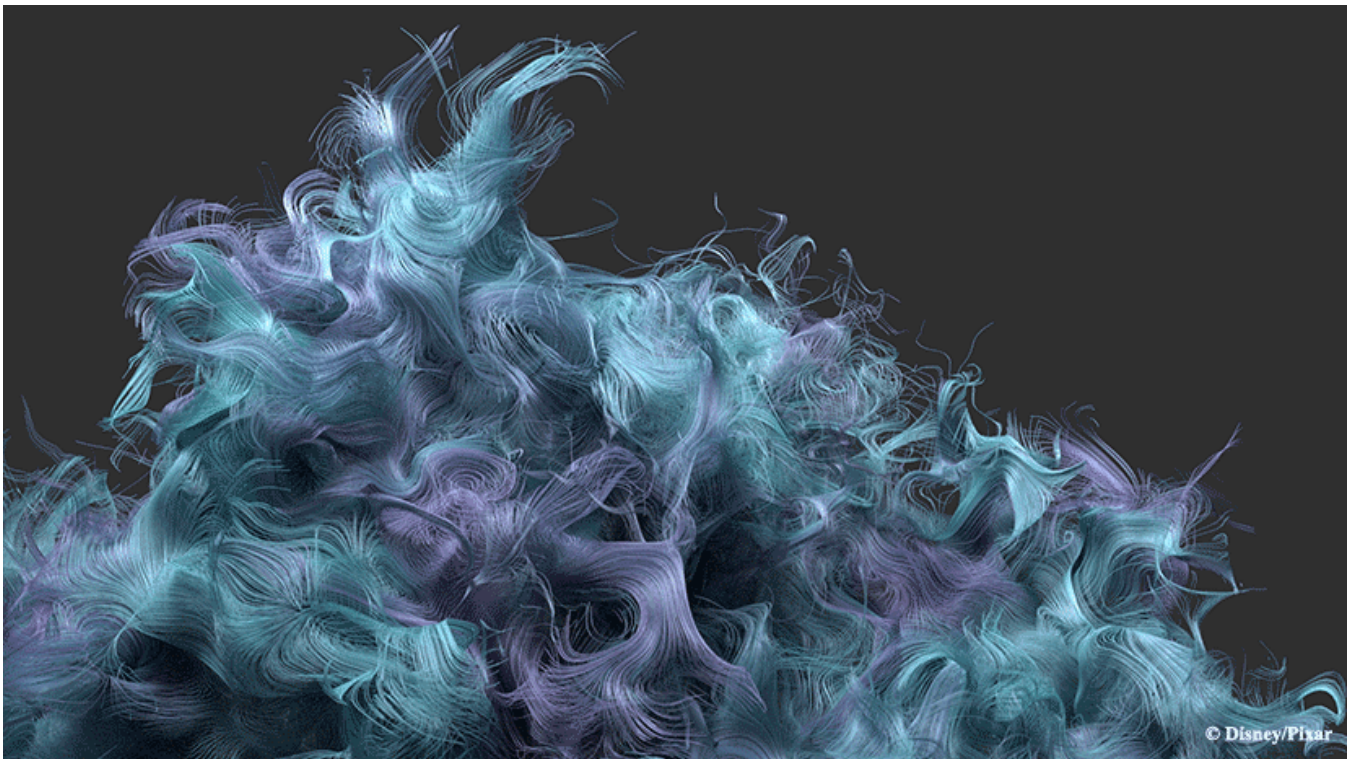


"The Unsullied" by Dylan Sisson, rendered in RenderMan for Houdini

## What's New

RenderMan for Houdini has been extended to support all of the features of RenderMan 24, including:

- XPU™ – Switch to XPU for doing Look Development.  XPU is Pixar's hybrid CPU + GPU rendering technology is a next-generation rendering engine, rewritten for speed and efficiency on film production assets. This first phase of XPU is focused on accelerating look development for shading artists. XPU is only available if you have a Commercial license of RenderMan

- MaterialX Lama – Use RenderMan 24's new **La**yered **Ma**terials developed at Industrial Light and Magic.  It introduces a modular approach for building materials.

- Stylized Looks™ – Move beyond physically based shading and lighting into a world where you can easily create a variety of styles for your projects.  You can non-destructively control outlines, create sketch patterns, and develop a wide range of unique looks.  Stylized Looks are only

available if you have a Commercial license of RenderMan

- OpenColorIO – Robust support for the industry standard ACES color management system and other color spaces

- Live Statistics – Watch your rendering resource usage live, thanks to a completely redesigned statistics system that prioritizes interactivity and extensibility

- OSL Patterns – We have converted the great majority of C++ patterns to OSL. This conversion allows the sharing of code between RIS and XPU, which provides confidence that the renders from RenderMan XPU are representative of what you will see in RenderMan RIS. C++ patterns are still supported, but they will only work in RIS

- And more!

## Changes

- All RenderMan node versions have changed to 3.0. Scenes should automatically convert to using these new nodes on startup unless you have a custom OPcustomize setup.
- Deprecate the combiner nodes. Display and Sample filters are now added via a multiparm on the ROP, and multiple light filters are directly linked to the light.
- RenderMan errors are now warnings in Houdini
- Automatic conversion of PxrHSL, PxrVary, PxrSurface, PxrMix from old scenes to the new parameter names in RenderMan 24 rely on the 456.py script on houdini scene load rather than Houdini's opalias. This is to allow us to change parameter names and keep the old values. If you already have a 456 in your pipeline, you will need to add the update methods in order to convert those shaders.
- Improved user friendliness of Cryptomatte in RfH by renaming geometry nodes to use houdini node path.
- Apply materials to instance points via instancer
- Use ptinstance on any obj node to instance rather than only the instance obj.
- Improvements to material instances.
- Added flush texture cache menu tool
- PxrDisney has been hidden in favor of the new PxrDisneyBsdf (PxrDisney deprecated)
- Batch renders now obey soho_autoheadlight parameter
- Velocity motion blur improvements
- Fix bug for colliding parameter names on pxrmaterialbuilder
- Curves rendering improvements
- Viewport light improvements (dome orientation, distant light intensity, cone angle indicators, ramp light filter)
- Add support for pre render and post render callbacks.
- Acceleration motion blur.
- Apply materials to alembic via shop_materialpath if material is already included in scene.
- Fixed issue of incorrect transforms for OBJ_Blend and OBJ_Bone
- Show dialog warnings for license failures.
- Deprecate PxrSeExpr

## Changes in Solaris

- Added support for Pause and Resume rendering while in interactive mode
- Fixed a bug where for batch renders shutterOpen/Close weren't being correctly stashed in the context for use by deforming geometry
- Added baking options to the RenderMan LOP under the Rendering/Render tab
- Fixed a bug where PxrCryptomatte sample filter could pick up the wrong camera substitution for the <camera> variable in its filename
- Fixed a bug where vdb files with a first field not named density wouldn't render
- Fixed a bug that caused some incorrect sample times when more than 3 samples for deforming motion blur
- Fixed a hang that could arise when switching frames during interactive rendering
- Improved motion blur support
- Fixed a crash in hdPrman that could occur when running in the usdview that ships with Solaris if the camera was not created with Solaris and lacked certain attributes that we support for Solaris cameras

## Known Limitations

### Live Statistics

- The initial integration is available, but live statistics are turned off by default. Artists can turn on the statistics through the buttons in the UI.

### MaterialX Lama

- Soloing complex MaterialX Lama shading networks.

### XPU

- CUDA device is saved in scene rather than as a preference.

### General

- Render with Takes is not supported.
- Rendering with Mantra lights or VOPs is not possible
- Bypassing shader nodes
- Auto camera creation for IPR

- RenderMan clipping planes
- Display edits cannot changed from the image tool to mplay
- Cross-frame denoising PDG support.
- Applying undo of deleted nodes or collapsing to subnet may not work as expected
- Rewiring subnet indirect inputs