

# V-Ray Next, Update 1

Official release

Date – Sep 25, 2019

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## Improved Speed and Quality

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- Improved interactive rendering performance on the CPU
- Improved CPU utilization during Light Cache calculation for large output image resolutions
- Hash Map Light Cache mode is enabled. This new default Light Cache calculation mode resolves most common artifacts and is more optimized and stable when used in animations
- Objects duplicated using block instancing are rendered in a more optimized way

## Workflow Improvements

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- V-Ray AppSDK updated to version 4.20.01
- Added support for Cryptomatte render element. It automatically generates and stores object or material based masks which can be exported in a multichannel OpenEXR file. This removes the hassle of creating dozens or hundreds of Multimattes.
- Light source deletion is now undoable
- The 'Visible' checkbox is removed from the Rhino properties panel for Fur, Infinite Plane, Mesh Light and Clipper objects. Use the toggle in the asset properties to achieve the same effect
- Built-in support for the Rhino Ground Plane geometry implemented. Enabling the Ground in Rhino automatically enables a V-Ray Infinite Plane object that matches the scene's ground position and material
- V-Ray Infinite Plane assets can now be enabled or disabled in the Asset Editor via their icon buttons or the toggle in their Rhino object properties
- The viewport display of highly reflective V-Ray materials is improved. Bitmap textures can be viewed and positioned even for materials that have a reflection map applied in V-Ray. In such cases the Reflection color value still affects the viewport material appearance
- Using a custom viewport texture in a material now automatically disables some of the shader effects to make it easier for the object UVs (texture position) to be manipulated
- Saving and restoring Rhino Snapshots with V-Ray material assignments and variations is now supported. Make sure to enable the Rendering/V-Ray checkbox to use it
- The step for the camera EV number field is decreased to 0.5. Click on the field and use the Up and Down keyboard keys to update the value using this new increment
- Slider handles can now be selected and manipulated using the keyboard Left and Right or Up and Down keys
- The Linear Workflow material option is removed and its behavior is automatically matched using standard shading techniques (and gamma correcting textures in some situations). Scene materials that had the option enabled in the past will render as expected. This option is no longer needed for V-Ray 2 materials to be correctly loaded
- Increased number precision of the Spline and Bezier Curve textures point positions
- An automatic connection between the Color Picker's color values and the Kelvin slider temperature is implemented. This allows for a temperature value to be saved and modified separately for every color slot
- Lighting Analyses render element property changes automatically update the VFB result. No re-rendering is required
- The File Path Editor user interface is improved. The window no longer has maximum size limits. The footer buttons now use labels instead of icons which makes their functionality clearer
- The V-Ray Frame Buffer (VFB) UI scales correctly based on the OS display scaling factor.
- The Custom Opacity Source material parameter now uses a checkbox instead of a toggle in the UI
- Drag & drop can now be utilized for applying Asset Editor materials to scene objects or layers
- A Denoiser engine switch is now available in the main Render rollout. Switch from V-Ray to NVIDIA AI denoising without navigating to the Denoiser advanced parameters panel
- The Update Effects slider is now located in the Render rollout for easy access
- Camera Motion Blur toggle is implemented
- The 'vrayCamGuessVertical' command can no longer be executed while an orthographic view is active
- Proxy meshes copied from another session during Interactive Rendering are now correctly displayed and rendered
- A number of issues with window ordering in Windows 7 and 8 are resolved. The VFB no longer goes to the background when focused
- Project names containing a full stop character no longer prevent the Pack Project function from being executed correctly
- The 'Tools / Randomize Material ID Colors' function randomizes all scene Material ID colors and not only the ones initially set to black
- VFB regions drawn during production rendering are disabled
- Loading render settings presets or resetting to the default one during rendering is no longer allowed
- The Translucency rollout of the V-Ray BRDF is renamed to Fog Scattering to better reflect what the options in this section do
- The Bump Delta Scale parameter is automatically hidden when the Normal Map mode is selected. The delta scale option has no effect in this case
- Scene upgrade prompt window implemented. When a Rhino scene saved with older V-Ray version is loaded a window letting you know that the V-Ray data will be upgraded appears. It clearly states that after the scene is saved with the new version it can no longer be loaded in a previous one

## Materials

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- The native Rhino RDK material system is used for our internal V-Ray materials management. This resolves a number of issues and limitations when shading a scene

- V-Ray material can now be created in the Rhino Materials panel. Every material created in the Asset Editor will also automatically appear in the Rhino list. Converting a Rhino material to a V-Ray one and vice-versa can now be done by changing its Type
- V-Ray materials can be assigned to layers using the native Rhino approach
- The V-Ray-side material conflict handling is removed. The Rhino material conflict handling is used instead
- The logic for converting Rhino materials to V-Ray shaders is improved
- The obsolete commands vrayApplyMaterial and vrayMtlEnable are removed

## V-Ray for Grasshopper

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- Context menu for selecting an existing Standard or Named scene view is added to the Camera Component
- V-Ray Exporter component implemented. It exports vrmesh or vrsce files based on the GH definition
- V-Ray Graph component implemented. This is an advanced value remapping utility component that exposes a bezier curve editor. Combine it with the V-Ray Timeline to create more advanced animation setups
- The Render Animation function is separated from the standard Render one in the V-Ray Renderer component
- A simpler way for loading library materials in the V-Ray Material from File component is implemented. Right-click on the component to find the materials list
- Individual light components can now be connected directly to the Renderer. The need for adding an in-between light rig component is removed
- A preview graphics for the V-Ray Light Rig Sun System component is added
- An issue with Proxy Scene preview scaling is resolved
- Grasshopper animations now correctly use the current Rhino viewport camera position
- Orthographic cameras are now supported in V-Ray for Grasshopper. Increase the Orthographic Zoom Factor value of the Camera component to see the effect
- Proxy Scene previews are now correctly scaled in the Rhino viewport
- The Renderer Quality presets now exactly copy the common V-Ray presets used in the Asset Editor
- Rendering of thousands of Proxy Meshes instances is optimized and significantly faster. A single auto-generated material is used for all instances
- Connecting geometries to the Renderer component during interactive rendering no longer causes issues (objects no longer disappear)
- Deleting a V-Ray Render in Project component or closing the definition itself now correctly removes the Grasshopper objects from the Rhino scene
- Connecting a single material to a V-Ray Proxy Mesh component that has multiple face IDs (multiple material slots) automatically removes the auto generated materials. A single material is used for all mesh faces until additional shaders are connected
- The V-Ray Timeline can now successfully play lengthy animations in the viewport. The process no longer hangs in the middle of the playblast
- Both the File and Option Picker components (used to control V-Ray specific parameters) are now correctly scaled on high-dpi display system

## Animation

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- Camera focus distance changes can now be rendered in animation
- A number of issues with Bongo animation rendering are resolved
- Setting up a Rhino animation no longer removes the V-Ray Interactive viewport display mode option in Rhino 6

## Other Changes & Bug Fixes

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- A number of issues related to the Can be Overridden option are resolved. It now functions correctly during interactive rendering
- Two sided materials with nested multi sub textures no longer cause a crash during interactive rendering
- Drawing a region during interactive rendering on the GPU after a linked Grasshopper document is updated no longer causes a crash
- A number of issues with HDR Light Studio interactive environment rendering are resolved
- Textures with localized names are now properly displayed in the viewport
- Deleting all scene objects during interactive rendering no longer breaks Material Override's functionality
- Layer visibility changes are now correctly handled during interactive rendering
- The Batch Render tool can now load and render scenes using the GPU engine
- Spot Light's cone and penumbra angle parameters are now correctly migrated for V-Ray 2 scenes
- The Rhino sun is now automatically disabled when setting V-Ray as a current renderer for the first time
- The Use Irradiance Map Option is removed from the V-Ray BRDF and re-introduced into the Wrapper material
- The Cutoff and Energy Preservation parameters are removed from the V-Ray BRDF Advanced Options rollout
- Resolved an issue with newly created Proxy Mesh materials
- Lights created in the Asset Editor during interactive rendering are now automatically enabled
- Consistent material IDs get assigned when the same alembic (.abc) proxy file is loaded more than once
- Some legacy materials and textures are migrated to their current equivalents (Legacy Noise, Angle Blend Material, Falloff ASGVIS, etc.)
- Loading specific .vrop (V-Ray Options) files in the Asset Editor no longer causes errors
- Material conflicts caused by linked blocks no longer have to be resolved twice when opening the project
- The Bump material asset icon (in the Assets Outliner list) no longer changes after the scene is saved and reopened
- Hidden Lights can now be toggled during interactive rendering