

# V-Ray Next, Update 2

## V-Ray Next, Update 2.1

*Official Release*

**Date** - July 02, 2019

**Download** - [Build 4.20.01](#)

### New features

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#### VRayEdgesTex

- Add mapped multiplier to control the rounded corners' radius

### Modified features

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#### V-Ray

- Add a warning when there are Render Elements with filtering off and Progressive Sampler
- Avoid saving the "Shademap export" helper channel to image files
- Render Raytrace material as black to avoid interfering with shading

#### VRayOSL

- Increase width of the string widgets

#### VRaySamplerInfo

- Add tangent and bitangent modes in object space

#### VRayVolumeGrid

- Copy-paste support for render gradients and curves

#### VFB

- Revert the IPR zoom modifier to Ctrl+Shift/Ctrl

### Bug fixes

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#### V-Ray

- Artifacts with VRayEnvironmentFog and Adaptive dome light
- Debug shading in Viewport IPR MaxScript error on 3ds Max2017
- Debug shading in Viewport IPR menus produce error after V-Ray is uninstalled
- EXR images are saved as "incomplete" (since 4.20.00)
- Memory tracking reports wrong month number on the timestamps
- Rendering a specific scene with disc lights produces incorrect results on the second render
- Spurious skipping of a subframe when rendering using PresenZ camera and DR
- Using "File" > "New" > "Keep objects and hierarchy" may cause a crash if the scene has VRayHDRI maps

#### V-Ray IPR

- Attempting to stop rendering may freeze 3ds Max
- Changes to displacement maps are not updated (since 4.20.00)
- Crash if the scene is modified while V-Ray is preparing objects
- Crash when copying objects with Override material
- Crash when creating new objects while V-Ray is preparing geometry
- Crash when rendering with CoronaMtl
- Crash with 3D displacement with "Keep continuity" enabled if the scene is modified while V-Ray is preparing objects
- Creation of dome light from the V-Ray toolbar is not correctly detected
- Deleting a dome light is not reflected
- Inconsistent lighting when rotating dome light
- Incorrect direct illumination of VRayLightMtl
- Lights with animated multiplier don't update
- Moving an instance of a displaced object during rendering may cause a crash
- Unhandled exception when exporting a .vrmesh file during rendering

## V-Ray GPU

- Crash with adaptive lights with more than 110 000 lights
- Closing the VFB while exporting nodes crashes 3ds Max
- Crash when rendering VRayInstancer with many particles and VRayVolumeGrid
- Crash when sliding the timeline during IPR and then stop rendering
- Crash with light cache when mesh acceleration types in MB segment's ends are different
- Every 10-th UV tile (e.g. 1010, 1020, 1030) is not rendered
- Incorrect light cache retrace amount in some cases
- Incorrectly strong bump effect with normal maps and VRayAISurfaceMtl
- Rounded corners r not rendered with Bucket sampler in scenes with no direct lighting
- Vertical FOV with spherical panoramic camera is ignored unless a 360 degree horizontal FOV override is used
- VRayALSurfaceMtl with rounded edges render wrong
- VRayALSurfaceMtl's SSS is darker in the areas reflecting objects with VRayFastSSS2

## V-Ray Cloud

- Color Correction texmap is rendered wrong with 32-bit images
- Difference in render with VRayEdgesTex in the VRayMtl displacement slot

## VRayHairMtl

- Does not compose correctly when the "consistent lighting elements" option is enabled

## VRayOSL

- Dropdown parameters reset when refocusing the node in the Slate Material Editor
- Tooltips for shader parameters are displayed in the wrong places

## VRayPluginNode

- MtlRoundEdges plugin is not working in "Convex only" and "Concave only"
- Renders different than V-Ray Standalone in bump slots
- Scenes saved with blacklisted plugins should still open correctly

## VRayToonMtl

- Don't bake gamma into the gradients of VRayToonMtl
- Export to .vrscene

## VRayVolumeGrid

- Brighter results in VRayLighting render element with Consistent lighting elements turned on
- Crash with caches over 2.1 billion voxels with Phoenix Light Cache since Phoenix 3.12

## VFB

- Crash when loading a 3ds Max scene from the history
- Dock history option causes IPR restart
- The tooltip for the debug shading is wrong

# V-Ray Next, Update 2

*Official Release*

**Date** - June 05, 2019

**Download** - [Build 4.20.00](#)

## New features

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### V-Ray Cloud

- Indirect light select modes support

### V-Ray GPU/V-Ray Cloud

- Support for Substance 2 maps

### V-Ray GPU

- Add support for VRayCurvature texture

- Support for V-RayDistanceTex
- V-RayALSurfaceMtl shader support

#### **V-Ray IPR**

- Overlay progress notifications in the Viewport IPR

#### **V-Ray/V-Ray GPU**

- Debug Shading with various modes during IPR
- Hash map based light cache
- Native rendering of Corona scatter instances

#### **V-Ray**

- Add V-Ray memory tracking support
- Baking elements support for opacity map when doing projection baking
- Implement barycentric mode in the V-RaySamplerInfoTex

#### **VFB**

- Ability to do test renders at lower resolution
- Add keyboard shortcuts for mouse actions in IPR

#### **V-RayOSL**

- Implement the 3ds Max OSL shading graph support

#### **V-RayToonMtl**

- Add V-Ray's Cel shader implementation support

#### **V-RayVolumeGrid**

- Add support for V-Ray GPU render elements: V-RayNormals, V-RaySamplerInfo, V-RayZDepth, V-RayVelocity, V-RayGI, V-RayDiffuseFilter, V-RayShadows, V-RayObjectID, V-RayRenderID
- Modulate or replace the Fire Opacity with a texture in "Use Own Opacity" mode

## **Modified features**

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#### **.vrscene exporter**

- Disable 3ds Max UI updates to avoid slowdown with animation export due to redrawing heavy scenes
- Nozon PresenZ plugin parameters export
- Optimize export time with particle systems
- Support for pixel aspect ratio

#### **V-Ray Bitmap to V-RayHDR1 converter**

- Should be usable through MAXScript
- Use maketx instead of img2tiledexr by default

#### **V-Ray Cloud**

- Add a warning when using V-RayAmbientLight and Adaptive Lights

#### **V-Ray GPU**

- Add UI for resumable rendering with GPU bucket sampler
- Add an option to save color corrections for the raw image output
- Add support for V-RayExtraTex exclude/include lists
- Improve Light Linker memory efficiency
- Remove OpenCL engine from the UI
- Support for multiple map channels for bitmaps in V-RayGLSL

#### **V-Ray Toolbar**

- Add the "Submit to Chaos Cloud rendering" as separate button

#### **V-Ray**

- Add a warning when there are render elements with filtering off and Progressive sampler as they are incompatible
- Check for version compatibility between the DR servers and client
- Displacement/subdivision tessellation outside the camera frustum should be coarser (reduces memory usage)
- Display a warning when using Auto Exposure/White Balance with Region Render or Render Mask
- Faster production IPR with complex scenes

- Improve loading time for scenes with many V-Ray lights
- Improved sampling for scenes with many light sources
- Mitigate Windows freezing while rendering
- Move the Authorization and About rollouts to the Settings tab
- Optimized memory usage for scenes with many disc lights
- Print a warning if the V-RayLog.txt file is written to C:\ or inaccessible path
- Print a warning when using the irradiance map with full light select elements
- Remove writing of V-Ray shade maps
- Update to Alembic 1.7.10
- Use lower resolution on HiDPI displays with Viewport IPR

#### **V-RayMtl**

- Better shadow terminator with strong bump maps
- Remove the highlight glossiness slots from UI in Slate Material Editor and disconnect the texmap
- Use the Oren-Nayar model for diffuse roughness

#### **VFB**

- Ask to save the current modified scene when using the Open Scene command from History

#### **VRayGLSL**

- Increase the number of texture channels to 16
- Speedup compilation of shaders

#### **VRayHairMtl**

- Add support for "Position along strand absolute" mode

#### **VRayLight**

- Dome lights should be adaptive by default

#### **VRayMDL/VRayGLSL/VRayOSL**

- Implement an output selector for OSL
- Improved initial rollout states

#### **VRayMDL**

- Use GGX as fallback for unsupported microfacet BRDFs

#### **VRayOSL**

- Support for shaders that use the trace() OSL function in the 3ds Max OSLMap texture

#### **VRaySamplerInfoTex**

- Extend VRaySamplerInfoRE with tangent and bitangent in uv space

#### **VRayShadowMap**

- Deprecate for future use

#### **VRayVolumeGrid**

- Show the mesh preview together with the voxel preview when both are enabled
- Speed up preview of AUR cache files by reading the grid channel data min-max range from their metadata
- Support for OpenVDB 5

## **Bug fixes**

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#### **.vrscene exporter**

- Current frame number is not written to .vrscene when exporting a single frame
- MAXScript that exports .vrscene and then loads a render preset freezes 3ds Max
- Wrong export of Composite map with layers in "normal" mode

#### **V-Ray Bitmap to VRayHDRI converter**

- Wrong conversion of .exr textures with overridden gamma

#### **V-Ray Cloud**

- Animated clipping plane of 3ds Max Physical Camera is not exported to .vrscene
- Animated exposure options in Environment and Effects are not exported

- Camera Automatic vertical tilt doesn't work with animation
- Cellular map assigned to a refractive VRayMtl is renders with differences
- Crash with 3ds Max blackbody.osl with a texture which is not an OSL texmap
- Crash with Forest Pro with non-default V-Ray/object properties values
- Difference in Bump mapping with VRayHDRI
- Difference in the VRayZdepth render element when the VRayMtl refraction "Affect channels" is set to "All channels"
- Different bump seed info from BerconNoise
- Dome light's texture is not exported correctly in some cases with "Lock texture to icon" enabled
- Export animated depth of field from VRayPhysicalCamera, Physical Camera and render setup
- Export animated parameters that control camera exposure
- Forest Pack Edge mode is not exported to .vrscene files
- Forest Pack object with set object id is not rendered in the MultiMatte pass in Standalone and the cloud
- Inconsistencies and performance issues on rendering of motion-blurred VRayInstancer
- Mismatched channel names when outputting .vrmg and .EXR and there is a VRayDenoiser render element
- OpenEXR textures with gamma override do not render properly
- Output settings of maps are not exported properly when animated
- RailClone object used as VRayDistanceTex object did not respect "Renderable" object property
- Scenes with light linking renders a lot slower than in 3ds Max on multi-core machines
- Scenes with time display set to Frame: Ticks, non-zero ticks and motion blur render darker
- Support for the VRayScatterVolume material
- Top-Bottom output layout option in the VRayStereoscopic helper is not exported in .vrscenes
- VRayAlSurface produces incorrect GI pass
- VRayAlSurface renders differently
- VRayFur animation is not exported
- VRayPhysicalCamera animated "F-number" is not exported
- Visible to camera object property is not exported properly when there is VRayLightMtl with Direct Illumination on
- When using Auto exposure light cutoff threshold is applied prior to the EV adjustment
- Wrong export for VRayProxy file name parameter for proxy/alembic sequences
- Wrong results when "Affect shadows" is turned off in the refraction VRayMtl parameters

## V-Ray GPU

- A scene with two VRayClippers in mesh mode is rendered incorrectly with V-Ray Standalone/V-Ray Cloud
- Add the "Previous render" function to
- Artifacts with VRayDisplacementMod and TriplanarTex
- Back faces of double sided VRayMtls are not rendered
- Black output when saving from the 3ds Max Common tab options and using Render Mask
- Black transparency effect in a scene with a lot of geometry stacked behind each other
- Buckets produce different results when rendering in hybrid mode
- CUDA errors when rendering a sequence with animated VRayClipper, dome light and reflective/refractive materials
- Crash in IPR when RailClone material is modified
- Crash in a scene with Forest Pro animated geometry with motion blur and VRayVelocity render element
- Crash on scene reset after rendering a scene with Forest Pro
- Crash when modifying materials of ForestPro objects during IPR
- Crash when rendering VRayProxy with VRayLightMtl (with direct illumination on) and motion blur
- Crash when rendering invalid light cache file
- Crash when uploading huge textures in full size
- Crash with specific scene rendering when turning off lights during IPR
- DR Bucket unsupported render element warning is erroneously shown
- Enable saving of the light cache
- Error 700 during IPR with on-demand texture size and override material
- Error 716 with VRayHairMtl and VRayHairNextMtl with older GPU drivers
- Excessive memory consumption with Bucket Sampler
- GLSL shaders that use the sqrt() function crash
- Geometries disappear during IPR when rendering with Render Mask Selected and moving a selected geometry
- IPR is locked to the projection instead of the current view
- Include/exclude linked objects from lights causes all child objects to be excluded too
- Low quality baked Spiral mode of Gradient Ramp in Anisotropy
- Memory leak with on-demand textures when used in IPR
- NaN pixels when rendering in hybrid
- Show VRaySwitchMtl as compatible
- Some scenes with VRayFur take much time before the rendering starts
- Stochastic flakes: missing secondary reflections
- UDIM textures are rendered black with On-demand mipmapping texture mode
- VRayDRBucket render element outputs black color with Progressive sampler is used
- VRayInstancer uses only the PRT particles from the initial frame
- Visible edges on geometry with VRay2SidedMtl and VRayNormalMap
- Wrong GI and shadow calculation with environment color different from black
- Wrong render when the first production render of the 3ds Max session is Orthographic
- Wrong rendering of animated VRayColor with motion blur

## V-Ray IPR

- Animated amount of 2D VRayDisplacement is not updated between frames
- Assigning a new environment map is not reflected
- Crash on specific scene with cloned objects when picking material in the Slate Material Editor during Viewport IPR
- Crash when adjusting Gradient Ramp in VRayLight
- Crash when changing the topology of a newly copied object
- Crash when modifying 2D displacement amount after changing the texmap
- Crash when selecting existing geometry while creating geometry

- Crash when starting IPR in scene with objects with scripts as custom attributes
- Crash when turning on "Auto exposure" or "Auto white balance" during rendering
- Crash when tweaking VRayDisplacementMod in specific scene
- Crash with VRayInstancer and VRayMultiSubTex when scrubbing the timeline
- Crash with multi-threaded VRayInstancer when changing frames
- During rendering with "Auto exposure" enabled, the image may flicker slightly on each IPR update
- Opening the VFB during Viewport IPR causes rendering restart
- Render mask in texture mode does not work
- Use the color corrections from the VFB in Viewport IPR
- Using Array tool during rendering causes missing objects in 3ds Max 2017
- Viewport IPR can be started in multiple views using the Maximize Viewport Toggle
- Viewport IPR should not set the post effects rate to 100 if it was zero

#### **V-Ray Toolbar**

- Creating V-Ray Physical Camera produces an error on 3ds Max 2013

#### **V-Ray/V-Ray Cloud**

- Incorrect full light select element with VRayFastSSS2

#### **V-Ray**

- Adaptive dome light artifacts with invisible lights blocking the dome
- Artifact in reflection of object behind the camera with adaptive lights
- Crash with ProOptimizer modifier during compiling geometry
- Crash with animated GrowFX geometry instanced with ForestPro with animated instances
- Difference in GI between Max and Standalone with Adaptive Lights
- Double Sided material renders incorrectly if there is unsupported material input
- Extreme slowdown in very small area of a scene with dense hairs over SSS surface
- Flickering of distant light sources with the adaptive lights and many light sources
- Frames overwrite each other when saving frame sequences as .vrimg through the Max native render output dialog
- Lens effect generate wrong results with overbright pixels
- Long file paths are not visible in the Overwrite files list dialog
- Missing deep data in VRayLightSelect render element
- Missing effects result channel after changing Lens effects mode
- NaN or negative pixels in VRaySpecular render element
- Override material by Include doesn't work properly with grouped objects
- Raw images are still saved when canceling a render
- Resuming a bucket render resets the progress to zero
- Resuming a render with "Store direct light" disabled produces different buckets
- Setting the log file path with MAXScript has no effect if the Render Setup window is not open
- Unhandled exception with PFlow and TurboSmooth
- Using an OSL texture as bump map does not work in Standalone
- VRayZDepth element channels are named differently depending on VRayOptionRE in multipart EXR
- When using the "split channels" option, normals render elements should be stored without gamma

#### **VFB**

- "Export and render" from .vrscene exporter scales the VFB twice the scale factor on HiDPI displays
- Copy to stamp label is truncated on high DPI monitors
- EXR files loaded in the VFB do not have their integer REs displayed
- HSL color correction in the VFB is incorrect for very dark colors
- History not updated after deleting a .vrimg through file explorer
- Levels histogram is not updated when loading a file from history
- Save render settings with any .vrimg file saved by V-Ray (not only in the VFB history)
- Towards the end of the light cache calculations the progress bar starts going back

#### **VRayClipper**

- Artifact with clipper in open space scenes with dome light
- Clippers do not respect include list when included object is hidden
- Clipping objects outside of the include list if the objects that are in it are hidden
- Incorrect results with disabled "Clip lights geometry" and dome light rendering with V-Ray GPU
- Mesh clipper casts incorrect shadows

#### **VRayColor**

- Crash after Undo/Redo

#### **VRayDisplacementMod**

- Results with "Keep continuity" are incorrect when UVTILE textures are used

#### **VRayFur**

- Crash when rendering large areas with VRayFur
- Crash when rendering on VRayProxy with variable polygon count

#### **VRayGLSL**

- CUDA error 716 with V-RayMDLMtl using bump

#### **V-RayIES**

- Lights with no profile are rendered black when override intensity is set to "replace"

#### **V-RayInstancer**

- Artifacts in V-Ray GPU/V-Ray Cloud using multi-segmented motion blur
- Interval discrepancy on motion-blurred instances with V-Ray Cloud
- Not rendering correctly with multi-segmented motion blur

#### **V-RayLight**

- Textured and Disc lights do not generate caustics

#### **V-RayMDL/V-RayGLSL/V-RayOSL**

- Error loading ParamBlock2 when merging a scenes containing shaders

#### **V-RayMetaball**

- Unhandled exception when rendering PF events with V-RayParticleColor shading

#### **V-RayMtl**

- Metalness values different from 0.0 and 1.0 render incorrectly

#### **V-RayOSL/V-RayGLSL**

- Crash when rendering with V-Ray Standalone

#### **V-RayOSL**

- Bump mapping is not working with V-RayOSLTex
- Crash in IPR with V-RayOSLTex in a specific scene
- Crash on post-Haswell processors
- Crash with V-RayOSLTex with connected texture linked to V-RayLightMtl with Direct Illumination on
- Loading and cloning an OSL node with in-place shader does not compile it automatically
- Reloading an OSL shader does not work
- Shaders do not load when loading a scene with a shader that contains an include directive

#### **V-RayOrnatrixMod**

- Ornatrix additional mapping channels data is inaccessible

#### **V-RayPhysicalCamera**

- Turning "Targeted" off crashes in IPR

#### **V-RayPluginNode**

- Cloned plugins miss the texture slots links

#### **V-RayProxy**

- Alembic proxy in bounding box preview mode or with preview override loads the whole geometry
- No motion blur with 3ds Max Fluids imported through Alembic

#### **V-RayScannedMtl**

- Crash when selected in Material Editor due to invalid symbols in the file path

#### **V-RayVolumeGrid**

- Cannot abort rendering by cancelling the pre-render progress windows
- Constant mesh rebuild in 3ds Max viewport when the timeline start is not an exact frame
- Crash when rendering a volume with Create Lights intersecting a geometry with a Light Material
- Crash when rendering empty volume grid with V-Ray GPU
- Crash when using one object as a render cutter for two volume grids
- Fire Lights keep illuminating the scene after the cache sequence ends during sequence render
- FumeFX 4 VDB caches are imported with offset Pivot point
- GPU Volumetric effects go missing when switching between Bucket and Progressive Sampler type in Volumetric Geometry mode
- Having many instances breaks smoke's occlusion by geometry
- Jittering with animated camera inside of a volume grid using V-Ray GPU
- Memory leak when rendering with GI and any V-Ray render elements
- Min-max channel range of AUR caches randomly displays very large numbers
- OpenVDB caches that contain internal rotation are rendered clipped with V-Ray GPU
- Optimize volumetric rendering when Smoke Opacity is modulated by a texture

- Phoenix lights from one volume grid do not illuminate some parts of other grids depending on the camera angle
- Rendering produces wrong normals render element results with V-Ray GPU
- Slow preview auto-reduction of large VDB caches compared to Phoenix FD
- Slow viewport preview when the timeline start is not an exact frame
- The warning about DR and local paths is still appearing even when there is no volume grid in the scene
- Using many chained texture maps in the volumetric shader produces different renders of the same frame when rendering repeatedly
- Very slow loading of OpenVDB files from network
- Volumes are rendered if the volume grid is hidden but "Create Lights Even If Not Renderable" is Enabled
- Voxel preview of temperature around 200 Kelvins with As Fire enabled draws bright red and pink voxels
- When two or more grids have any overlapping walls volumetrics aren't rendered correctly with V-Ray GPU
- Wrong Object XYZ texture mapping with V-Ray GPU

#### **VRayWireColor**

- No output for objects instanced with Forest Pro and VRayInstancer

#### **ply2vrmesh.exe**

- The -velocityAttrName parameter of ply2vrmesh does not work for Alembic files

#### **vdnoise.exe**

- The "skip existing images" config option still leaves a lot of per-frame processing with raw VFB output
- The vdnoise tool displays a warning when -frames is used with wildcard that specifies single file