

# V-Ray Next

## V-Ray Next, hotfix 1

*Official Release*

Date - Oct 10, 2018

Download - [Build 4.02.05](#)

### New features

V-Ray/V-Ray GPU

- Add a parameter for additional control of the auto-exposure (camera\_autoExposure\_compensation)

V-Ray

- Initial support for direct rendering of CoronaMtl and most materials from the Corona material library

### Modified features

VRayDenoiser

- Switch to Optix 5.1 for the NVidia AI denoiser

VRayGLSL/VRayOSL

- Added keyboard shortcuts, compile and reset options to QuickShader UI

VRayHDRI

- Improved performance for tiled .tx and .exr textures

VRayMDL

- Add support for Ward BRDF in MDL plugin

VRayScene

- Implement support for VRayCryptomatteElement

### Bug fixes

Lens Analysis Tool

- Crashes when analyzing a photo manually

V-Ray GPU

- Blank images saved when used as texture baking renderer
- CUDA error 700 when turning off Lights while rendering in IPR
- Crash on the second frame in scenes with lots of animated plugins
- Crash when cancelling a batch render in 3ds Max
- Crash when deleting VRayLights in specific scene
- Crash when deleting heavy geometry in specific scene
- Crash with BerconNoise and VRayDisplacementMod during IPR
- Crash with Displacement and Environment Fog during IPR
- Crash with Ornatix (since 4.02.01)
- Crash with specific VRayProxy and displacement
- Disable refresh interactive VFB button as it doesn't work correctly in IPR
- IPR crashes with stereo mode set to Anaglyph(Red/Cyan)(Green/Magenta)
- Noisy alpha channel with shadow catcher objects
- Random crash when changing VRayLight options
- Unexpected render result with non-spherical Dome VRayLight and matte shadows
- Unhandled exception when moving the time slider with motion blur and OpenSubdiv
- VRayDirt's "double sided" parameter is not working correctly
- VRayHDRI with RGB multiplier in the Output rollout renders differently
- VRayOCIO does not work with bitmaps
- When there is just one light in the scene, adaptive lights v2 unnecessarily resets the progressive buffer
- When using displacement, textures are affected by the texture format setting

V-Ray scene converter

- Fix Opacity and Reflection Glossiness parameters conversion for CoronaSkinMtl
- Fix Reference node space mode conversion for CoronaTriplanar

#### V-Ray

- Artifacts with adaptive lights in a certain interior scenes
- Crash when modifying V-RayInstancer material and switching to another frame during IPR
- Crash when rendering with DR (since 4.02.04)
- Crash when starting IPR after resetting a scene with DR
- Crash with region rendering with render elements and Previous render set to Darken
- Different brightness in high-res renderings with Auto Exposure
- Fix V-Ray Cloud scene submission broken animation export
- IPR crashes with Alembic hair in specific scene after stop
- Improve selection of V-RayPhysicalCamera and V-RayLight in the viewport
- Separate render channels output files are not named properly when saving to separate folders (since 4.02.03)
- Standard material diffuse texture and opacity map do not work with V-Ray Next
- Stuck at "Building embree moving trees" with multi segment motion blur

#### VFB

- Aspect ratio is changing when resizing VFB during IPR
- Closing the VFB window while 3ds Max is saving a VFB image causes 3ds Max to crash
- Image Info has to be cleared when loading a new image in VFB

#### V-Ray2SidedMtl

- Crash with animated submaterial on the second frame in V-Ray GPU
- Invalid colors with V-Ray Standalone when rendering scenes with two V-Ray2SidedMtl materials nested in each other

#### V-RayDirt

- Crash when undoing deletions of geometries that are in Include/Exclude lists

#### V-RayDistanceTex

- Crash during IPR (since 4.02.01)

#### V-RayEnvironmentFog

- Crash with V-RayEnvironmentFog with overlapping gizmos with coinciding far sides

#### V-RayGLSL

- GLSL materials cause V-Ray GPU to recompile kernels on each start

#### V-RayInstancer

- Crash when rendering with Thinking Particles (since 4.02.03)
- Fixed losing some particle groups during instancing

#### V-RayOSL

- Crash during IPR
- Crash when selecting specific V-RayOSLTex in material editor on scene open
- Flipped textures with OSL maps on V-Ray GPU
- OSL issues errors when output closures are not explicitly specified
- Renders black in IPR if attached to V-RayExtraTex

#### V-RayPluginNode

- Crash when a texmap used as a displacement map is being modified during IPR

#### V-RayScene

- Camera settings from vrscene interfere with the camera in 3ds max

#### V-RayVolumeGrid

- Caches containing a minus/dash sign before the # format can not be loaded
- Caches containing digits after the # format can not be loaded
- Crash when rendering with GPU as production after rendering with IPR
- Multiple overlapping volumes do not blend correctly with V-Ray GPU

## V-Ray Next

*Official release*

Date – 22 May, 2018

Download – [Build 4.02.04](#)

## New Features

### VRayMtl

- Add "Metalness" parameter for easy support of PBR workflows
- Add a texmap slot for the GGX GTR tail falloff

### VRayLightSelect

- Add "indirect", "indirect diffuse" and "indirect specular" modes

### VRayOSL

- Support for OSL scene attributes
- Ability to attach textures to arbitrary OSL parameters

### .vrscene exporter

- Initial support 3ds Max 2019 native OSLMap

### V-Ray

- Add dialog to confirm file overwriting with Separate Render Channels
- Support for the mesh vertex velocity internal interface in 3ds Max 2019
- Add a button to transfer auto-exposure and/or auto-white balance to scene cameras
- Add MAXScript functions to start and stop IPR with V-Ray GPU
- Added Italian tooltip translation
- Cryptomatte support for DWA compressed OpenEXR files
- Update the SDK to make greater use of SSE instructions for 3D vector, color and matrix operations
- Update Embree to version 2.13
- Add options for auto-exposure and auto white balance in the Camera section of the render settings
- Add tooltip translation support for various languages
- Add scripts for the 3ds Max Scene Converter (2017 and newer) for various scene elements to V-Ray ones
- Add drag-n-drop support for V-Ray asset files onto the 3ds Max window (.vrmesh, .abc, .vrscene, .ies, .aur, .f3d, .vdb, .vrlmap, .vrmap)
- Require CPU with SSE 4.2 to support SIMD optimizations
- Show render progress on the Windows taskbar buttons
- Add a button to transfer auto-exposure and/or auto-white balance to scene cameras
- Add MAXScript functions to start and stop IPR with V-Ray GPU
- Added Italian tooltip translation
- Cryptomatte support for DWA compressed OpenEXR files
- Support for the mesh vertex velocity internal interface in 3ds Max 2019

### V-Ray GPU

- Add support for glossy Fresnel
- Improved GPU 3D displacement
- Initial version of GPU dedicated UI (to be further simplified in next versions)
- Initial support for VRayEnvironmentFog (without textures)
- Initial support of VRayVolumeGrid (brute force probabilistic volume sampling only)
- Initial support for VRscans (VRayScannedMtl)
- Support for Bercon Noise texture
- Support for DoF with pinhole camera
- Add support for adaptive dome light
- Add support for volumetric rendering
- Support for BRDF mode of VRayGLSL's PTX backend
- Re-organized the UI options
- Implemented new rendering architecture resulting in better performance

### VRayLight

- New adaptive dome light option to help speed up rendering of interior scenes and IBL in general (work in progress)

### VRayHairMtl2

- Implement initial version of a new hair shader with melanin color control

#### VRayDenoiser

- Ability to denoise multiple render elements in a single pass (also added denoising on/off in various other REs)
- Integrated the NVIDIA AI denoiser as an alternative denoising engine

#### VRayMDL

- Ability to manage include paths through MAXScript
- Support for UTF-8 resource file paths

#### VRayOSL/VRayMDL

- Allow adding shader include paths from UI

#### VRayPluginNode

- Initial implementation of VRayPluginNode material and texture

#### VRayProxy

- Modifiers applied to VRayProxy objects are rendered correctly (the proxy is converted to a regular mesh)
- Add support for Alembic 1.7 layers

#### VRayRenderTime

- Per-pixel render time information render element (bucket sampler only)

#### VRayScannedMtl

- Add triplanar mapping option

#### VRaySwitchMtl

- Add switch material for selecting sub-materials based on a texmap value

#### VRayVolumeGrid

- Integrate new velocity-based grid interpolation method
- Support XForm modifiers in Volumetric render mode
- Direct loading of sparse VDB caches without resampling
- Support for relative cache paths in .vrscene files and the -remapPath option in V-Ray Standalone

#### vdnoise.exe

- Implement GUI for use without command-line parameters

#### vrstconvert.exe

- Add the deep reader and converter for .vrst files to V-Ray for 3ds max and Nuke installations

#### VFB

- Add option to disable VFB resizing on image load

#### V-Ray Light Lister

- Add control for VRayLights type

#### VRayLightingAnalysis

- Implement VRayLightingAnalysis render element

## Modified Features

#### V-Ray

- Always use low thread priority in an interactive GUI session
- Change the default motion blur "Interval center" to 0.0
- Optimize object space bounding box calculation for meshes instances
- Submit to V-Ray Cloud dialog implements scene analysis for incompatible features
- Simplify code at key points by removing stale parts and avoid wasting time on branches
- Better render time estimation for progressive sampling
- Optimize the use of DR servers (early free servers at the end of a render so that they can join other jobs)
- Reduce the number of samples in the light cache
- Optimize intersection calculations with SIMD where possible
- Faster calculation of surface normals for 3D displacement
- Allow licenses with the server to be accessed through a network proxy
- Remove the "Show GI Only" option from the render settings as it's obsolete by the V-RayGlobalIllumination render element
- Print a warning if a node has different shadow and GI visibility flags as this causes artifacts with the adaptive dome light
- Fixed NaNs when sampling texmaps after Beta 1
- Remove the Photon Map GI engine from the UI
- Remove from UI the prepass and object-based multiple scattering options from V-RayFastSSS2
- Make the automatic switch to effectResult channel optional
- Update Alembic to 1.7.5
- Use Visual Studio 2017 builds for all versions of 3ds Max
- When rendering spherical cameras, the z-depth channel for deep OpenEXR images should be the distance from the camera
- Changes to the auto-exposure options should be updated during IPR
- Allow V-Ray to run with up to 1024 threads (up from 256)
- Hide the V-RayIlluminance render element, the new V-RayLightingAnalysis render element should be used instead
- Move the IPR options rollout to the V-Ray tab in the Render Setup and add a Start IPR button
- Remove from the V-Ray log the message about failing to load a "default" preset
- Reduce occurrence of "Invalid geometric normal" messages
- Show a dialog to confirm file overwriting with "Separate Render Channels"

## V-Ray GPU

- Expose the "Undersampling" parameter and make it adjustable during IPR
- Add support for basic UVW transformations for Bercon noise texture
- Add support for the "Keep continuity" option
- Add vendor information in the "C++/CPU" device type
- Enable QMC for CUDA CPU
- Gray-out texture button for direct illumination of the V-RayLightMtl material
- If there are no CUDA devices, "C++/CPU" should be used
- Improve GPU Light Linker memory efficiency
- Remove the warnings for non-physical features when exporting to a .vrscene
- Support for material IDs higher than 255 in the 3ds Max Multi/Sub-object material
- Faster V-RayDirt & rounded corners in some cases
- Support for V-RayDirt "Consider same object only"
- Better sampling of rectangle and mesh lights in some cases
- Better sampling of glossy materials
- Optimize GPU displacement/subdivision compile times
- Improve normal mapping in procedural maps
- Broadcast 3ds Max rendering notifications during production rendering
- Export Ormatix and HairFarm instances emitted by V-RayInstancer
- Remove ActiveShade rendering mode, IPR is to be used for interactive previews
- Support for camera movement in V-RayVelocity Render Element
- Improve animation export times
- Do not show render error messages forever
- Change defaults in V-Ray GPU in Max to 5000 samples and 0.01 noise threshold
- V-RayFur does not update in animation
- Scenes with unavailable network assets export very slow
- Add support for auto exposure and white balance when using the light cache
- Ignore light portals (use adaptive dome light instead)
- IPR reacts to objects and lights movement immediately instead of waiting for mouse button release
- Implemented motion blur support for GPU volumetrics

## V-RayInstancer

- Instances are rendered with the particle materials instead of the instanced geometry material
- Optimized instancing speed
- Ability to instance Ormatix and HairFarm objects

## V-RayFastSSS2

- Improve the sampling to reduce noise
- Remove from UI the prepass and object-based multiple scattering options

## V-RayProxy

- Alembic instances/objects to work with MultiSubTex random by instance id

## V-RayScene

- Add Lights support
- Possibility to use shader names with MtlMulti/GeomStaticMesh

#### VRayVolumeGrid

- Add warning message box when opening the deprecated AURA 1 caches
- Right-align the text in the Show File Name window so the file name can be seen if the text overflows
- Speed up and use less memory for Grid-Based Self-Shadowing of huge sparse OpenVDB grids
- Speed up Grid Smoothing of OpenVDB grids
- Speed up the Optimize Big Volumetric Grids pre-process of OpenVDB grids
- Ability to horizontally or vertically stretch and flip the selection in curve controls
- Implement stronger Approximate Scattering for brighter regions and lower scattering for the darker regions of the same volume
- Improve temperature interpolation using the Precise Tracing method
- Flickering when rendering Smoke Color based on a gradient with varying data range with Approximate Scattering
- Option to control the minimum visible voxel opacity for the volumetric shader
- Option to disable preview cache load during simulation or when not rendering
- Rename Cache Start to Cache Origin and Play Start to Timeline Origin
- Render negative Fire from caches imported from FumeFX
- Multi-threaded \*.aur cache import
- VRayVolumeGrid: Merged the OpenVDB DLL into the VRayVolumeGrid plugin
- Speed up rendering of scenes with VRayVolumeGrids in volumetric mode in 3ds Max
- Resolve environment variables in VRayVolumeGrid paths during rendering rather than during export
- Allow grid Channel Smoothing to be applied over channels with any value range
- Apply the Smoothing Random Variation over all voxels regardless of the Smooth Threshold
- Improve the loading speed of VDB files
- Optimize loading of caches containing Velocity channel
- Optimize the Preview Auto Range algorithm
- Speed up velocity sampling during volumetric motion blur

#### VFB

- Add "Image info" window for VFB history context menu
- Add Exposure Highlight Burn color correction to vfbControl (#sethighlightburn/#gethighlightburn)
- Add option to disable replacing # with frame numbers for separate render channels
- Export color corrections settings for .vrscenes
- Ability to load as background OpenEXR images with data window
- Auto-fit for A/B images with different resolutions
- Save 3ds Max scene path to history and add option to load the scene from the VFB history right-click context menu
- Support for gamma 2.2 color correction in the VFB history
- Switch the VFB to 3ds Max Qt instead of wxWidgets
- Using '#' in the name of separate render channels output file is now expanded to frame number

#### V-Ray Toolbar

- The hair material button creates VRayHairNextMtl;

#### V-Ray scene converter

- Convert Mental Ray Lighting Analysis render effect to VRayLightingAnalysis render element
- Enhanced Corona material and texmaps conversion
- Convert 3ds Max light meters to VRayLightMeter
- Add conversion from Autodesk Bitmap to VRayHDRI
- Fixed "Highlight glossiness" handling when converting to VRayMtl material
- Add option to convert cameras to V-Ray Physical camera
- Convert 3ds Max Light Meters to VRayLightMeter
- Support for some newly added Corona native materials and textures (CoronaHairMtl, CoronaSkinMtl, CoronaBitmap, CoronaDistance, CoronaRoundEdges, CoronaTriplanar)

#### .vrscene export

- Add export times for various scene objects (i.e. Nodes/Nodes' meshes/Materials/Texmaps)
- Export for VRayNoiseLevel render element
- Export the Cryptomatte render elements
- When exporting animations to vrscene and motion blur is OFF, export at exact frame times
- Show a floating progress bar during scene export

#### VRayHDRI

- Optimize memory usage for opaque and monochrome bitmaps (work in progress)

#### VRayMtl

- Faster rendering of glass materials with diffuse components

- Add "Compensate camera exposure" for Self-illumination
- Remove the highlight glossiness parameter and the lock button

#### VRayPhysicalCamera

- Reintroduce the V-Ray physical camera and update its UI
- Disable vignetting by default
- Reset to default values for the parameters when right-clicking on spinners

#### VRayDistanceTex

- Optimize both viewport preview and rendering speeds

#### VRayFur

- Add dynamic tessellation option
- Add "Ignore scale" option for hairs width according to scale
- Add "Lock to surface" option to keep the hair distribution to a specified frame

#### VRayGLSL/VRayOSL

- Change range of GLSL/OSL anisotropy rotation parameter of GGX BRDF
- Update OSL to 1.8

#### VRayIES

- Add option to specify the actual light power of the source, instead of using the prescribed power from the IES profile

#### VRayLight

- Change the Half-Length/Half-Width options to Length/Width for Plane light
- Improved adaptive dome light sampling

#### VRayMultiSubTex

- Add a random seed parameter
- Add option for the VRayMultiSubTex texture to cycle through the textures

#### VRayMDL

- Add support for "boolean" widgets
- Make widget types case-insensitive
- vMaterials autodetection
- Improve anisotropy precision

#### V-Ray .vrmat converter

- Add partial support for VRayLightMtl

#### ply2vrmesh.exe

- Skip @subdivGeometry and @displaced in vrsce files with and directly convert the linked static mesh
- Print more extensive bounding box information

#### vdnoise.exe

- Ability to denoise multiple render elements in a single pass
- Improved the GUI when started without parameters
- The denoiser tool should preserve metadata in the output file
- Ability to denoise four-component RGBA render elements
- Enable denoising for the VRayAlpha render element

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

- Unified installation paths, added versions to the shortcut names, updated environment variables names

#### VRayPluginNode

- Added export of the instantiated plugins for V-Ray GPU

VRaySimbiontMtl/VRaySkinMtl

- Removed from the UI

VRayOSL/VRayMDL

- Add shader fingerprint validation

img2tiledexr.exe

- Detect opaque or monochrome images in the img2tiledexr tool

VRayHairMtl2

- Add tint control for the primary, secondary and transmission components

VRayLightMeter

- Improve the calculation speed and quality

VRayScatterVolumeMtl

- Improved sampling

## Bug Fixes

V-Ray

- Adaptive dome light artifacts with "cast shadows" off
- Artifacts with adaptive dome light when rendering with V-Ray Standalone
- Crash with XYZ ANIMA meshes and VRayVelocity render element
- Embree crashes when building trees on machines with many cores
- Error while building Embree tree when moving VRayFur in IPR
- Exported scene from 3ds Max renders very slow in V-Ray Standalone due to excessive sampling of hairs
- Less than normal samples are calculated with Use camera path with Irradiance map GI engine
- Light Cache is about 3 times slower since V-Ray Next, Beta 2 compared to V-Ray 3.60 with transparent materials
- Overbright pixels (fireflies) with adaptive dome light
- Resumable rendering doesn't work correctly with adaptive dome lights and auto exposure
- The final info message in the VFB is "Hair and Fur" if you have Hair and Fur in the scene
- The output image vrayInfo/renderTime EXR attribute is not correct
- Standard materials don't render correctly when nested in other materials
- 3ds max Physical camera is not moving when MB samples are set to 2
- Caustics on motion-blurred objects may be blurred incorrectly
- Continuous reactivation of pixels at the end of the rendering with progressive sampling
- Crash after exporting .vrmesh with a frozen geometry for preview mesh
- Crash with matte objects, render elements and affect all channels for reflection
- Improve Light cache saving on network locations
- DR render client ignores server announcement broadcast when host is added as 127.0.0.1
- Embree generates artifacts in specific scenes
- Random Hair&Fur strands render with the diffuse color instead of the plugged gradient or gradient ramp in that slot
- Stuck render with one core at 100%
- Unhandled exception error when camera motion blur is enabled in specific scene
- Artifacts appear with irradiance map and light cache with adaptive dome light
- Auto exposure produces black output with small regions
- Changing the "Renderable" object property of an object is not updated in IPR
- Crash when calculating light cache in scenes with Forest Colour texture with multiple maps
- Crash when rendering a scene with matte reflections
- Crash when baking textures with Motion Blur
- Crash with XRef scenes and IP
- Displaced geometry normals are incorrect during light cache calculation
- Render to texture overrides elements with black outputs when disabled
- MAXScript auto-load script error with 3dsMax2018.4
- Noisy glossy refraction with BF\LC and Retrace turned on in the attached scene
- Physical camera exposure controls are applied when have V-Ray Physical camera with Exposure enabled
- RGBA elements in multichannel EXR files are not loaded properly
- Subimage name for "beauty" subimage in multipart EXR just an empty string, set to "rgba"
- Specific scene with relatively long faces renders slower with Embree
- The exit color for refraction is not working with old scenes
- Update GLSL shader examples to use the new style of passing uniform textures
- V-Ray Cloud submission dialog issues with HiDPI monitors
- Very high memory usage with out-of-process rendering on nearly empty scene
- VRayLightSelect produces black pixels with glossy materials with black fog color



- Fix an issue with the progressive image sampler when rendering extremely bright scene
- Arch&Design material inside a V-Ray2SidedMtl material renders black
- Build of Embree acceleration structures cannot be canceled
- Crash in IPR with V-RayMultiSubTex plugged in V-Ray2SidedMtl on V-RayInstancer instanced objects
- Crash with MultiTexture on V-RayLight
- Geometry with cloth simulator modifier causes crashes in some scenes
- Incorrect render elements in the deep output when using "By Render ID and Z-depth" merge mode
- Noisy render with adaptive dome light in specific scene
- Some files are inappropriately installed to 3ds Max folder in standalone render server installation
- The browse window for override material in Global switches opens twice
- The refraction color at distance combination of the Arch&Design material doesn't render
- V-RayProxy disappears when motion blur "Geometry samples" is set to 1

#### V-Ray Standalone

- Standalone: Lens effects from vrscene are not applied with -display=0 option
- Crashes with specific scene with MDL materials and Scanned materials

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

- 3ds Max crashes if Start IPR button is hit during render warmup
- Non-uniform scaled rectangle light emits in the wrong direction

#### V-Ray IPR

- Crash when modifying Multi/Sub-Object sub material on V-RayInstancer instanced objects
- Crash with V-RayDisplacementMod with texture map
- Not keeping the aspect ratio when Fit to VFB is enabled
- 3ds max crashes to desktop when V-RayScannedMtl is reloaded during IPR rendering
- Some crashes with V-RayVRmatMtl in certain scenarios with V-RayScene
- 3ds max crashes to desktop when V-RayScannedMtl is reloaded during IPR rendering
- Some crashes with V-RayVRmatMtl in certain scenarios with V-RayScene

#### V-Ray GPU

- A3ds Max UI becomes unresponsive after disabling VFB region rendering during IPR
- Adaptive lights render noisier a specific scene
- Artifacts with adaptive dome lights
- Artifacts with V-RayAerialPerspective in specific light setup
- Auto exposure's "Transfer to camera" button does not work
- Black outlines with refractive V-RayMtl and V-RayFastSSS2
- Bump is always tiled
- Color correction remap does not work properly
- Crash at every frame after the first one with environment map assigned both to the environment and a dome light
- Crash on calculating mip-map levels for missing bitmaps
- Crash when changing materials in V-RayOverrideMtl
- Crash when scrubbing the time slider due to material anisotropy
- Crash while resizing the VFB during IPR session
- Crash with a specific scene with V-RayClipper
- Crash with MultiSub material when deleting invisible to camera geometry during IPR
- Crash with specific V-RayProxy without normals and displacement
- Crash with V-RayEdgesTex in opacity slot in specific material setup
- Crash with V-RayFur with "Lock to surface" and "Ignore scale" enabled
- Custom output channels of Color Correction are not exported properly
- Different render of reflective material when Dome Light's "Cast shadows" is off
- Effects result is missing when saving through 3ds Max Output
- Extend stereoscopic rendering options (Eye distance, Focus method, Swap left/right, Follow VR headset)
- Forest Color is not working when used with only default color and no texmaps
- Inconsistent Forest Color randomization between DR slaves
- Incorrect fog color of V-RayEnvironmentFog when light's shadows are turned off
- Incorrect output FOV with Spherical panorama camera with overridden Vertical FOV in 3ds max 2019
- Instanced V-RayProxies with V-RayInstancer are missing in the first frame of V-Ray GPU production animation
- Occasional crash when working with Physical Camera in IPR session
- On-demand mip-mapped textures render with lower resolution on GPU when used in Bump, Displacement and Metalness
- Refraction with nested volumes is wrong
- Rendering differently spherical camera
- Scene loads slower compared to CPU
- The "\*" \_tex\_mult" parameters of the SettingsEnvironment plug-in are ignored
- The "RGB and alpha source" rollout settings in V-RayHDR1 are ignored
- The "Use roughness" option in V-RayMtl has no effect
- Unhandled exception when modifying one of the V-RayInstancer lists during IPR
- Unhandled exception when rendering with disabled VFB
- Unhandled exception with Particle flow and motion blur in a scene with zero vertices meshes
- Very small triangles disappear from the rendering
- V-RayDirt's "double sided" parameter is not working correctly
- V-RayScannedMtl is black during the mip-map on demand loading phase

- V-RayScannedMtl renders black in specific scene
- V-RayScannedMtl with triplanar mapping produces artifacts with specific geometry
- Wrong opacity with V-RayBlendMtl and V-Ray2SidedMtl
- "Visible to camera" does not work with volumetrics
- Remove "non-physical" warnings
- GPU CUDA AA Gaussian not matching CPU;
- Animatable parameters for V-RayGLSL, V-RayMDL and V-RayOSL
- Animated radius of sphere light is not exported for V-RayLight
- Artifacts in V-RayLighting render element with Aerial perspective and Highlight burn below 1.0
- Artifacts with denoiser and V-RayStochasticFlakesMtl
- Black color applied instead of diffuse when V-RayHDRI tag tiled image is not found
- CUDA error 716 on a scene with Velocity render element and spherical V-RayLight
- CUDA error 719 with specific scene with V-RayClipper
- Changing the verbose level of V-Ray log is evaluated only with launching a production render
- Crash with Bercon Noise in displacement with two or more devices
- Crash with mapped opacity and on-demand textures with 382 drivers
- Crash with on-demand textures
- Crash when hiding/unhiding geometry while rendering
- Crash when turning on and off a rect/mesh Light
- Crash when rendering backwards sequence
- Crash when tweaking values in Output
- Different rendering of some of the falloff types in Falloff Map
- Displacement is not disabled from the Global switches in production rendering mode
- Displacement subdivides the geometry more than it should when Physical camera is used
- Exception after moving a V-RayTriplanarTex with V-RayNormalMap from bump slot to another
- Exception with MultiTexture in V-RayLight
- Exposure is not updated when switching between cameras
- Flickering in animation with 3ds Max animated Noise modifier
- Material fog bias with ActiveShade rendering
- Memory leaks with animation and geometry with modifiers
- Missing reflections on V-RayBlendMtl with reflective base material, non-reflective coat material and additive mode
- NaNs in Light select render element when using Light cache
- Out-of-process rendering crashes with simple scenes loaded in the V-RayScene node
- Parented lights in groups don't work in V-RayLightSelect render element
- Problems with Fit resolution to VFB and changing the Max resolution during ActiveShade
- Scene with particles crashes when scrubbing the time slider during ActiveShade
- The viewport representation of Body objects (CAD) is rendered during ActiveShade
- Unhandled exception when rendering a sequence with a V-RayVRmatMtl
- UV tiling breaks if there is Output node between V-RayHDRI and V-RayColor2Bump
- V-RayDirt "affect alpha" option not supported
- V-RayMDL is not updated in ActiveShade when the file in attached V-RayHDRI is changed
- V-RayMDL is rendered black out-of-process
- V-RayMtl opacity not working with image sequence
- V-RayStereoscopic helper is not working
- V-RayTriplanarTex for bump doesn't respect UVW scale
- Wrong result with V-RayStereoscopic camera when Override FOV is enabled
- Wrong anisotropy effect in specific scene
- Wrong progress information for Light cache calculation
- Additional bump through V-RayBumpMtl is not working with V-RayScannedMtl
- Alpha values above 1 with V-RayEnvironmentFog and Dome V-RayLight (affect alpha)
- Artifacts with scaled V-RayLight
- Bug with alpha channel on VRScan displacement
- Crash in specific scene with complex material setup
- Crash on the second render with specific scene with mip-mapped textures
- Crash with subdivision displacement
- Crashes with V-RayFur with motion blur
- Crash when Hair Texture uses "Distance Along Strand Absolute" with V-Ray Fur
- Crash when resizing the VFB in IPR hybrid rendering mode
- Crash with V-RayMultiSubTex with Gradient Ramp
- Crash when copying displaced geometry
- Crash with a heavy scene
- Directional double-sided V-RayLights light distribution is not even with V-RayEnvironmentFog
- Difference when rendering V-RayBlendMtl with Additive (shellac) mode enabled
- Different render of V-RayNormalMap
- Export for EXR settings (Option RE)
- Investigate an issue with GPU Displacement in a specific scene
- Memory leak with animation and geometry with modifiers
- Missing reflections on refractive V-RayMtl with fog color different than (255, 255, 255) and V-RayEnvironmentFog gizmo
- Multi/Sub-object material applied to Node with hairs renders black
- Object is rendered grey, without applied material
- Production render sequence output is saved twice
- Reduce V-RayProxy print SD tree info in the log based on the verbosity level
- Tiling factor of V-RayScannedMtl is not respected
- Unhandled exception with specific V-RayVRmatMtls
- V-Ray exposure control is not working with Physical Camera
- V-RayEnvironmentFog doesn't render properly in GPU when scatter GI is used
- Wrong shadows in a scene with proxies with transparent materials
- Adaptive dome light seems to render darker and slower in specific scene
- Changing the render resolution during GPU IPR does not work

- Crash during rendering with cloth and empty V-RayDisplacementMod modifiers and motion blur
- Crash with instanced HairFarm object during IPR
- Difference in exposure between the first frame and the others with custom camera aperture
- Do not export disabled V-RayClippers
- Exception with Hair&Fur modifier
- Fog color is ignored when "affect shadows" option of V-RayEnvironmentFog is off
- High values for water level in V-RayDisplacement cause crash
- Incorrect render of V-RayScannedMtl with V-RayReflection render element
- Incorrect values set for "Rays per pixel" and "Rays bundle size" parameters when spinner is right-clicked
- Incorrect V-RayAtmosphere render element when fog emission color is different than default black color
- Missing OpenVR/Oculus VR preview modes
- On-demand mip-mapped textures render with lower resolution
- Render mask texture button is not working properly with drag and drop
- V-RayScannedMtl materials with height map render incorrect
- Wrong reflection glossiness with MultiTexture

#### V-RayDenoiser

- "Update" button is not working as expected during IPR
- V-RayDenoiser/vdenoise.exe: Denoising produces blurry artifacts when threshold is set to 0.0

#### V-RayFastSSS2

- Material in Raytraced (refractive) mode is lit by excluded V-Ray light with Cast Shadow disabled
- Parameters are not updated in the UI lately when color mode is set to "Scatter coefficient + Fog color"

#### V-RayGLSL

- "vr\_Position" returns wrong results
- Wrong normals in GLSL shaders
- Wrong shadow calculation when used as opacity map;
- Blurred textures with scaled UV coordinates with V-Ray GPU
- Enabling and then disabling the Quick Shader disables the preview of the material and makes it render black
- Parameters without loaded values in a specific scene cause crash with V-Ray GPU

#### V-RayHairNextMtl

- NaN pixels caused by negative value for the diffuse amount parameter
- Randomization dye hue parameter renders differently with V-Ray GPU
- The subdivs parameter should be dimmed when "Use local subdivs" is disabled in the Global DMC settings

#### V-RayInstancer

- Wrong instances rotations with PRT source particles
- Add support for objects with Ormatix/Hairfarm hairs
- Different instances rotations with PRT Source objects for source particles
- Wrong particles animation when .vrscene is exported with frame range
- Crash with Krakatoa particles

#### V-RayLightMeter

- Missing text ("Error" instead of "Error tolerance") in the UI for 3ds Max 2016 and older versions
- Wrong results for very small grid sizes

#### V-RayLightSelect

- Fix artifacts in with adaptive dome light when mode is different from "Full"

#### V-RayOptionRE

- Add "Whole image" ability to the "exr data window" option to save the whole image even if a region is rendered
- No OpenEXR extra metadata is written

#### V-RayOSL

- OSL shading system leaks memory
- The 'camera:fov' OSL attribute must be in degrees
- V-RayOSLTex crashes if attached to V-RayEnvironmentFog
- Crash with unsupported OSL widgets for certain types of tweaks
- Maps unlink from OSL nodes when scene and its local assets are moved together to another location

#### V-RayPluginNode

- Using in IPR may leave render license engaged
- Crash when changing Plugin type while rendering with V-Ray GPU

#### VRayProxy

- Preview cache is not cleared when override is specified
- Crash when loading a file after the preview cache had been enabled and 3ds Max was reset
- Hair and particles are not displayed in viewport after their preview is cached
- Reads mesh files even when they are cached
- Viewport preview is not affected when a new scale factor is set after the preview has already been cached
- Modifying the Alembic mesh Start path should update the proxy preview cache

#### VRaySoftBox

- Gradients UI controls are not working since V-Ray Next, Beta 2

#### VRayVolumeGrid

- Enabling GI has no effect with "Disabled" scattering on volumes with V-Ray GPU
- Even when there aren't active render elements warnings appear in the V-Ray messages
- Incorrect motion blur on moving grid with a static or moving camera locked to it with V-Ray GPU
- Incorrect render result due to Channel Smoothing option set to Temperature with V-Ray GPU
- Light Cache renders differently on GPU compared to CPU in Volumetric Geometry mode
- Shadow Strength parameter doesn't work with scattering set to "Ray-traced" with V-Ray GPU
- The VRayVelocity render element is not rendered in Volumetric Geometry mode if Motion Blur is off
- Wrong render of VDB caches which have a background value outside the tree min-max range
- "fire\_opacity\_mode" parameter isn't exported to vrscenes
- After loading a cache, CPU usage remains high on machines with many threads
- Artifacts when rendering overlapping containers in Volumetric Geometry mode
- Crash when rendering a simulator without a cache with Velocity render element enabled
- Crash when rendering in Mesh mode with Surface channel set to Texture
- Crash when rendering converted grid to Editable poly
- Crash when Rendering->Surface Channel is set to Texture and Mesh Preview is enabled
- Errors when saving and loading presets
- Frame offset in Loop mode between Phoenix and V-Ray Volume grid
- Keyed Playback Mode parameter doesn't render as expected during sequence render
- Loop overlap only works when load nearest if missing is enabled
- Sequence render with V-Ray and Fire Lights keeps showing the lights after the cache sequence ends
- Missing RGB for Liquids on some frames when using Play Speed less than 1.0 and the Velocity method
- No confirmation box when overwriting presets
- Warning about using local machine Input path for distributed rendering even if the path is UNC but starts with forward slashes
- Crash after using Make unique operation on VRayVolumeGrid instances
- Crash on render after deleting an instance
- Crash when cloning (shift + click with the move tool)
- Crash when setting a VRayVolumeGrid as a Clipper mesh
- No scene shadows if Visible to Camera is disabled in Volumetric Geometry mode
- Fire/Smoke in Volumetric Geometry mode does not render at all when Min Visible Opacity is set to 0.0
- Alpha Channel and Smoke Opacity aren't correct when rendering volumetric with V-Ray GPU
- Can't load OpenVDB files whose "file\_voxel\_count" metadata is 0, though they contain active voxels
- Fire Opacity multiplier is not taken into account in V-Ray GPU
- Light cache computation with enabled Probabilistic Volumetrics is slower compared to V-Ray CPU
- Minimum Visible Opacity does not work with V-Ray GPU
- Rendering a sequence with several VRayVolumeGrid instances with V-Ray GPU shows only one of them after the first frame
- Rendering fire in Own Opacity mode with Smoke Color Disabled on V-Ray GPU does not match V-Ray's
- Volumes that contain the render camera aren't visible with V-Ray GPU
- Wrong velocity direction and motion blur with OpenVDB files from FumeFX
- Wrong velocity scale when importing OpenVDB files from Maya Fluids

#### VFB

- 3ds Max crashes when copying an image from VFB to the clipboard and then copying text from Layer/Scene explorer
- Image shifts one pixel up/down when dragging the separator line during horizontal A/B compare
- Using the drop-down channels list causes crash when rendering with disabled memory frame buffer, but with raw output preview enabled
- A/B comparison distorts the images when panning
- Inconsistent message when the History Directory path is empty
- Occasional crash when closing 3ds Max with VFB A/B compare enabled
- Crash when opening certain EXR images with ROI
- If the scene name is too long to fit in History Details, all other lines of text are not displayed
- V-Ray GPU rendering statistics appear skewed after render stop
- Bucket rendering with extreme downsizing does not fill the whole image in the buffer
- Crash when loading scene from VFB History
- Qt VFB (3ds Max 2018 and up) has issue with numeric characters

#### .vrscene exporter

- Composite texture with layers with no texture attached produces invalid vrs scene files
- Default values for settings are now exported if neither V-Ray nor V-Ray GPU is selected as the current renderer
- The correct V-Ray Standalone version is now selected for "Export and render"
- The opacity mode of V-RayMtl is now exported

#### V-Ray Bitmap to V-RayHDR converter

- Tiled EXR conversion tool (img2tiledexr.exe) discovery error

#### V-Ray scene converter

- Some camera settings are not transferred when converting Standard Camera to Max PhysicalCamera or V-RayPhysical camera

#### V-Ray Toolbar

- 3ds Max crashes when creating a mesh lights from grouped objects

#### vdnoise.exe

- The denoiser tool doesn't preserve the pixel aspect
- Crash if an incomplete or broken file is passed
- The denoiser tool crashes when the input images are non OpenEXR or vrmg
- Resize the denoiser window on denoising to match the screen resolution

#### V-RayClipper

- Clipping geometry shows up with ambient occlusion
- Wrong lighting for Fur objects inside clipped geometry

#### V-RayDisplacementMod

- Broken geometry edges at UV-borders
- Crash when rendering animation with subdivision displacement

#### V-RayLight

- Mesh light does not respect geometry flipping in V-Ray GPU
- Plane type light from X-Ref scene saved with earlier version is loaded half size after Beta 1
- Negatively scaled disc lights emit in both directions with Double-sided disabled

#### V-RayLightMtl

- Direct illumination enabled doesn't produce correct results when illuminating Standard material

#### V-RayMtl

- Crash with enabled Abbe number and Full mode V-RayLightSelect
- Fog color is ignored if V-RayDisplacementMod is present

#### V-RayMDL

- MDL assets are not transferred to DR slaves
- Message boxes are shown in quiet mode
- Subsurface absorption issues
- Crash when rendering with full light select
- Blurred textures with scaled UV coordinates
- Rendering very bright with reduced ray depth

#### V-RayScannedMtl

- Artifacts when rendering with Light cache on specific scene
- All maps (paint, filter, ior, etc.) are not affected by the parallax displacement
- Constant increase of the consumed memory during the rendering of certain material
- Crash when using UV adjustment with certain object
- Edge displacement appears inclined when the UV tiling multipliers do not match exactly the sample aspect
- Edge displacement does not produce equal result in all ray directions
- Geometry with smooth or shell modifier produces holes behind the displaced edges
- Renders black when seen through the translucency texmap of V-Ray2SidedMtl
- Viewport preview of the VRScan does not match the render
- VRScans materials slow down the viewport animation
- When no UV mapping is present, the light cache cannot sample the material

- Environment and effects exposure control has effect even when not Active
- Remove Subdivision parameter
- Disable the UI parameters that are not working in V-Ray GPU when set as current renderer

#### V-RayToon

- Is always applied on V-RayLights
- Crash with third-party geometry plugins
- V-Ray Toon line disappears with big FOV camera values

#### V-Ray Light Lister

- Disable subdivisions of the lights when Use Local subdivs is unticked

#### ply2vrmesh.exe

- Crash with specific nodes from vrscenes with applying both velocity and transformations
- .ply files from ZBrush do not convert correctly

#### V-Ray GPU CUDA

- The Distance Blend mode of the V-RayFalloff texture doesn't work

#### V-RayDirt

- Excluded object affects rendering of objects with inverted normals after Beta 1

#### V-RayFur

- Crash with enabled tessellation and motion blur
- Crash if fur is applied to non-geometry objects

#### V-RayHairMtl2

- Very slow rendering of hairs with opacity
- Hair renders darker when the light cache is enabled

#### V-RayHDRI

- Color bleeding on the UV space edges with disabled tiling

#### V-RayPhysicalCamera

- Automatic vertical tilt is not updated during animation
- Environment and effects exposure control has effect even when not Active
- Lens file distortion is not working

#### V-RaySwitchMtl

- Mismatching material indices
- Incorrect width of the parameters rollout on high DPI displays

#### .vrscene export

- Improve file write times
- Geometry animation is not exported when Geometry samples are set to 1

#### vrimg2exr.exe

- Option -info does not print "V-Ray information" data

#### V-Ray GPU CUDA

- Crash when lights are turned off and back on during IPR

#### V-RayDistanceTex

- The texture for the distance parameter of V-RayDistanceTex overrides the distance value

VRayEnvironmentFog

- Crash with animation in specific scene

VRayMtlSelect

- Render element is not correct when rendering deep images