RenderMan 25.1

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Welcome to RenderMan 25.1

RenderMan version 25.1 builds on RenderMan 25.0, which provided major upgrades to look development and batch rendering, with many tools that improve artist workflows and complement the creative process. This release provides you with bug fixes and minor enhancements.

Please see the RenderMan 25.0 Release Notes for all of the new features and known limitations of RenderMan 25.0.

Minor Enhancements and Fixes

RIS and XPU

- Patterns: Allow PxrPrimvar to better constant fold space transformations, giving better performance in RIS and better correctness in XPU. RMAN-20486
- Statistics: Built-in listeners for stats will now expand environment variables for file names found in the stats.ini configuration file. RMAN-18328
- Pipeline: RenderMan now supports Python 3.10. RMAN-20003
- macOS: The new RenderMan 25.0 license server is now available. RMAN-20602

RIS

- BxDFs: LamaSurface: added a parameter to allow the user to enable presence/opacity caching. PRMAN-2716
- BxDFs: LamaIridescence incidentAngle_Interpolation and targetHue_Interpolation can now be specified with a minimum of two knots in the spline, or a constant value, making it better behaved in Maya. RMAN-20432
- BxDFs: An error in the "followTopology" values for PxrSurface diffusion subsurface scattering has been fixed. The error occured when "subsurfaceType" was 0--3 and "numSubsurfaceSamples" greater than 1. RMAN-20496
- Geometry: Curve minwidth is now able to expand curve widths to achieve the requested screen-space size without restriction. Previously the width multiplier was arbitrarily limited to a maximum of 4x. PRMAN-2730
- Geometry: If you were rendering from RIB, Attribute "dice" "offscreendicingstrategy" ["instanceprojection"] was incorrectly ignored. RMAN-20290
- Geometry: We have restored the spherical projection dicing oracle to the renderer after a long absence. The spherical projection dicing oracle will ignore all offscreen dicing controls and will not suddenly change behavior when an instance moves offscreen; however, its projection also avoids overdicing geometry near the camera. Thus, this oracle may be helpful as the primary dicing strategy when used with the camera flying through multiply instanced geometry. When used this way, it strikes a balance between memory consumption and minimizing dicing artifacts ("popping") as the renderer switches between reference instances. RMAN-20350
- Geometry: RiPoints tracing has been rewritten to correctly combine translucency from the various sources available: shaded presence/opacity, point falloff and the Os primvar. Previously the nonshaded sources of translucency would not be correctly combined with the shaded sources leading to strange results. As part of this change, presence/opacity caching support has been added to the RiPoints primitive. If caching is

enabled a single value will be used for each point. This change also introduces a new interpretation of presence for RiPoints which works similarly to compositing alpha. This should lead to more predictable and user-friendly results than previously, but also leads to points appearing to be more translucent for a given presence level. As a result, to avoid existing content from needing to be reshaded, a render option has been added which will revert to the old approach. This option (Option "shade" "int incorrectPointOpacityCalculation" [1]) will be active for the duration of R25, after which only the new approach will be available. PRMAN-2589
- Ray Tracing: Better performance on Windows on high-core count machines when initializing our ray tracing data structures. RMAN-20446

XPU

- Denoiser, LPEs/AOVs: XPU now produces the necessary outputs for full denoising quality and compatibility. This matches RIS standards.
    - The sampleCount AOV was previously misnamed. RMAN-19904
    - Support multi-frame denoising by adding support for a correct value for the built-in variable "dPdtime" to OSL when the position is changing over time, and also add support for "dPdtime", "motionFore" and "motionBack" motion vector AOV outputs. RMAN-20456
- LPEs/AOVs: If you output the same LPE into two display outputs, XPU will now output them properly. Previously you would get black. RMAN-19904
- LPEs/AOVs: Fixed a case that would cause the albedo AOV to sometimes output black. RMAN-20605
- Volumes: Volumes with colored extinction now render properly. RMAN-20125
- Volumes: XPU is much better behaved if the camera is placed in the volume – much less memory is consumed. RMAN-20627
- Volumes: The convergence of thin homogeneous volumes in XPU has been greatly improved and is now on par with RIS. RMAN-20100
- Volumes: XPU now supports Attribute "dice" "minlength" and "minlengthspace" for volumes. RMAN-20180
- Volumes: XPU performance has been improved for dsominmax 0 volumes. RMAN-20180
- BxDFs: Fixed very rare case where with subsurface rendering, it was possible to get a difference between the CPU and GPU. RMAN-20515
- Geometry: XPU was previously underdicing geometry depending on the aspect ratio, which would manifest as lower-resolution displacement than expected. RMAN-18834
- Geometry: XPU now supports non-raster oriented dicing. RMAN-19162
- Removed unnecessary warnings if XPU is rendering multiple frames. RMAN-20634

Denoiser

- XPU now fully supports the denoiser. RMAN-19904, RMAN-20456
- Support for denoising arbitrary AOVs. added --diffuse, --specular, --albedo, --irradiance and --alpha arguments to denoise_batch. This allows a user to pass a comma separate list of channels to be mapped to one of the aux outputs. RMAN-20611
- Fixed a problem that would cause the denoiser to fail if your images had a resolution width or height that was an even power of two. RMAN-20612
- Preferences are now written to the .pixarPrefs directory within your home directory instead of directly to your home directory. RMAN-20657
- denoise_batch can now take a --frame-include and --frame-exclude options. These allow the user to specify which specific frames should be denoised. This is useful for crossframe denoising, where you don't necessarily want to denoise the entire sequence in a single command. RMAN-20579
- Fix issue with --output option creating the wrong output directory. We weren't handling the case where we were given a relative path. RMAN-20656

Stylized Looks

- Simplifying AOV names within all DCCs:
    - NPRlineMask NPRmask
    - NPRtoonDiffRamp NPRtoonOut
    - NPRhatchOut (new)
    - NPRallLines NPRlineOut
    - NPRallLinesAlpha NPRlineOutAlpha
- Enhancements to PxrStylizedControl:
    - AOV updates
    - UI organization
- Enhancements to PxrStylizedHatching:
    - Camera Range moved from checkbox to Signal dropdown
    - New Signal dropdown with presets
- Enhancements to PxrStylizedLines:
    - Compositing modes rework: on any previous layer (beauty or Stylized) as opposed to only Lines AOV
    - New compositing mode: Screen functionality
    - New Signal dropdown with presets

All Bridge Products

- Fixed a bug where user's PYTHONPATH could cause denoise_batch to fail. RMAN-20518
- Volumes may have previously rendered with an incorrect bounding box if multiple grids were present, causing the volume to get cut off. This has been fixed by relying on the renderer to compute the bounding boxes instead of the bridge products. RMAN-20523, RMAN-20522, RMAN-20524, RMAN-20525
- vdb bounding volume calculated by renderer instead of rfm (which could incorrectly use the wrong bbox when multiple grids are involved)
- XPU now responds to rapid light edits more quickly than before. RMAN-20591

RenderMan for Houdini

- Solaris: RenderMan now respects the thread settings in husk. RMAN-16592
- Solaris: "light group" and "visible in refraction" ligth attibutes now correctly working. RMAN-20589
- Solaris: If you are using a Shutter of 0.0, 0.0 (for example, to turn off motion blur), XPU will now render properly. RMAN-20621
- Fixed a problem that would cause Stylized Looks to crash within Houdini. RMAN-20661
- If you were using XPU to render to "it" and resized the display window, XPU would have crashed. This is now fixed. RMAN-20237

- When rendering interactively in Houdini, XPU would not render in-memory volumes. This is now fixed. RMAN-20780

RenderMan for Katana

- Issues seen when performing ROI edits (particularly shrinking a crop window) during a Live Render session in RfK (including crashes and wrong renders) have been fixed. RMAN-20580
- Fixed issue that prevented usd lights from rendering in RenderMan Hydra delegate in Katana 6. RMAN-20323
- Fixed a crash that could happen when switching between RenderMan Hydra delegates in Katana. RMAN-20324
- Issues seen when performing ROI edits during a Live Render session in RfK (including crashes and wrong renders) have been fixed. RMAN-20580

RenderMan for Maya

- A bug that caused textures to not update sometimes during IPR when the source image was changed has been fixed. RMAN-20377
- IES profile swatches will now render so that you can see what the IES profile looks like. RMAN-20378
- Fixed an issue where "it" and LocalQueue were failing to launch from Maya 2023. RMAN-20183
- Fixed a bug where exporting rib archives to a directory with spaces in the name would fail. RMAN-20517
- Provide better layout hints to the Maya Hypershade window for LamaGeneralizedSchlick, LamaIridescence, LamaLPE, PxrBlenderPrincipledInputs, PxrColorSpace, PxrRGBToNg, PxrSetRange, PxrSplineMap. RMAN-20584

RenderMan for Blender

- Blender 3.1 to 3.5 are now officially supported
- Support for 2.83 has been dropped. The minimum version supported is 2.93.

Bug Fixes:

- Fixed an issue with UV maps not working correctly with geometry nodes instances
- Fixed a bug that prevented PxrVariable from working in a shading network
- Fixed bugs that prevented the use of color to float, or float to color connections from working
- Fixed a bug where the PxrStylizedControl pattern node was not getting correctly added when using the Stylized Looks UI