

# RenderMan 22.7

## Welcome to RenderMan 22.7!

Welcome to RenderMan 22.7. This release introduces improvements to the previous RenderMan.

Please dive right into the release notes below for more detailed information on the latest version of your favorite renderer!

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### New Features

- PxrSurface has a new parameter "float glassRefractionRoughness". If specified, this roughness is used for glass refraction while the regular "glassRoughness" is used for reflections. If not specified, the regular "glassRoughness" is used for both reflection and refraction, this is not layerable in this version

### Miscellaneous Changes

- RiPoints
  - Spherical RiPoints using pointfalloff now have better lighting behavior when it comes to interpenetrating spheres. The calculation when the ray origin is inside a sphere has been amended to provide a more predictable lighting result
- PxrRemap: inputMin and inputMax no longer enforce hard value limits
- Increased the maximum capacity of the curves BVH, which is now at about 2 billion curve segments per single curves primitive
- PxrUnified now supports Attribute "trace" "diffusedepth" and "speculardepth". Unlike PxrPathTracer, this behavior is opt-in only and must be enabled by setting the new integrator parameter "useTraceDepth" to 1

### Fixes

- Fixed an intermittent crash when linear curves which had varying opacity were used
- Fixed a regression in PxrVary that could make the renderer crash
- Fixed a potential crash when geometry deformation sample times are different from the shutter time
- Fixed UDIMs with extra filepath separators
- A bug that caused EXR displays that were dirmapped to fail to render has been addressed
- A bug that caused checkpointing to fail on Windows has been fixed
- Fixed a rare bug where the renderer could crash during expansion of procedurals if the procedural had an invalid transformation matrix
- Fixed a rare memory corruption when freeing geometry buffers. The corruption was manifesting as a crash during rendering startup or at completion
- Fixed a regression that prevented projection plug-ins from accessing textures at CreateInstanceData time
- Fix an issue with INFs (infinite or not a number) appearing in deep output of volumes
- Fixed RixTransform bug when calculating to/from world space matrix from RiProcedurals
- Add "Coordinate system memory" to gpriem stats
- Fixed a bug that could cause large memory spikes with light learning
- OSL
  - OSL will no longer complain about missing coordinate systems in the log, you must now check your return values in shaders instead
  - Fixed a bug preventing access to string attributes from OSL
  - Fix potential crash when using getattribute("rendererinfo") in OSL SIMD mode

### Interactive/Live Rendering Limitations

- Crop window edits are restricted to fall inside the original crop window

### RenderMan Pro Server Limitations

- PxrUnified integrator does not yet support all the standard rendering features
- We do not read point data from OpenVDB files
- PxrSurface back diffuse color is not output to the albedo color AOV
- Analytical lights placed inside volumes may yield artifacts when made visible to the camera. As a work around, the light camera visibility should be turned off, and a geometry with a similar shape should be used (visible to camera, invisible to transmission and indirect rays), with the proper emissive bxdf
- Using the '.' character in the handle for an OSL shader could cause unpredictable results during re-rendering
- Per-Instance baking is not supported, only the reference instance
- 3d baking: no direct bake-to-ptex support
- PxrBakePointCloud cannot directly render ptex
- Sample/Display filter plug-ins do not have access to lighting services for light dependent effects, e.g. lens flare
- Adding a new mesh light on existing geometry during IPR results in double geometry
- Motion blurred geometry does not motion blur normals when deformed
- When attempting to access an array primvar, you must first check the size of the array primvar and allocate the appropriate space. Not doing so may lead to a crash
- Points and curves cannot be used as geometric (mesh) lights

- Deformation motion blurred volumes don't currently work with `densityFloatPrimVar` or `densityColorPrimVar`. You will need to use a `PxrPrimVar` node connected to `densityFloat` and `densityColor` instead



The Centos KDE style "Oxygen" installs a version of Qt and sets the user's environment variable `QT_PLUGIN_PATH` forcing "it" and `LocalQueue` to attempt to load an incompatible Qt library. Either avoid installing the Oxygen theme or unset `QT_PLUGIN_PATH` before running "it" or `LocalQueue`. Other KDE styles may also install this theme.