

5.3.1.0

May 22nd, 2019

Enhancements

- **Faster GPU cache pre-population:** The optional GPU cache pre-population step is now faster. On a 56-logical core machine it is now 3x faster. (#8229, #8235, #8241)
- **Faster GPU IPR with high sample counts:** Rendering with a high adaptive sampling max AA, or high AA will no longer incur an interactivity hit when in GPU IPR. (#8214)
- **License State Metadata:** Rendered files now include a string metadata field `arnold/license_state` set to `valid` if a license was available, and to `invalid` otherwise. This can be used to detect watermarked renders due to transient license server failures when `option s.abort_on_license_fail` is `false`. (#6140)
- **Improved uv_projection shader:** The `matrix` parameter is now linkable (#8339), when `Pref` is not available the shader falls back to world coordinates (#8330), added `clamp` and `default_color` parameters. (#8338)
- **Improved ramp_rgb and ramp_float shaders:** Added a `wrap_uv` parameter. (#8322, #8325)

API additions

- **GPU cache pre-population time estimate:** `AiGPUCachePopulateRemainingSeconds()` can be used to get an estimate of how many more seconds the GPU cache pre-population will take. (#8225)

Incompatible changes

- **NVIDIA driver requirements:** GPU rendering now requires NVIDIA driver **418.56** or higher on Linux and **419.67** or higher on Windows. (#8257)
- **Shaderless volumes:** Volumes with no shader assigned now render constant white instead of constant 50% grey. (#8268)

Bug fixes

- #7819 IPR API not properly blocking
- #8260 GPU cache written to the wrong location if user name has unicode chars
- #8274 Slowdown with many operators
- #6979 Incorrect shader assignment with `make_instance` enabled on Alembic procedural
- #7981 Wrong output from `aov_write` shader when connected to `layer_shader`
- #8157 Black pixels artifacts at various resolutions on GPU
- #8196 Improve `ignore_textures` support on GPU
- #8265 Volume artifacts with `light_groups` and `deep_exr` driver
- #8296 Append mode broken for deep images
- #8299 Emissive volumes render incorrectly on GPU
- #8300 Crash, hang, or other errors when using more than `AA=127` samples
- #8305 Clarify in documentation that `AiOcclusion` spread is in radians
- #8318 Noise crashes when no metadata is found
- #8321 Error loading some photometric IES files
- #8328 Noise: crash with different data windows per frame
- #8340 Crash when disabling a procedural linked to an `include_graph`
- #8352 Call `post_cook` on included and child operators
- #8362 Remove warning complaining about mismatched OptiX 6.1 version
- #8389 OptiX version 0.0.0 error instead of out-of-date driver error
- #8403 Alembic geometry loses shader on frame change
- #7851 GPU volumetrics: bug when `step_size` is non-zero on a shape without a volume shader
- #8065 GPU volumetrics: self-hit logic bug
- #8249 GPU image node: support linking and `env-var` substitution for filename parameter
- #8329 Raycount and `cputime` AOVs broken on GPU