

4.1.3.5

Milestone 4.1.3

April 10, 2014

Enhancements

- **Faster AiPerlin4:** The 4-dimensional Perlin noise function AiPerlin4() is now about 1.5x faster. (#3777)
- **Faster bump3d:** The bump3d shader now makes 25% fewer shader evaluations, which can reduce render times specially when using expensive procedural maps. (#3804)
- **Faster lights:** Non-motion blurred lights are now a few percent faster to render, specially in scenes with many lights. (#3791, #3792)
- **Reduced per-object memory overhead:** Ray accel structs now consume a few hundred KBs less memory, which can add up to hundreds of MBs saved in scenes with thousands of objects. We also lowered peak memory used in certain situations. (#3772, #3778, #3783)
- **overlay_mode in utility shader:** We have added a new overlay_mode parameter to the utility shader which allows you do overlay wireframe on top of the regular color and shading modes. This can be set in the kick command-line with the -om command. (#3800)

Incompatible changes

- **Behavior of standard.specular_rotation changed:** The specular_rotation parameter in the standard shader will now continuously rotate in the same direction when provided values outside of the [0,1] range instead of switching direction. (#3786)
- **objwire utility mode removed:** With the new overlay_mode, the objwire color mode in the utility shader is now redundant. The same result can be achieved with -cm obj -om polywire. (#3800)
- **Hardcoded name of options node:** The name attribute of the options node is now hardcoded to the string "options" and cannot be redefined. Calls to AiNodeSetStr(AiUniverseGetOptions()),("name", "foo") will not have any effect. (#3817)
- **Removed shader_timing_stats:** The global option shader_timing_stats which was used to report fine-grained timings of certain shading operations has been removed. The accompanying diagnostics AOV "texturetime" has also been removed. This both removes a bit of overhead and simplifies the internal logic. (#3818)

Bug fixes

Ticket	Summary	Component	Owner	Priority	Version	Created
#3781	peak memory not properly captured	arnold	thiago	major	4.1	4 months
#3782	corrupted render region output in the X11 kick driver	kick	ramon	major	4.1	4 months
#3784	AiShaderGlobalsGetTriangle crashes with displacement in free mode	arnold	ramon	major	4.1	4 months
#3785	AiRadiance texture coordinates	arnold	ramon	major	4.1	4 months
#3786	specular_rotation parameter in standard shader misbehaving outside of [0,1] range	arnold	alan	major	4.1	4 months
#3788	NaNs with light_blocker	arnold	ramon	major	4.1	4 months
#3789	crash in bump3d used in object space	arnold	ramon	major	4.1	4 months
#3798	static non-invertible matrix transform crashes	arnold	thiago	major	4.1	4 months
#3803	curved motion blur not numerically precise	arnold	thiago	major	4.1	4 months
#3806	fast_exp symbol is stripped from os x opt build	arnold	thiago	major	4.1	4 months
#3809	matrix-transformed cylinder and disk lights broken with 1 motion key	arnold	alan	major	4.1	4 months
#3810	Memory leak in AiNodeEntryInstall	arnold	angel	major	4.1	4 months
#3811	AiNoise reports warning when using distortion	arnold	thiago	major	4.1	4 months
#3812	Don't compute importance tables for disabled lights	arnold	mike	major	4.1	4 months
#3816	Crash when interrupting render during BVH build with more than 2 motion keys	arnold	mike	major	4.1	4 months
#3817	hardcode options node's name to "options"	arnold	marcos	major	4.1	4 months
#3799	Memory leak on NURBS node	arnold	angel	minor	4.1	4 months

Ticket	Summary	Keywords	Component	Owner	Priority	Milestone
#3370	broken motion_vector AOV in objects with deform keys and ignore_motion_blur	4.1.3.1	arnold	thiago	major	4.1.4
#3825	Missing referenced disp shader causes mesh to disappear	4.1.3.1	arnold	mike	major	4.1.4
#3830	ignore_motion_blur not removing extra keys	4.1.3.1	arnold	thiago	major	4.1.4

Ticket	Summary	Keywords	Component	Owner	Priority	Milestone
#3840	curved motion blur is sometimes using a slightly off rotation	4.1.3.2	arnold	thiago	major	4.1.4
#3841	linking quad_light.color to a shader not working with multiple lights	4.1.3.2	arnold	angel	major	4.1.4

Ticket	Summary	Keywords	Component	Owner	Priority	Milestone
#3866	crash with multiple texture-mapped quad area lights	4.1.3.3	arnold	angel	critical	4.1.4
#3766	Deep EXR driver is missing a ZBack channel for Nuke compatibility	MPC DWA 4.1.3.3	arnold	ramon	major	4.1.4
#3854	Deep EXR crash when defining data tolerances but no data channels	4.1.3.3	arnold	ramon	major	4.1.4
#3863	Light filters incorrectly modify surface UVs	4.1.3.3	arnold	ramon	major	4.1.4

Ticket	Summary	Keywords	Component	Owner	Priority	Milestone
#3987	AiHairDirectDiffuseCache() non-deterministic	framestore 4.1.3.4	arnold	alan	critical	4.1.4

Ticket	Summary	Keywords	Component	Owner	Priority	Milestone
#4057	out-of-range error in spotlight when using duplicate keys	4.1.3.5	arnold	thiago	major	4.1.4