

# 4.1.3.0

## Milestone 4.1.3

### December 16, 2013

#### 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	3 weeks
#3782	corrupted render region output in the X11 kick driver	kick	ramon	major	4.1	3 weeks
#3784	AiShaderGlobalsGetTriangle crashes with displacement in free mode	arnold	ramon	major	4.1	3 weeks
#3785	AiRadiance texture coordinates	arnold	ramon	major	4.1	3 weeks
#3786	specular_rotation parameter in standard shader misbehaving outside of [0,1] range	arnold	alan	major	4.1	3 weeks
#3788	NaNs with light_blocker	arnold	ramon	major	4.1	3 weeks
#3789	crash in bump3d used in object space	arnold	ramon	major	4.1	3 weeks
#3798	static non-invertible matrix transform crashes	arnold	thiago	major	4.1	13 days
#3803	curved motion blur not numerically precise	arnold	thiago	major	4.1	11 days
#3806	fast_exp symbol is stripped from os x opt build	arnold	thiago	major	4.1	9 days
#3809	matrix-transformed cylinder and disk lights broken with 1 motion key	arnold	alan	major	4.1	7 days
#3810	Memory leak in AiNodeEntryInstall	arnold	angel	major	4.1	6 days
#3811	AiNoise reports warning when using distortion	arnold	thiago	major	4.1	6 days
#3812	Don't compute importance tables for disabled lights	arnold	mike	major	4.1	5 days
#3816	Crash when interrupting render during BVH build with more than 2 motion keys	arnold	mike	major	4.1	3 days
#3817	hardcode options node's name to "options"	arnold	marcos	major	4.1	40 hours
#3799	Memory leak on NURBS node	arnold	angel	minor	4.1	12 days