Chagelog 10.0

10.0.174 - 2013-09-17

- Fixed low frequency noise when use IPR and raytraced subsurface (#4798).
- Fixed very long delay when opening an image in i-display from a large network folder.

10.0.173 - 2013-09-13

- Fixed reloading of RslPlugin on linux within Maya.
- Ray-traced subsurface scattering is much faster with multiple bounces and global illumination. Acceleration of 2x or more (depending on the number of bounces) can be expected.

10.0.172 - 2013-09-11

- More rt subsurface fixes (crashed when used with global illumination).

10.0.171 - 2013-09-11

- Fixed multicamera rendering with the raytrace hider.
- Fixed intensity problems and some stability issues with ray-traced subsurface scattering.

10.0.170 - 2013-09-09

- Fixed a crash in subsurface.
- Faster ray tracing of curves.
- Introducing raytraced subsurface scattering. This is enabled by passing a new "type" parameter to subsurface(). As in:

```
/* Note that it is important to pass the normal */
color sss = subsurface(P, N, "type", "raytrace", "samples", 100);
```

10.0.169 - 2013-09-04

- Faster ray tracing of curves in some cases.
- Much faster ray tracing of some extreme motion blur cases.

10.0.168 - 2013-08-30

- Fixed a crash when loading some shaders.
- Faster ray tracing.

10.0.167 - 2013-08-28

- Fixed interior shaders with the raytrace hider when the camera is inside the volume.

10.0.166 - 2013-08-23

- WARNING: if you are using the Maya 3Delight Material, you will have to re-create the material nodes since a needed change has broken compatibility.
- Fixed calculatenormal() orientation with raytraced shared instances.

10.0.165 - 2013-08-20

- Fixed some artifacts with bake3d() when "interpolate" is enabled.

10.0.164 - 2013-08-14

- Fixed a problem with some cases of instancing when ray tracing with displacement (#4710).
- i-display: added a "Contact Sheet" viewing mode. Double-click on a multiple selection or on a single image that contains many layers/AOVs to see all the images/aovs in a single view. In Contact Sheet mode, clicking on an image/AOV selects that particular image/AOV.
- renderdl now accepts the "-rid" command line option. It switches to i-display any display present in the RIB file. This is handy to redirect output to i-display instead of files.

10.0.163 - 2013-08-12

- Faster raytracer initialization.

10.0.162 - 2013-08-08

- Faster ray tracing of motion blurred curves.
- Fixed an i-display crash.
- Reduced memory use with the raytrace hider in some cases.

10.0.161 - 2013-08-06

- Fixed alpha which was sometimes not quite opaque with the raytrace hider.
- Fixed output of multiple variables with edge detection to a single exr file.

10.0.160 - 2013-08-02

- Fixed an issue with derivatives of texture() result in coshaders.

_10.0.159 - 2013-08-01_

- Fixed some linux compatibility issues with i-display.

_10.0.158 - 2013-07-30_

- Fixed derivative accuracy issue with raytraced subdivision mesh (#4694)
- Fixed shaders sometimes getting uninitialized values from transmission() in illuminate blocks, with rays. (#4702)

_10.0.157 - 2013-07-27_

- Fixed some shader bugs.

_10.0.156 - 2013-07-19_

- OS X packages will now install to /Applications/3Delight . The "rendermn.ini" file under the installation dir will now be preserved when installing a newer package.
- Improved the smoothness of the Blinn, Ashikhmin-Shirley and Cook-Torrance. There are small differences under some lighting conditions so the old look can be still accessed with Option "render" "int compatbsdf" 1. This can also be set through rendermn.ini as usual.

_10.0.155 - 2013-07-17_

- Removed an implicit faceforward in some of the build-in bsdfs. It is usually undesirable and can be done in the shader if really needed.

_10.0.154 - 2013-07-16_

- More efficient shader loading.

_10.0.153 - 2013-07-15_

- Minor changes to searchpath resolution on linux and OS X to reduce file server load.

_10.0.152 - 2013-07-13_

- Fixed display subsets with raytrace hider.
- Reduced memory use when raytracing curves.

_10.0.151 - 2013-07-06_

- Reduced memory use with curves.
- Fixed a crash with interior shaders.

_10.0.150 - 2013-06-22_

- Fixed bugs with resizable array class members.

_10.0.149 - 2013-06-19_

- Faster curve ray tracing, by about 20%.

_10.0.148 - 2013-06-17_

- Changes to ray tracer architecture. Should improve memory use and performance of displacement in most cases. Curve ray tracing is also generally faster.

_10.0.147 - 2013-06-14_

- Fixed IPR in 3DFM which was broken in 10.0.146 as well as compatibility with old render passes.

_10.0.146 - 2013-06-14_

- Changes in 3DFM (Normal render doesn't hang maya anymore).

_10.0.145 - 2013-06-08_

- UI changes in 3DFM. Refer to 3DFM log.
- Deep image output is now multi-threaded.
- Fixed a potential crash with UDIM textures.

_10.0.144 - 2013-06-05_

- Fixed dPdtime variable with raytrace hider and camera motion blur.
- Fixed a multithread crash introduced in 10.0.143.

_10.0.143 - 2013-06-04_

- Fixed a crash when writing exr files, more likely to occur with "zips" compression.

- Fixed a bug with vertex edits on subdivision meshes.

10.0.142 - 2013-05-27

- Fixed coshader parameter lookups in edit blocks.

10.0.141 - 2013-05-23

- Improved raytracer initialization time for some scenes.

10.0.140 - 2013-05-17

- Fixed some sources of bright speckles with the raytrace hider.
- Option "trace" "shareinstances" is now enabled by default.

10.0.139 - 2013-05-14

- Some fixes to dPdtime variable in the ray tracer.
- Fixed a self-intersection issue with ray traced displacement.
- Lights are now also accessible as named coordinate systems.

10.0.138 - 2013-05-09

- i-display can now save files in jpeg format.
- Fixed IPR and RiProcedural used together. Attributes were being lost.
- Fixed raytraced displacement artifacts.
- Improved derivatives in the raytrace hider. This should fix texture mapping problems that were visible on surface patch boundaries (especially visible when using the texture as displacement) (#4524).
- Less noise when using depth of field and the ray-trace hider.

10.0.137 - 2013-05-07

- Fixed i-display UI (no text) on debian based systems (ubuntu).
- Fixed RiMakeTexture and similar commands which were popping up consoles on windows.
- Fixed a sampling quality bug with progressive rendering (including IPR). This was making results much worse than they should be.

10.0.136 - 2013-05-03

- Fixed artifacts with the GI cache (#4498).

10.0.135 - 2013-04-30

- trace() now correctly samples the environment map even if the ray depth limit is reached. In that case, transmission rays will be used.
- Fixed excessive memory use when ray tracing shared instances.
- Added "samplelock" option to the "raytrace" Hider. One can choose to link the sampling patterns of trace() to the frame number or not.

10.0.134 - 2013-04-25

- Displacement shaders can now have the reserved "float __displacement_enabled" parameter to communicate if they are actually doing displacement, according to other parameters. When they are not, raytracing can be done faster and with less memory.
- Ray tracing hider now accepts the "samplemotion" toggle. This allows to disable motion blur while still providing correct motion vectors (#4434)

10.0.133 - 2013-04-23

- Fixed behavior of isoutput(Ci) for secondary rays.
- Fixed some installation issues on OS X.

10.0.132 - 2013-04-20

- Fixed some bright spots which would sometimes appear when using GI (#4463)

10.0.131 - 2013-04-18

- Fixed isoutput("Ci") to behave correctly, like isoutput(Ci). The later is still preferred.
- Fixed an occasional hang when using the GI cache in progressive render mode.
- Default texture filter for the ray trace hider is now "box". Contrary to REYES, the quality in they ray-trace hider is controlled by pixel samples so an analytical gaussian filter is not appropriate as a default (if specified, the filter type is honoured). The net result is a substantial speed improvement in texture heavy scenes.

10.0.130 - 2013-04-15

- Slightly faster ray tracing, using less memory.

10.0.129 - 2013-04-11

- Cylindrical projection can now be specified with horizontal field of view.
- i-display: multiple selection can now be moved in the thumbnail view.
- Fixed single sided primitives with raytraced displacement.
- Fixed faceforward() behavior with raytraced displacement.

10.0.128 - 2013-04-09

- Fixed some bright spots which would sometimes appear when using GI (#4415)

10.0.127 - 2013-04-05

- i-display: improved the thumbnail view. The width of the thumbnail now depends on the aspect ratio of the original image.

10.0.126 - 2013-04-04

- Reduced memory use of shader instances.
- Faster shader method calls.
- Fixed a crash with ray traced instances and displacement.

10.0.125 - 2013-03-27

- Fixed some shader compiler bugs.

10.0.124 - 2013-03-22

- Fixed a crash with ray traced instances.
- Fixed a performance issue with additive interior shaders and many overlapping containers. Such shaders are now required to use outputvolumefragment() for proper compositing.

3Delight For Maya

- Fluids now support the "texture rotate" parameter as well as all noise parameters (#4167).
- Improved performance and memory usage of particle cloud objects (#4167).

10.0.123 - 2013-03-20

- Fixed outputchannel() leaving uninitialized values when used in varying conditions.
- Added "ward" and "oren-nayar" distributions to trace() and bsdf().

10.0.122 - 2013-03-15

- Added the "cook-torrance" distribution to trace() and bsdf().
- Fixed some issues with calling methods in varying conditions.

10.0.121 - 2013-03-15

- *3Delight For Maya*
  - Added support for the following parameters when instancing fluid shapes : Texture Time, Frequency, Texture Origin, Texture Scale (#4167).

10.0.120 - 2013-03-14

- Default texture coordinates for subdivision meshes now match what is expected by ptexture().
- Subdivision meshes now handle the special "facevarying float __faceindex" used by ptexture correctly. This has different interpolation rules than a regular facevarying variable.
- Added the bsdf() shadeop to use the same distributions as trace() with direct light in illuminance().

10.0.119 - 2013-03-08

- Important improvements to the AOV workflow. Mode detail in 3Delight for Maya Changelog.

10.0.118 - 2013-03-06

- Faster ray tracing, about 5% to 15%.
- Improved performance and stability of i-display. Many operations are now 'vsync'ed. For example, the middle double-click for panning is now much smoother.

10.0.117 - 2013-03-03

- Fixed quality problems with the GI at corners.

10.0.116 - 2013-03-02

- Added "environmentcontribution" output parameter to trace() shadeop.
- Better calculatenormal() for rays.
- Fixed ray self-intersection issue with secondary diffuse bounces.

10.0.115 - 2013-02-25

- Further improved quality of envmap sampling in trace().
- Fixed cosine distribution with very small angles.
- Improved quality of ray sampling in reflections. For example, a reflection in a mirror will show same amount of noise than a direct camera view.

10.0.114 - 2013-02-21

- Fixed an occasional hang when baking point clouds (#4301).
- Improved quality of envmap sampling in trace() (#4278).

10.0.113 - 2013-02-20

- Fixed occlusion() and indirectdiffuse() derivatives.

10.0.112 - 2013-02-19

- i-display: has now a thumbnail view. Use the menu or CTRL-T to view the thumbnails.
- Fixed several issues with "weight" parameter in raytracing shadeops and the importance threshold attribute. Reaching the threshold will no longer produce incorrect images.
- gather() now always generates ray derivatives according to the specified angle, regardless of the distribution used.

10.0.111 - 2013-02-16

- Corrected intersection problems affecting Interior shaders that use primitive variables. Such as the ones generated by 3Delight For Maya when using "particleCloud" node.

10.0.110 - 2013-02-15

- Better volume rendering when using intersecting containers.
- Added preliminary support for particle cloud volume rendering in 3Delight For Maya.

10.0.109 - 2013-02-11

- Fixed a derivatives issue at extraordinary vertices when ray tracing some subdiv meshes.

10.0.108 - 2013-02-08

- Parallel compilation of shaders and conversion of textures in 3Delight for Maya.

10.0.107 - 2013-02-07

- Fixed a crash with the GI cache (#4258).

10.0.106 - 2013-02-06

- Display the rendering pre-pass when ray-tracing accelerator is enabled.

10.0.105 - 2013-02-05

- The BSDF roughness parameter(s) is/are now always in the [0..1] range. This applies to both "blinn" and "ahsikhmin-shirley" and will be the norm for all added BSDFs (#4214).
- Multiple-importance sampling has been added to the trace() function. This should reduce noise when using environments and BSDFs together.

10.0.104 - 2013-01-25

- Rays traced with trace() from REYES now have their position jittered even when no oversampling is used.
- Fixed missing normals with ray traced displacements when the displacement texture is fetched from a coshader.
- Improved control on edge width when using the "__edgewidthscale" shader variable (edge detection). Thickness is now more precise (using oversampling of 6×6 and more is recommended).
- trace() accepts a new BSDF: "ashikhmin-shirley" (anisotropic blinn-phong model). Roughness in the v axis is specified by "roughnessv" and anisotropy direction is specified using "udir".

10.0.103 - 2013-01-22

- Optimized some SL functions.
- Optimized subsurface scattering when combined with global illumination (#4205).

10.0.102 - 2013-01-17

- Made GI cache behavior more predictable with crop windows.
- Fixed motion blur ray tracing when only procedurals are used.
- Accelerated subsurface pre-computations when using varying parameters and global illumination. Order of magnitude acceleration in pre-computation have been observed when using many GI bounces.

10.0.101 - 2013-01-15

- Fixed artifacts with the GI cache (#4190).
- Fixed a multithread performance issue with the raytrace hider and scenes with large number of lights.
- Added optional parameters 'int imageid' and 'int subimagerank' for driver idisplay. User can specified the 'imageid' parameter in RiDisplay to group many aovs as different sub-images of the same image.

10.0.100 - 2013-01-11

- Fixed the trace() "blinn" distribution. "wi" parameter is now "wo", it now accepts "roughness" instead of "sharpness" and also accepts "eta" if a fresnel term is desired.

10.0.99 - 2013-01-10

- Fixed the "zmin" filter with the raytrace hider.

10.0.98 - 2013-01-09

- Fixed broken i-display compatibility in 10.0.97.

10.0.97 - 2013-01-09

- The trace() shadeop now accepts "environmenttint" color parameter (or "environment:tint"). Ray misses that query the environment will be multiplied by the provided color (#4176).
- tdlmake now accepts relative paths for MARI textures (finalizing #4181).
- Fixed long RIB strings with '$' in them being lost (#4187).
- Much faster subsurface scattering when using the Raytrace algorithm (#4099).

10.0.96 - 2013-01-06

- Native MARI texture support in tdlmake (using the UDIM tag).

10.0.95 - 2013-01-03

- Fixed some artifacts near the poles of lat-long environment maps (#4171).
- Faster ray tracing of shadows and occlusion (as much as 5% in certain cases).

10.0.94 - 2012-12-22

- Fixed some bad ray derivatives near patch edges in reflections and refractions (#4164).

10.0.93 - 2012-12-21

- Fixed crashes with some setups of lights using coshaders (#4156).
- Fixed corruption of matrix shader parameters (#4161).
- Changed ray derivatives behavior.

10.0.92 - 2012-12-14

- textureinfo() now recognizes UDIM as well and queries the first available tile (#4148).
- texture(), ptexture() and environment()'s "fill" parameter now accepts a color value (related to #4148).

10.0.91 - 2012-12-14

- Fixed a crash with subsurface visibility edits on HierarchicalSubdivisionMesh.

10.0.90 - 2012-12-12

- Added info message R1183 about uniform shader parameters which can affect raytracing performance.
- Fixed some bogus warning R5017.
- i-display: added image bookmarking feature (see Navigate menu).
- Added support for Mari's UDIM texture tiles (#4139).

10.0.89 - 2012-12-08

- Faster ray tracing of motion blur.
- Faster ray tracing.

10.0.88 - 2012-12-03

- Fixed occasional point cloud corruption with bake3d().

10.0.87 - 2012-11-29

- Fixed writing of very small exr files.
- Fixed ray traced shadowing artifacts with directional lights in some scenes.

10.0.86 - 2012-11-27

- Faster ray tracing.

10.0.85 - 2012-11-23

- Faster ray tracing.

10.0.84 - 2012-11-21

- Fixed brick map creation on windows.
- Improved ray tracing performance with dense geometry.

10.0.83 - 2012-11-19

- Added Option "limits" "processmemory".

10.0.82 - 2012-11-12

- Adding a GI cache to interactive renders.

10.0.81 - 2012-11-07

- Fixed artifacts with photon maps on windows.
- Fixed some camera position and clipping plane bugs with the raytrace hider.

10.0.80 - 2012-11-02

- Fixed unstable environment map sampling with very small cones.

10.0.79 - 2012-10-31

- Fixed exr display driver to never output channel names longer than 31 characters, as the OpenEXR documentation suggests.
- Fixed a bug with environment("raytrace") when blur is used.

10.0.78 - 2012-10-25

- Fixed DOF quality with raytrace hider.
- Fixed querying of "grouping:membership" through Rx API from a Ri filter.

10.0.77 - 2012-10-23

- Fixed ray tracing startup crash with some scenes.
- Fixed subsurface crash with "*" visibility and subdivision meshes in procedurals.

10.0.76 - 2012-10-19

- Fixed ridiculous memory use in some scenes with a huge number of lights.

10.0.75 - 2012-10-17

- Fixed inconsistency between occlusion and color output of point cloud indirectdiffuse().

10.0.74 - 2012-10-16

- Fixed "zips" compression with the exr display driver.
- Fluids in Maya render 20% faster.
- Fixed some ray tracing bugs introduced in 10.0.73.

10.0.73 - 2012-10-12

- Faster.

10.0.72 - 2012-10-09

- Reduced memory use when ray tracing polygons and particles (#3989).

10.0.71 - 2012-10-04

- Fixed self-intersection problems with motion blur and the raytrace hider.

10.0.70 - 2012-10-03

- RenderMan Shaders are now correctly supported in IPR rendering in 3Delight For Maya.

10.0.69 - 2012-09-25

- Fixed IPR rendering crashes in 3Delight For Maya.

10.0.68 - 2012-09-17

- Added "effectivesamples" parameter to gather().
- Improved quality of the subsurface algorithm.

10.0.67 - 2012-09-13

- Fixed "maxspeculardepth" attribute with raytrace hider.
- Fixed artifacts with the intersection of rays with polygonal geometry and also with bi-linear patches (#3960)
- Vastly improved performance of subsurface() when used alongside indirectdiffuse() (#3962)

10.0.66 - 2012-09-05

- Area light sampling is faster in ray-tracing contexts (#3946).
- occlusion() and indirectdiffuse() are 10% to 20% faster when using the RT hider.
- Fixed a crash with raytrace hider when pixel filter is larger than bucket size.

10.0.65 - 2012-08-29

- ray-traced shadows are much less noisy when using the RT hider (#3937)
- Fixed a crashbug caused by very deep ray levels (#3929).
- Fixed bad renders with asymmetric PixelSamples.

10.0.64 - 2012-08-25

- Fixed ray tracing artifacts on mesh grid boundaries which could occur with some shaders.

10.0.63 - 2012-08-24

- Improved memory usage for polygon meshes.

10.0.62 - 2012-08-21

- Fixed area light shading when normals were provided along with the area light geometry. This was broken since 10.0.11. (#3915)

10.0.61 - 2012-08-17

- Adding access to trace:maxdiffusedepth and trace:maxspeculardepth through the attribute() shadeop (#3910).
- Reduced memory use when ray tracing polygon meshes.
- Fixed a crash with very long strings in RIB files.

10.0.60 - 2012-08-09

- Reduced memory use when ray tracing polygon meshes.

10.0.59 - 2012-08-04

- Fixed self-shadowing issues with the hidden hider when "trace" "samplemotion" is used on a moving object.
- Improved arealight sampling in both speed and quality (especially when using the RT hider).

10.0.58 - 2012-08-02

- Fixed a bug where photon maps were ignored on some instances.

10.0.57 - 2012-07-30

- Fixed a crash when coshaders with duplicate handles are used by the same surface.

10.0.56 - 2012-07-27

- Added string match(string, string) shadeop which returns the matched string.
- Added string replace(string subject, pattern, replacement) shadeop.

10.0.54

- Improved sampling of the occlusion and indirectdiffuse shadeops when used in the RT hider (this means less noise for these shadeops).
- Improved quality of gather() in the context of ray-tracing reflections and refractions.

10.0.53 - 2012-07-19

- Fixed some shader parameter assignments from primvars when ray tracing shared instances.

10.0.52 - 2012-07-17

- Fixed some attributes when ray tracing shared instances.

10.0.51 - 2012-07-06

- Fixed i-display on windows which was broken in 10.0.50.
- Fixed a performance issue with texture lookups when raytracing. The problem arrises when very finely tessellated geometry is ray-traced.

10.0.50 - 2012-06-28

- Fixed filterstep() at ray hits (#3818).

10.0.49 - 2012-06-15

- Atmosphere shaders now run on particles when "standardatmosphere" option is 0. Particles were previously ignored (#3783).
- Added "volumeintersectionstrategy" attribute. This enables correct rendering of intersecting interior volumes (#3792).
- Channel names in OpenEXR files should now be better compatible with other software (#3791).

10.0.48 - 2012-06-13

- Improved startup performance of the raytracer for some particular scenes. An example scene for which this optimization will work is a single big curves primitive (containing a very large amount of curves).
- Improved performance of loading brick maps (#3779).

10.0.47 - 2012-06-06

- Fixed a crash when outputting several variables to the same image file.

10.0.46 - 2012-06-02

- Fixed the coordinate systems registered by RiCamera. This also fixes multi-camera rendering problem (#3209 and #3211).

10.0.45 - 2012-05-23

- Shaders with light methods which have too many required parameters to be run from illuminance loops are now cleanly skipped.

10.0.44 - 2012-05-15

- Added support for RtxPlugin.
- Fixed a bug with message passing in the illuminance() parameters.
- Fixed motion blur sampling quality with the raytrace hider (#3730).
- Fixed a crash with uniform shader parameters in the raytracer.

10.0.43 - 2012-05-08

- Fixed texture3d() sometimes returning garbage on triangle meshes.

10.0.42 - 2012-05-06

- Improved timing statistics.
- Updated exr displays "asrgba" parameter to also change single channel images to 'Y'.
- Fixed a crash when a photon render follows a DSM render in a RIB.

10.0.41 - 2012-04-27

- Curves raytrace faster, using less memory.
- Fixed a memory leak introduced in 10.0.39.

10.0.40 - 2012-04-23

- Vastly accelerated scenes which have large camera motion blur when using the raytrace hider. Camera motion-blur in the RT hider has no speed penalty any more (#3713).
- *dPdtime* is now available in the ray-trace hider (#3683), this only works for object's motion blur (not camera).
- du and dv in regular (not area) light sources are now the same as on the surface.
- Fixed Sides 1 when there is a negative scale before RiProjection.

10.0.39 - 2012-04-12

- Fixed bad renders with quadric particles when there was a scale in the transform (#3689).
- textureinfo() "type" can now also return "ptexture", "pointcloud", "brickmap" or "photonmap".
- textureinfo() "fileformat" can now return "tiff", "openexr" or "deepshadow".
- Statistics now display "time to first pixel" (#3650)

10.0.38 - 2012-03-29

- Fixed a crash when trying to access invalid texture files in a construct() method.
- Fixed a crash in the shader compiler (#3643).

10.0.37 - 2012-03-28

- Fixed more bugs with invalid subdivision meshes.
- Fixed hanging when trying to open an empty point cloud file.
- RiBasis() is now allowed inside a RiObjectBegin()/RiObjectEnd() block.

10.0.36 - 2012-03-24

- Fixed a crash when trying to open a nonexistent point cloud file with the Ptc API.

10.0.35 - 2012-03-22

- Fixed a crash with some invalid subdivision meshes.
- Fixed a shader compiler issue (#3643).
- Ptcview uses up to 4 times less memory.

10.0.34 - 2012-03-13

- Faster pixel filters.
- Smooth derivatives are now available when raster oriented dicing is turned off.
- Improved multithreading with textures and point clouds.

10.0.33 - 2012-02-29

- Added -pixelaspectratio and -imageaspectratio options to tdlmake.

- Faster tdlmake.

10.0.32 - 2012-02-27

- Added total physical memory to statistics.
- Point based occlusion()/indirectdiffuse() now supports points with null normals and interprets them as spheres.

10.0.31 - 2012-02-23

- Faster startup of the ray tracer with subdivision surfaces.
- Fixed texture(). It was sometimes returning bad values at ray intersections.
- Added the "scope" parameter to RiObjectBeginV() (#3509).

10.0.30 - 2012-02-21

- Maya Fluids will render much faster when shadowing is enabled alongside deep shadow maps (#3568). We timed speedups of 700%.
- Faster handling of subdivision surfaces.

10.0.29 - 2012-02-13

- The exr display driver now correctly records the pixel aspect ratio.

10.0.28 - 2012-02-10

- Fixed occlusion() output when the maximum trace depth is reached.
- Fixed a performance issue on windows when many textures are used.

10.0.27 - 2012-02-08

- Improved ray tracing performance of some transparent curves. Very dense fur patches which necessitate shader evaluation for ray-tracing will benefit the most from this optimization (we experience a maximum speed increase of 300%).

10.0.26 - 2012-01-28

- Even faster bake3d().
- Fixed compositing of AOVs with colored opacity.
- Fixed a crash with occlusion().

10.0.25 - 2012-01-21

- Fixed network caching of write operations. It was not working since version 10.0.22. (#2933)
- Faster bake3d().

10.0.24 - 2012-01-17

- Added disk I/O statistics for Linux and Mac OS X systems.
- Added support for AOVs for displays which use fragment lists. Only one such display is fully supported but multiple AOVs are allowed.

10.0.23 - 2012-01-13

- Added statistics for network traffic during the life of a render (works on Linux and OS X).
- Added statistics about the total number of physical and logical cores on the system (there can be more logical cores on a given system because of "hyper-threading").
- Added a new RiSubdivisionMesh tag "smoothcreasecorners" which allows more than two creased edges to meet at a vertex without automatically generating a sharp corner.
- Improved memory management for large scenes. Resulting memory savings can reach 25%.

10.0.22 - 2012-01-05

- Parsing of binary RIB is now even faster.
- Fixed raytracing when using an atmosphere shader which doesn't use Ci.
- Fixed raytracing of some types of particles.

10.0.21 - 2011-12-22

- Parsing of binary RIB is now 2-3 times faster.

10.0.20 - 2011-12-19

- Fixed tdlmake on windows. This was broken in 10.0.18.
- Faster point based occlusion()/indirectdiffuse().

10.0.19 - 2011-12-13

- Fixed ribdepends packaging when there are conflicting RIB file names.
- Fixed Imager option not being correctly restored at FrameEnd.

10.0.18 - 2011-12-06

- Added Option "trace" "shareinstances". This option let's the user switch the ray-tracing algorithm into a mode which is very efficient with (very) large amount of instances.
- Faster loading of textures. This will have a positive impact on renders which access a lot of texture data on multi-core machines.
- Fixed occasional crash when raytracing shared instances.
- Fixed missing surfaces when raytracing scaled shared instances (#3385).

10.0.17 - 2011-11-30

- Added ability to specify polygonal bokeh shapes (aperture control) (#3363).
- Faster motion blur raytracing. Speedups are proportional to the "length" of the motion.
- Fixed a crash with AOVs when using the raytrace hider (#3379).

10.0.16 - 2011-11-24

- Floating point "dirtexes" were broken in version 10.0.15, fixed.
- Native EXR textures (not converted by tdlmake prior to render) were broken in 10.0.15, fixed.

10.0.15 - 2011-11-23 (UNSTABLE)

- Fixed RSL signature reader in the case were a parameter name is present (#3352).
- Fixed a crash when using outputchannel() when shading rays (#3361).
- Ray tracing subdivision surfaces now uses significantly less memory and is slightly faster. On our test scenes, memory usage is halved on scenes with a lot of subdivision surfaces.
- Fixed a crash in shaderinfo with some shaders (#3190).

10.0.14 - 2011-11-17

- Fixed netcache behavior when textures have a modification time in the future (#3218).
- Fixed "maxvdepth" option: it was not acting properly on particles (#3328).
- Improved texture lookup performance on some meshes (#3218).
- Fixed 32 bit integer texture() lookups (#3347).

10.0.13 - 2011-11-15

- Fixed some shader compiler crashes.
- Fixed performance of ray tracing with "samplemotion". This can improve performance substancially.

10.0.12 - 2011-11-09

- Fixed a bug in the license server which would cause processes waiting for licenses to not use as many threads as they should when they finally got a license (visible as message L2177).
- Fixed crashes when the file descriptor limit is raised on OS X or linux.
- New texture cache statistics.
- Fixed a crash after the render is done with some shaders.
- Fixed a crash in RifUnloadPlugins().
- Performance improvements.

10.0.11 - 2011-11-04

- Fixed directory textures which were not recognized on windows.
- Multi-threading performance has been improved (for machines with a high core count). This concerns renders where message passing and string manipulation is used a lot.

10.0.10 - 2011-10-31

- Fixed a multi-thread performance issue.

10.0.9 - 2011-10-19

- Added support for vertex width on cubic curves.
- Add Option "trace" "depthaffectsptc". This option states if ray depth should be honored when rendering point-based occlusion and color bleeding (on by default).
- Fixed rendering of interior shaders when the camera is inside the box which defines the volume.

10.0.8 - 2011-10-18

- Fixed a bug with motion blur of object instances when both deformation and transformation blur are used.
- texture() calls are up to 4 times faster on secondary rays (such as textures viewed in reflections).
- Added the -mirrorx option to tdlmake to mirror latitude-longitude environment maps.

10.0.7 - 2011-10-14

- Fixed some incorrect errors in the shader compiler.
- Fixed a stereo rendering bug which would cause objects to sometimes be missing.

10.0.6 - 2011-10-12

- Fixed random crashes at the end of the render with 10.0.5 when using shaders compiled with a version before 10.0.5.
- Fixed a performance issue on windows.
- Fixed some incorrect error messages from the shader compiler regarding uniform and varying variables.

10.0.5 - 2011-10-07

- Fixed a bug which would sometimes cause transparent objects to show up twice since 10.0.3.

10.0.4 - 2011-10-06

- Fixed a crash when using the raytrace hider with interior shaders.
- Fixed behavior of atmosphere shaders in front of matte objects when the "standardatmosphere" option is set to 0.
- Improved quality and speed of point based occlusion/indirectdiffuse with narrow cone angles. Speed improvement is of 10%.

10.0.3 - 2011-10-04

- Improved REYES multithread scalability. This is most visible when rendering dense geometry (such as hair) with simple hiding and shading (as when generating a typical shadow map).
- Multi-camera rendering of particles is now supported.

10.0.2 - 2011-10-01

- Added gridmin() and gridmax() shadeops to the shading language.
- Fixed texture interpolation with the "box" filter when shading particles or using the Sx API and a blur of 0 is specified.

10.0.1 - 2011-09-26

- Fixed thread safety of SxGetParameterInfo().
- Fixed a performance issue when reading huge strings (several megabytes) from a RIB.

10.0.0 - 2011-09-23

- Fixed texture interpolation with the "box" filter when shading particles or using the Sx API.
- New implementation of the noise() shadeop. It is up to 3 times faster and has slightly improved contrast for 3D and 4D noise. The previous noise can still be obtained with Option "render" "compatnoise" 1 (or in rendermn.ini: /option/render/compatnoise 1).
- subsurface() is 300% faster when called for secondary rays (such as subsurface effects seen in a mirror).
- Fixed a performance issue with ray tracing displacements which would cause a catastrophic slowdown with some geometry.