

Changelog 11.0

11.0.168 - 2015-05-25

- Undoing ray importance modifications introduced in 11.0.166. Even though it was an improvement in terms of *consistency*, some scenes were rendering slower than in previous versions for the same quality. This feature is now disabled by default and can be enabled using `"option "trace" "gammacorrectedweight" [1]"`

11.0.167 - 2015-05-21

- Fixed sampling quality issues which sometimes occurred with high `PixelSamples` values.

11.0.166 - 2015-05-13

- Modified the way rays' importance acts on the total number of traced rays: it is now more conservative to take into consideration screen's gamma curve, this means noise in dark areas will be consistent with noise in bright areas.



It is necessary to lower the number of samples in materials and/or in *the Render Settings for Indirect Illumination* to regain performance.

11.0.165 - 2015-05-08

- Adding a `"[float|color] stringhash(string)"` shadeop which takes a string and returns a corresponding float or color *hash*. This function can be used to output (as AOVs) color-coded object identifiers (or material identifiers) for further masking and compositing.

11.0.164 - 2015-05-06

- Fixed crash in hair bsdf with excessive eccentricity.

11.0.163 - 2015-04-30

11.0.162 - 2015-04-29

- Added ability to output AOVs with `outputvolumefragment()`.

11.0.161 - 2015-04-27

- Fixed ray tracing of small, far away sphere particles.
- Fixed AOVs of interior shaders with ray tracing when not using `outputvolumefragment()`.

11.0.160 - 2015-04-22

- Fixed CSG rendering with ray tracer.
- Fixed i-display keyboard input which was not working on some linux distributions.

11.0.159 - 2015-04-20

- Fixed i-display's export as JPEG which was broken in 11.0.158.

11.0.158 - 2015-04-16

- Fixed bugs with `outputvolumefragment()` when using Multi-Light output.

11.0.157 - 2015-04-08

- Fixed object space when running interior shaders on instances in the raytracer.
- Fixed crash in deepexr display with crop window.
- Fixed incorrect execution of overlapping additive interior shaders in some cases.

11.0.156 - 2015-04-06

- Proper support of Blackman-Harris pixel filter. It is very similar to the gaussian filter which was already available.
- Path-tracer now handles large empty screen regions more efficiently. Renders that have a small "screen footprint" (e.g. one character in the middle of the screen) will render faster.
- i-Display: Improved visual transition when entering and exiting Contact Sheet mode (for displaying multiple image selections or image layers).
- i-Display: The size of the Mixer dialogue can be adjusted in height to display more or less mixing sliders.

11.0.155 - 2015-03-31

- Fixed a bug with trace sampling introduced in 11.0.154. Do not use that version.

11.0.154 - 2015-03-29

- Added Attribute `"light" "integer normalize" [n]` to enable area light intensity normalization by area.

11.0.153 - 2015-03-27

11.0.152 - 2015-03-25

11.0.151 - 2015-03-25

11.0.150 - 2015-03-24

- Fixed bug in execution of interior shaders on secondary rays.
- Fixed a crash with raytraced subsurface and high maxdepth.

11.0.149 - 2015-03-20

- Fixed Ng in surface() method when displacement() method also uses it.
- Fixed normal in opacity() method for transmission rays.
- Fixed Ng when vertex displacement is used.

11.0.148 - 2015-03-12

- Fixed a crash when invalid motion blur data is provided (after error P1027).
- i-Display: Flipping through layers using Layer Next/Previous (Page UP/Down) now works with multiple selections.
- i-Display: When entering Full Screen, the Thumbnail, Label and Menubar are hidden temporarily. When exiting Full Screen, their state is restored unless changed while in Full Screen.
- i-Display: *Save Image as...* and *Export as JPEG...* now default to the path and filename of the image specified in the rendering options.
- i-Display: Fixed a bug with filename being truncated (characters following "." in their name) when exporting JPEG or with Save All Images.
- i-Display: Fixed a bug preventing re-arranging thumbnails in Full Screen on OS X.

11.0.147 - 2015-03-03

- Fixed bogus error messages from deepexr display.
- i-display: added rendering progress indicators on the bucket level (can be enabled/disabled through the preferences).

11.0.146 - 2015-02-27

- Fixed raster, screen and ndc space with camera motion blur and the raytrace hider.

11.0.145 - 2015-02-25

- i-display: Redesigned and simplified preferences window.
- i-display: Small improvements to the look and feel of the UI.
- Fixed 'time' variable in volume shaders. It was not properly initialized.

11.0.144 - 2015-02-24

- Fixed orientation of patch (sprite) type particles with fisheye camera.

11.0.143 - 2015-02-23

- Shading group size statistics are now shown per ray type.
- Fixed crash in Sx library when using co-shaders (#5757).
- Improved ray tracer performance by up to 15% when using multiple specular bounces (#5746).
- Fixed interior and atmosphere shaders with raytraced instances.

11.0.142 - 2015-02-19

- Fixed potential hang with edit API.

11.0.141 - 2015-02-17

- Fixed error reporting in the exr display driver.

11.0.140 - 2015-02-11

- Fixed a bug with interior shaders, transparent surfaces and the raytracer.
- Partial implementation of *volumeshadingrate* option with raytrace hider. Setting a *volumeshadingrate* smaller than 1 will simply shade the volume at each sub pixel. For debugging purposes only.

11.0.139 - 2015-02-06

- Fixed a performance problem with area lights which have non quadratic decay.

11.0.138 - 2015-02-05

11.0.137 - 2015-02-01

- Fixed clipping planes with instances in the ray tracer.

- Added JSON statistics output. New output uses *legalized* names for easy access and parsing. All available able statistic are listed [here](#). To output statistics in JSON format simply name use the `.json` extension for the statistics filename.
- Statistics now contain a per texture *footprint* statistics instead of previous, less useful, statistics.

11.0.136 - 2015-01-24

- It is now possible to send edits while IPR is suspended.

11.0.135 - 2015-01-22

- The ray traced version of `subsurface()` shadeop can now output the contribution of single scattering only (using the "singlescattercontribution" output variable) (#5638).
- The 'followtopology' parameter to ray traced `subsurface()` now works. Highly scattering and curved surfaces might see an improvement in quality with this parameter enabled. The drawback is much significantly higher noise levels in the subsurface effect.
- Fixed the autocrop option of the exr display driver when outputting the Z channel. Infinitely large depth values are now considered as empty space (#5646).

11.0.134 - 2015-01-19

- Improved RIB output speed. Acceleration for large RIBs is between 10% and 20%. Acceleration can reach 300% In very specific cases where RIB stream contains very little geometry but large amount of strings (e.g. large amount of scene modifications when using the scene edit API). (#5680)
- `-D` option of `renderd1` is not available anymore.
- `-id` option of `renderd1` now tries to output all the cameras that are used in a multi-camera render (#1494).

11.0.133 - 2015-01-15

- Fixed a performance issue with writing some types of RIB.

11.0.132 - 2015-01-14

- i-display: Fixed crash that happened when loading an image of unknown format.
- Fixed a normal orientation problem with vertex displacement on instances of subdivs, with the raytrace hider (#5675).
- Fixed sometimes incorrect initialization of rsl plugins (#5676).

11.0.131 - 2015-01-10

- Deep EXR display driver produces files 10 times smaller than before, without noticeable loss of quality.
- Fixed subsurface sampling which was sometimes producing speckles. Speckles were appearing when a material has very different scattering properties for R, G or B. As an example, a material that was highly scattering in red and non scattering in blue (such as skin) could produce such speckles. Note that this might result in slightly lower quality for gray materials (with similar scattering for R, G and B), and these could require more samples (#5613, #5641).
- i-display: *Copy & Paste* functionality was producing bad images when pixels had values larger than 1. This has been fixed (#4428).

11.0.129 - 2015-01-06

- Fixed a bug which could cause interior shaders to produce garbage or appear stuck (#5667).
- Fixed depth in deep output with the raytrace hider (#5668). Previously, depth was computed as a distance from the *point* representing the camera. After this fix, depth is the orthogonal distance from the surface to the *plane* defined by the camera.

11.0.128 - 2014-12-29

- Faster execution of interior shaders (volumes) with the raytrace hider.

11.0.127 - 2014-12-17

- `ribdepends` now recognizes UDIM textures.
- Fixed license server connection error reporting.

11.0.126 - 2014-12-15

- Adding an option to the exr display driver to disable AOV name length limit (it is clamped to a maximum of 32 character now). You can add the following line to the `rendermn.ini` file to disable the clamping:

```
/display/exr/aovnamelimit 0
```

- Fixed an occasional crash with GI (#5654).

11.0.125 - 2014-12-03

- Fixed a bug with interior shaders (ie. fluids) not rendering for some buckets (#5642).

11.0.124 - 2014-12-01

- Fixed artifacts in ray traced subsurface scattering in certain configuration. Artifacts could appear as dark regions (#5299).

11.0.123 - 2014-11-27

- i-display: Fixed refresh of incoming renders while Mixer is enabled (*Windows-only* problem).

11.0.122 - 2014-11-23

- Fixed potential artifacts with interior shaders and spot lights.
- EXR display driver now reads `/display/exr/autocrop` boolean from the `rendermn.ini` file.
- i-display: Fixed potential crash (rare).
- i-display: Better rendering of fonts on *Mac OS X* and *Windows* platforms.

11.0.121 - 2014-11-15

- i-display: Better kerning of filename fonts.

11.0.120 - 2014-11-14

11.0.119 - 2014-11-12

- Fixed sporadic crashes with ray-traced subsurface (issue #5615)

11.0.118 - 2014-11-07

- i-display: It is now possible to use drag & drop operations inside the thumbnail view.
- Fixed a crash when raytraced subsurface is given a null normal.

11.0.117 - 2014-11-02

- Fixed using AOVs from both surface and atmosphere shader with raytrace hider.
- Added "mattesubset" RiDisplay parameter for display specific control of matte objects.

11.0.116 - 2014-10-30

- Removed random black lines in progressive rendering.
- Fixed editing of secondary cameras.

11.0.115 - 2014-10-22

- Improved tiles (buckets) size in progressive rendering.
- Fixed fisheye projection when fov > 180.
- Patch particles now always face a fisheye camera so they are visible all around it.

11.0.114 - 2014-10-16

- Fixed subsurface() returning invalid values for albedo values near 1.
- Reduced noise in non-final passes of progressive rendering.

11.0.113 - 2014-10-10

- Fixed a deadlock with vertex displacement.

11.0.112 - 2014-10-07

- Fixed bad rendering of raytraced subsurface with displacement. Symptoms were dark regions around creases and bumps on the displaced surface.
- Fixed layer naming in OpenEXR files.
- More responsive stopping of IPR.

11.0.111 - 2014-10-02

- Fixed IPR problems introduced in *11.0.110*.
- i-display: *Export as JPEG* now asks for a location.

11.0.110 - 2014-10-01

- Improved progressive rendering. The progressive pattern has now a more standard progression and converges to the same render as for a normal, non-progressive, render.
- Progressive rendering is now almost as fast as a normal, non-progressive, render. As a broad estimate, the progressive render has less than a 10% speed penalty compared to a normal render.



Scene edits (IPR) appear delayed in this version, do not update to this version if IPR is needed.

11.0.109 - 2014-09-30

- Minor optimizations for hair and fur rendering.
- Minor improvements Just In Time compilation in the shader compiler.

11.0.108 - 2014-09-24

11.0.107 - 2014-09-18

- i-display: "Save as JPEG" becomes "Export as JPEG". It now "burns" all image transformation into the result, including color space and exposure.
- i-display: Added Copy/Paste features.
- i-display: Removed "Draw as Pixels". From now on, we always draw using OpenGL textures.

11.0.106 - 2014-09-17

11.0.105 - 2014-09-11

- Fixed a variable interpolation problem on seams of subdivision meshes which end without reaching another seam.

11.0.104 - 2014-09-04

- Shutter offset can now also be specified as an attribute.
- Fixed a crash in uniform texture() lookups with UDIM map.

11.0.103 - 2014-08-30

- 3Delight now supports fisheye projections with the raytrace hider.

11.0.102 - 2014-08-25

- Vertex displacement now runs multithreaded.

11.0.101 - 2014-08-20

- Ray-traced subsurface scattering now uses much less memory and is 5% to 7% faster (#5481).

11.0.100 - 2014-08-19

- `shaderd1` now accepts only the correct extensions when looking for a RslPlugin (#5515).
- Fixed a bug with the Sx API which caused output parameters to sometimes not be retrievable when the API is used inside a render (#5514).

11.0.99 - 2014-08-14

- 3Delight now warns about NaN or infinity values in geometry (#5031).

11.0.98 - 2014-08-09

11.0.97 - 2014-08-05

- Various improvements to vertex displacement.

11.0.96 - 2014-08-04

- Fixed edits of `RiScopedCoordinateSystem()` which were not working.
- We now support raw data output for different AOVs, in the display driver system (#5495).
- i-display: Thumbnails are now on the same format as the image. This is mostly useful for high dynamic range images.

11.0.95 - 2014-08-01

11.0.94 - 2014-07-31

11.0.93 - 2014-07-30

- Fixed wrong statistics for hair and subsurface ray count percentages.
- i-display: You can now drag and drop images.

11.0.92 - 2014-07-27

- Added "maxhairdepth" attribute to control the maximum number of bounces for rays of type "hair".

11.0.91 - 2014-07-26

- Fixed a possible crash when editing coshaders high in the attribute hierarchy.

11.0.90 - 2014-07-21

11.0.89 - 2014-07-18

- Fixed a case of bad primitive variables on coshaders which are marked as not light dependent when display light categories are used.

11.0.88 - 2014-07-15

- Fixed installation of license server as a service on windows.

11.0.87 - 2014-07-11

11.0.86 - 2014-07-10

- Fixed outlining on RGBA variable.
- Adding "string namesuffix" parameter to RiDisplay. This is used to properly output light category names to exr display driver.

11.0.85 - 2014-07-07

- Fixed incorrect global illumination intensity in some corner cases. In particular this could happen when tracing very low sample counts (#5409).

11.0.84 - 2014-07-02

- i-display: Use more user friendly light names when using the light-mixer.
- Fixed a possible crash with camera edits in IPR.
- Added "string scopetype" parameter to RiEditBegin(). This allows attribute edits to match either geometry only or also include higher attribute scopes.

11.0.83 - 2014-06-26

- Better environment variable update in *Windows* installer.

11.0.82 - 2014-06-24

- Windows installer changes for *3Delight for Maya*. Previous installer might leave the plug-in in a non-loadable state.
- `textureinfo()` now accepts "pixelaspectratio" parameter.

11.0.81 - 2014-06-20

- No changes.

11.0.80 - 2014-06-17

- No changes.

11.0.79 - 2014-06-18

- Fixes in *3Delight for Maya*.
- Fixed a source of NaNs (*not a number floating point errors*) in the path tracer. These could appear as "fireflies" in the render.

11.0.78 - 2014-06-12

- Slightly faster coshader method calls.
- Hierarchical subdivision mesh edits now also edit the "identifier" "name" attribute so RiEditBegin() can address the saved attributes independently.

11.0.77 - 2014-06-05

- Bucket ordering was not properly supported during render "edits". Fixed (#5359).

11.0.76 - 2014-06-04

- Fixed invalid exr files when using Multi-Light output in 3Delight for Maya.

11.0.75 - 2014-05-26

- The hair bsdf now prevents energy amplification when weights > 1 are used. See [the manual](#).
- The windows installer no longer overwrites an existing rendermn.ini file.

11.0.74 - 2014-05-22

- Fixed sampling of area lights with triangular faces.

11.0.73 - 2014-05-21

- Fixed a performance issue with multicamera rendering in REYES. Render would sometimes not start at all as well.

11.0.72 - 2014-05-16

- Improved depth of field sampling in the path tracer (#5272).
- Fixed wrong primvars with viewdependent shading in REYES.

11.0.71 - 2014-05-13

- The texture() shadeop now has an "alpha" output parameter which can be used to retrieve the alpha channel of a texture in the same lookup as the color, making the whole operation twice as fast.

11.0.70 - 2014-05-12

- The "expand" parameter of the texture() shadeop now also applies to 2 channel textures, where it replicates the first channel to RGB.

11.0.69 - 2014-05-08

- Fixed the autocrop option of the exr display driver with very large files on windows.
- i-display: Shows the total render time for each rendered frame in the the *Info* dialog.

11.0.68 - 2014-05-07

- Fixed distortion on the Y axis in cylindrical projection (#5156).
- Fixed incorrect options in shader construct method when using the Sx API.

11.0.67 - 2014-05-01

11.0.66 - 2014-04-30

- Fixed motion blur which was sometimes incorrect with instances.

11.0.65 - 2014-04-28

- Fixed occasional bad tracing of transmission rays when sampling area lights.

11.0.64 - 2014-04-24

- Improved precision of subdivision surface derivatives.

11.0.63 - 2014-04-23

- Faster hair bsdf.
- Small fix of 3rd lobe position in hair bsdf.

11.0.62 - 2014-04-17

- Statistics now show the 'rendermn.ini' files that have been scanned for options.
- Fixed trace() which would sometimes return uninitialized values in array outputs.

11.0.61 - 2014-04-14

- Improved sampling of new "hair" bsdf.

11.0.60 - 2014-04-11

- Fixed visibility of instances of polygon meshes.

11.0.59 - 2014-04-09

- Fixed 'TRT' lobe computation in the new "hair" bsdf.

11.0.58 - 2014-04-08

- Faster instance ray tracing.
- Fixed dPdttime variable with instances.

11.0.57 - 2014-03-31

11.0.56 - 2014-03-31

- Fixed behavior of Matte attribute with instances.

11.0.55 - 2014-03-28

11.0.54 - 2014-03-27

- Fixed problem with interior shaders and multicamera rendering with view dependent shading (REYES) (#4949).
- i-display: Fixed background image (#5135).

11.0.53 - 2014-03-25

- Changed random number generator will yield different noise in images (not different looking, just different).
- Fixed a crash with non light dependent coshaders using primitive variables.
- Fixed misc artifacts with non light dependent coshaders (#5101).

11.0.52 - 2014-03-21

- Coshaders can now be marked as not light dependent when using light categories on displays (#5101).

11.0.51 - 2014-03-18

- Fixed wrong trace() results in some complex shaders.

11.0.50 - 2014-03-15

- i-display: Layer picker now sends feedback to *Maya* for light intensities and selections.
- Fixed a crash when a coshader method resizes an array parameter which was not empty on entry (#5110).

11.0.49 - 2014-03-12

- Fixed a performance issue with texture lookups when displays with light categories are used (#5101).
- Unshadowed environment output of trace() is now masked by area lights just like the regular output.

11.0.47 - 2014-03-09

- Fixed some filtering issues with raytraced displacement.

11.0.46 - 2014-03-06

- The opacity() method of shaders is no longer systematically run before surface(). This may require updating some hand coded shaders to either include the opacity code in surface() or make an explicit call to opacity(). The opacity() method is now called directly by 3Delight only when the opacity is all that is needed, such as for transmission rays.

11.0.45 - 2014-03-04

- Fixed a filtering issue with textured area lights.
- Fixed a source of crashes.
- Added "displaceonly" query to rayinfo().

11.0.44 - 2014-02-27

- i-display: Now saves the current Color Profile so re-opening the software doesn't reset the profile to "none" (#4864).

11.0.43 - 2014-02-21

- Added "unshadowedenvironment" and "unshadowedarealight" outputs to trace().
- Fixed a precision issue with the illuminate() statement.

11.0.42 - 2014-02-20

- Build requested by fixes in the *3Delight For Maya* package.

11.0.41 - 2014-02-19

- Fixed a performance issue with the tiff display driver on windows.

11.0.40 - 2014-02-18

- Fixed rare NaN values with area lights.
- i-display: Fixed Mac OS X problems.

11.0.39 - 2014-02-13

- Changed exr channel naming for single float AOVs for better presentation in *Nuke* (#5042).
- i-display: Two useful LUTs have been added to the *View -> Color Profile* menu: REC 709 and sRGB. Additionally, LUTs can be changed anytime (there were previously applied on images at load time).

11.0.38 - 2014-02-11

- Added the ability for RiDisplay to fetch user attributes directly. Example:

```
Display "output_attribute.tif" "tiff" "color attribute:user:colorattrib"
```

- Ray-traced subsurface produces smoother results when using very long mean free paths (#5048).
- Fixed a performance issue with ray traced displacement when excessive bounds are used.

11.0.37 - 2014-02-07

- Fixed cracks with view dependant multi camera output.

11.0.36 - 2014-02-05

- Fixed a performance issue with raytraced displacement.

11.0.35 - 2014-02-05

- Fixed occlusion(), indirectdiffuse() and subsurface() when view dependent shading is used.
- Fixed timing statistics for displace methods.

11.0.34 - 2014-02-04

- Fixed a bug which sometimes caused incorrect and slow renders when tracing large displacement.
- Fixed incorrect "environmentcontribution" output from trace() when using "lightcategory" displays.

11.0.33 - 2014-01-31

- Fixed speckles which were sometimes introduced by the GI optimisation.
- Optimized some cases of subdivision mesh primitive variable evaluation.

11.0.32 - 2014-01-27

- Added support for motion blurred environment maps in trace() with the raytrace hider.

11.0.31 - 2014-01-24

- Fixed "eta" parameter of trace() and bsdf() which was inverted for all BSDFs except "glass-ggx".

11.0.30 - 2014-01-23

- Fixed sampling of area lights with falloff other than quadratic.

11.0.29 - 2014-01-20

- Fixes with multi-camera output when using REYES.
- Increased search range for textureinfo() with UDIM textures.

11.0.28 - 2014-01-17

- Added "arealightcontribution" parameter to the trace() shadeop.
- trace() now computes area light contribution even once the maximum trace depth is reached, as it already does for environment map contribution.
- Fixed negative raytracer memory statistics.

11.0.27 - 2014-01-15

- Improved area light sampling with specular BRDFs.
- Faster area light sampling with many lights.

11.0.26 - 2014-01-09

- Fixed orientation issue with RiCoordSysTransform.
- Faster area light sampling with many lights.

11.0.25 - 2014-01-08

- The ray-traced version of the subsurface() shadeop now supports the "model" parameter as well as a new "singlscatter" parameter. The model can be either "classic" (for the classic dipole) or "betterdipole" for the better dipole model. The "singlscatter" parameter is a scalar ranging between 0 and 1 indicating the strength of the single scattering effect. It is recommended to set this value to 1.
- Trace subsets now support intersection of group lists with the & operator.
- Fixed shader space on alternate cameras when using view dependent shading with REYES.

11.0.24 - 2014-01-06

- Fixed licutills which would not return a hostid on some newer linux distributions.

11.0.23 - 2014-01-03

- Fixed bugs in subdivision memory statistics. Memory consumption would sometimes appear much higher than it is.
- Fixed bugs in area light sampling.
- Added "float pixelaspectratio" and "float imageaspectratio" to RiMakeTexture().
- TIFF display driver is now able to write many layers/channels into the same file. Layers can have different bit depths and different data types (#4955).
- Fixed a hang with some combinations of subsurface and ray traced displacement.

11.0.22 - 2013-12-17

- Fixed some crashes to area lights (#4944).
- "transmission" type rays with trace() now always cause surfaces to shade black, regardless of the hitmode. The transmission output itself is unaffected.
- The time built-in shader variable is now varying and works correctly in the ray tracer (#4916)

11.0.21 - 2013-12-13

- Improved area light sampling.
- Fixed outputchannel() in a light shader when used together with display "lightcategory" (#4938).

11.0.20 - 2013-12-10

- i-display: Fixed a bug which prevented showing multiple layers.

11.0.19 - 2013-12-04

- i-display: Fixed an occasional crash when loading exr files.
- Fixed a bug with ray traced subsurface intensity.

11.0.18 - 2013-11-29

- Fixed a bug with autocropped exr files using zips compression sometimes having invalid scanlines.

11.0.17 - 2013-11-27

11.0.16 - 2013-11-23

11.0.15 - 2013-11-22

- Fixed bad interaction between GI optimisation and area light sampling.

11.0.14 - 2013-11-20

- Fixed ray traced displacement which was broken on some NURBS in 11.0.13.

11.0.13 - 2013-11-18

- Improved displacements when using the path tracer. Most of 'cracking' problems should be gone (#4663).

11.0.12 - 2013-11-15

- Fixed renderId -id flag when used with network render.
- Fixed a small bias which sometimes appeared in environment map sampling.
- Added attribute("Ri:CoordinateSystem:spacename", ...) query to SL.

11.0.11 - 2013-11-11

- Faster ray tracing of subdivision surfaces.
- Optimizations for matte surfaces with the raytrace hider.

11.0.10 - 2013-11-07

- Fixed subsurface() which was sometimes returning NaN.
- Added "Hider:progressive" and "Hider:editable" option() queries.

11.0.9 - 2013-10-30

- Improved quality of environment map sampling with trace().

11.0.8 - 2013-10-28

- Fixed some environment map sampling artifacts which would not go away easily even with large sample counts. This can have negative impact on results with small sample counts in some cases. In most cases, it is not noticeable either way.

11.0.7 - 2013-10-24

- Improved quality of environment map sampling with trace().

11.0.6 - 2013-10-22

- Fixed grouping membership tests for instances/procedurals. Grouping membership declared outside of instances/procedurals were not considered.
- Improved network cache statistics. Maximum cache size and used cache size are now reported. Additionally, network cache read and writes have a new timing category so they don't end up in "surface" timing profile.
- Implemented "__CPUtime" AOV with the raytrace hider.

11.0.5 - 2013-10-11

- Fixed getvar(null, ...) with uniform primvars and the raytrace hider (#4846).
- Added documentation and example for the Scene Edit API.

11.0.4 - 2013-10-09

- Fixed a bug in the Scene Edit API. Some light edits were ignored. This problem has been introduced in 11.0.
- Added the "glass-ggx" distribution to trace() and bsdf().

11.0.3 - 2013-10-06

- Fixed multi-camera bug with path-tracer : there was no motion blur in secondary cameras (#4828).
- i-display: Image pan/zoom is now done with left mouse button instead of middle mouse button. Consequently, image browsing is now with middle mouse button. Here is a description of the changes in more details:

| Mouse Buttons | Actions | Previous Actions |
|---------------|---------|------------------|
|---------------|---------|------------------|

| | | |
|---------------------|---|---|
| Middle Mouse Button | Image browsing. With SHIFT modifier: Fast image browsing (for playback scrubbing). | <i>Image Panning.</i> <i>With SHIFT modifier: Zooming.</i> |
| Left Mouse Button | Image Panning. With SHIFT modifier: Zooming. With COMMAND modifier: Define Zooming region. | <i>Fast image browsing (for playback scrubbing).</i> <i>With SHIFT modifier: Image browsing.</i> |

11.0.2

- Fixed missing camera motion blur in GI.
- Fixed precision issues with some trim curves.

11.0.1 - 2013-10-01

- Fixed a bug with per light output and motion blur.
- i-display: added image exposure and mid-tone controls (accessed through the Edit > Exposures... menu).
- i-display: layers inside an image are now saved correctly when using TIFF file format.

11.0.0 - 2013-09-28

- Improved responsiveness of IPR edits.