

What's New in Turtle 3.1

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General Improvements

Maya 8.0 support

Turtle has been compiled to support Maya 8.0, including the 64-bit versions of Maya 8.0 on Windows and Linux. As of this Maya 6.5 is no longer supported.

64-bit support

Turtle now includes 64-bit versions (for Windows and Linux), which allows you to address far more memory and render larger and more complex scenes than you ever could before.

New features

Separate light source intensity controls for different ray types

All light sources now has separate intensity controls for primary rays, reflection rays, refraction rays and indirect diffuse rays. By using these you can easily create a light source that only emits indirect light, doesn't emit any indirect light, only emits light in reflections, or whatever setup you can think of.

Radius Of Influence control on light sources

Point-, Spot- and Ambient light sources has a new control for radius of influence. Inside the sphere spanned by this radius light is emitted as usual, but outside the sphere no light is emitted. You have controls to set the decay/falloff between the center and boundary of the sphere to get a smooth transition to zero light at the sphere's boundary. This will also optimize shadow calculations since no shadow rays will be cast from surfaces outside the sphere.

Improved pre-tessellation of displacement maps

The algorithm for pre-tessellating displacement mapped objects has been rewritten. It can now be set to tessellate adaptively and only create as many triangles are needed, depending on the size and amount of displacement of the base triangles.

Displacement Bounds

The displacement shader now has controls for setting the displacement bounds manually. Normally the bounds are calculated automatically by Turtle. However, sometimes this calculation fails to find the correct bound, which can result in displacement artifacts. By setting the bounds manually you can avoid this problem. Setting the bounds as tight as possible will give better performance.

Render time smoothing of mesh normals

Polygon objects can be set to have their normals smoothed at render time. This is useful for pre-tessellated displacement mapping where you can have a much lower tessellation setting but still get a smooth result. It's also useful for getting a continuous sampling when doing Surface Transfer on objects with sharp edges.

Gamma correction

Controls for gamma correction has been added. You can adjust gamma on both input (textures and colors) and output (rendered frames).

Automatic hardware visualization of baked textures inside Maya

A new hardware shader has been added that can be used to visualize the results of texture baking and surface transfer, directly in Maya's model view. Light maps, normal maps, occlusion map, polynomial texture maps, e.t.c. can be rendered on objects in real-time. With a simple check box click, the setup for this is done automatically when a texture is baked, so you can see the results directly in the model view. This feature is currently only available on Windows.

Command line texture baking and surface transfer

Texture baking and surface transfer can now be done from the command line. You can specify which bake layers to bake and/or bake individual objects. You can also override any render or bake option in the scene by using argument flags.

Option to ignore inconsistent normals when using Surface Transfer

With this option you can choose to ignore intersections where the normals of the highres and lowres surfaces are inconsistent (pointing in opposite directions). The search will then continue until a surface with consistent normal is found

(or no surface is found). This will help you to pick the right surface intersection in areas with both front facing and back facing surfaces, e.g. around the ears or in the armpits of a character.

Surface transfer mismatch mode

You now have the option to use the lowres surface data in areas where no highres surface is found during surface transfer. Normally the background color is used in these areas, but in some cases using the lowres surface data is a better choice.

Albedo Pass

A new output pass for Albedo has been added.

Simple shared uv creator tool

A simple tool has been added for creating non-overlapping uv's for multiple shells.

Cleaner PTM baking interface

The interface for PTM baking is now more intuitive to simplify the setup.

Bugfixes

Fixed bugs with micro-triangle displacement mapping causing holes in the displaced surface.

Fixed support for bump mapping in direct/indirect illumination passes.

Fixed stencil in alpha option for surface transfer so it doesn't edge dilate misses inside the uv layout.

Fix for receiving GI on target surfaces in surface transfer.

Fixed cpu count detection for modern intel CPU's.

Fixed problem with license directories.

Fixed bug in surface transfer making the source surface visible to secondary rays.

Fixed motion blur bug. Sometimes rendered black tiles for fast movements.

Fixed problem with openexr default layer not being available.

UV coordinate computation fix in texture baking / surface transfer.

Fixed renderlayer behaviour in scenes with references.

Fix for bumpmap that makes sure the tangent and bitangent uses the same uv-set as the uv coordinate.

Fixed bug with Turtle Subdiv and wrong materials.

Fixed problem with link failure when missing certain light source attributes.

Fixed cpu dedection for single core P4 with hyper threading.

Fixed crash bugs when using displacement shader with no shader assigned.

Fix to handle namespaces.

Fixed user interface bugs.

Updated error reporting in license system.
Fixed crash bug for degenerated uv-sets.
Fixed bug with facing ratio.
Fixed bug in gamma correction node.
Fixed issues with bake visualizer and bake shader assignment.
Fixed bug in Edit UV's menu.
Fixed problem with HW shader not MP safe.