



**Autodesk®
Maya®**

2009

10th Anniversary Edition

Autodesk®

Release Notes

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Introduction to release notes



Release notes

Autodesk Maya 2009 release notes

The Maya 2009 release notes contain known limitations and workarounds for Maya and is organized into chapters according to Maya's functionality.

To find out which limitations were fixed for this release, see the following:

- [What's fixed in general](#) on page 3
- [What's fixed in Modeling](#) on page 4
- [What's fixed in Animation](#) on page 5
- [What's fixed in Deformers](#) on page 5
- [What's fixed in Character setup](#) on page 5
- [What's fixed in Rendering](#) on page 6
- [What's fixed in Artisan, 3D Paint, and Paint Effects](#) on page 12
- [What's fixed in Hair](#) on page 12
- [What's fixed in Fluid Effects](#) on page 12
- [What's fixed in nCloth](#) on page 13

- [What's fixed in API](#) on page 13
- [What's fixed in Architecture](#) on page 14
- [What's fixed in File Referencing](#) on page 15

What's fixed in Autodesk Maya 2009

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Release notes

What is What's Fixed?

In Autodesk® Maya® 2009, we've corrected some problems in the Maya software that have been reported by our customers. For new features and improvements, see What's New in Autodesk Maya in the *What's New in Maya* guide.

The following sections list the software limitations that were fixed in Maya 2009.

What's fixed in general

The following lists general limitations that were fixed in Maya 2009.

Camera overlays shift when using the ViewCube

Tumbling the perspective view using the ViewCube caused the Resolution Gate, Film Gate, Safe Action, Field Chart, and Safe Title camera overlays to shift position unexpectedly. This has been fixed.

What's fixed in Modeling

The following lists modeling limitations that were fixed for Maya 2009.

Map Borders options for Smooth incorrect

In Maya versions 8.0 and 8.5 the Map Borders options in the Smooth options window (Mesh > Smooth) were incorrectly mapped to their function. This problem has been fixed.

UV editor not snapping properly when retaining Component Spacing is on

In previous versions of Maya, snapping in the UV Editor behaved incorrectly when Component Spacing was on. This has been fixed.

Poly component convert selection

In previous versions of Maya, when you have multiple component types selected and choose a polygon action, Maya automatically converts the selection to that expected by the action, except for a few commands. This automatic conversion has now been implemented for the following:

- polyEditUV
- polyGeoSampler
- displacementToPoly
- untangleUV
- polyUVSet
- polyProjection
- polyNormalPerVertex
- polyForceUV
- polyFlipEdge
- polyColorPerVertex
- polyClipBoard
- polyBlindData

- polyAverageNormal
- blindDataType
- polyCreate
- polyUnite
- polySeparate
- polyBoolOp
- polyWedgeFace

In addition to those corresponding to the above commands, the following menu items have also been fixed:

- Extrude
- Transform Component
- Subdiv Proxy
- Duplicate Face
- Extract

What's fixed in Animation

The following lists Animation limitations that were fixed for Maya 2009.

What's fixed in Deformers

The following lists deformer limitations that were fixed for Maya 2009.

What's fixed in Character setup

The following lists Character setup limitations that were fixed for Maya 2009.

Deleting a character node

The performance of deleting a large character node has been improved.

What's fixed in Rendering

New attributes and shaders added

Focal Length available from Heads-Up Display submenu

You can now select Focal Length from the Display > Heads-Up Display submenu in order to display the focal length of the current camera.

Additional attributes for multi-render passes

Two additional attributes have been added to the new multi-render passes that are affected by shadows, for example, Diffuse and Specular.

Shadows : Use this option to turn shadows on or off for the selected pass.

Hidden Geometries Cast Shadows: When this option is enabled, objects that are not included by pass contribution maps will continue to cast shadows even though they are not visible in the scene.

New mental ray shaders added

mi_car_paint_phen_x shader

A mi_car_paint_phen_x shader has been added. This shader is similar to the mi_car_paint_phen shader, except that it returns multiple outputs in the form of a mental ray struct return.

mi_car_paint_phen_x_passes shader

Use this shader in conjunction with the multi-render passes feature. This shader has multiple output attributes that can be written to the multi-render passes. For example, you can write the diffuse attributes for the mi_car_paint-phen_x_passes shader to the Diffuse render pass that you created using the Render Settings window: Passes tab.

The mi_car_paint_phen_x and mi_car_paint_phen_x_passes shader have the same interface, with the same input and output attributes.

Not all passes are supported by this shader. The passes that this shader supports include: Beauty, Ambient Material Color, Diffuse, Direct Irradiance, Indirect, Reflection and Specular.

You can easily convert the mi_car_paint_phen shader to the mi_car_paint_phen_x or mi_car_paint_phen_x_passes shader. In the Attribute

Editor of the `mi_car_paint_phen` shader, expand the Upgrade Shader section, and click on the Upgrade shader to `mi_car_paint_phen_x` or Upgrade shader to `mi_car_paint_phen_x_passes` button.

The following lists rendering limitations that were fixed for Maya 2009.

mental ray for Maya rendering

Intersecting fluids now render accurately with mental ray

Previously, intersecting volume effects such as fluids, particle clouds and volumetric lights may cause artifacts in mental ray rendering. This has now been fixed.

Particles with light fog now render accurately with mental ray

Previously, adding particles to a light fog will cause the bounding box of the particles to appear in the render. This has now been fixed.

IPR and satellite rendering now works with default light

Previously, when the default light was used with IPR and satellite rendering, artifacts would appear. This has now been fixed.

Rendering fur in mental ray with directional light now works

Previously, scenes with fur rendered by mental ray may appear with grid-like artifacts (vertical and horizontal lines), when the Fur Shader is set to Hair Primitive (Fur > Fur Render Settings > mental ray), and the scene is lit by directional light(s). This has now been fixed.

Custom texture shader connections now exported correctly

Custom texture shaders which return a texture tag will be exported as a connection rather than a parameter when they are connected in Maya to a texture parameter on another shader.

Fluids now render correctly with mental ray for Maya

Previously, there were issues with fluids not rendering correctly with mental ray for Maya; for example, fluids would render out as a dot in mental ray from some angles. This has been fixed.

2D fluids now render in mental ray using 64-bit Windows

Previously, there were issues with 2D fluids not rendering with mental ray for Maya on 64-bit Windows. This has been fixed.

Light fog now renders correctly in orthographic views with mental ray for Maya

Previously, using mental ray for Maya to render light fog with decay regions turned on produced artifacts in the orthographic views. This has been fixed.

Volumetric lights now render correctly with mental ray for Maya

Previously, using mental ray for Maya to render volumetric lights produced artifacts at certain camera angles. This has been fixed.

Simple shadow method now support shadows for volumetric shaders

You can now obtain the correct shadows for volumetric shaders using the simple shadow method.

Depth map shadows now supported for particles

Depth map shadows now work with particles.

Batch render now supports changes in render stats

Previously, changes in the Render Stats that occur during animation was not supported by batch render and IPR in mental ray. This has now been fixed.

Time Contrast attribute now respected by particles

Previously, particles did not respect the Time Contrast attribute under the Render Settings: mental ray tabs, Quality tab, Motion Blur section, Quality sub-section. This has now been fixed. A lower value produces better motion blur for particles but increases render time.

mental ray renders now respect the Motion Quality Factor attribute

Previously, mental ray renders did not respect the Motion Quality Factor attribute under the Render Settings: mental ray tabs, Quality tab, Motion Blur section, Quality sub-section. This has now been fixed.

Set Driven Key now supported by mental ray for Maya

Shading attributes driven by Set Driven Key do not properly render in mental ray.

Level of Detail now supported by mental ray for Maya

mental ray now supports Level of Detail > Groups.

Improved support for mib_illum_ward_deriv shader

The base shader mib_illum_ward_deriv is extended to support derivatives on all geometry types, using "bumps" (texture derivatives) if available for NURBs and polygonal surfaces and surface derivatives for subdivision surfaces and NURBs. The source code of the get_derivs() function is a recommended illustrative example for shader writers.

Subdivision approximation ccmeshes now render correctly

Previously, seams were visible when rendering subdivision approximation ccmeshes. This problem is now fixed.

Transparent objects now render correctly when the Light Absorbance value is set

Previously, the Light Absorbance value (under the Raytrace Options of the material node) caused transparent objects to render black. This problem is now fixed.

Limitation removed for mental ray contour shaders

Previously, mental ray contour shaders could not handle large images with high resolution (for example, >6K). This limitation has now been removed.

Light linking now supported for miss_* shaders

miss_* shaders lightmaps now support light linking.

Per-face shader assignment is now respected

Previously, there was an issue with per-face shader assignment overrides. This problem has now been fixed and per-face shader assignment is now respected.

Contours now render correctly in mental ray for Maya

Previously, artifacts appeared occasionally when rendering contours in mental ray for Maya. This problem has now been fixed.

Batch rendering an AVI sequence now fixed

Previously, batch rendering an AVI sequence may create a NULL AVI file and you would need to switch to a different compressor or select the uncompressed setting instead. This has now been fixed.

mental ray rendering of softbody dynamics no longer creates artifacts.

Previously, artifacts may appear when mental ray is used to render softbody dynamics. This has now been fixed.

Maya crashes when mental ray is used to render particles as blobby surfaces

Maya no longer crashes when mental ray is used to render particles as blobby surfaces.

mental ray for Maya now queries light links at the object level

mental ray for Maya now queries light links at the object level rather than at the component level. This method resolves some issues that arise when light linking is interpreted incorrectly. To revert to the old behavior, use this mel script:

```
addAttr -at bool -ln "useComponentLinking" mentalrayGlobals;  
setAttr mentalrayGlobals.useComponentLinking 1;
```

mental ray for Maya has now improved support for bump mapping with multiple UV sets

Use the following mel script to enable this behavior:

```
addAttr -at bool -ln "exportMultiBumpBasis" mentalrayGlobals;  
setAttr mentalrayGlobals.exportMultiBumpBasis 1;
```

NOTE Enabling this behavior also increases the amount of data translated by mental ray for Maya, as each UV set now carries extra information.

Command line render to .iff or .psd no longer results in two separate files being rendered

Previously, a command line render to .iff or .psd, with Depth channel selected under Renderable Cameras, produced two separate files, one for z-depth and one for RGB. This has now been fixed and only one file is created.

Maximum values are increased for mental ray Rasterizer Quality attributes

In the Render Settings window: Quality tab, under the Anti-Aliasing Quality section and the Rasterizer Quality sub-section, the maximum for the Visibility Samples attribute has now been increased to 30 and the Shading Quality attribute does not have a maximum limitation.

Load of phenomena into Node Factory now delayed

Previously, if you choose to autoload your phenomenon file via the MI_CUSTOM_SHADER_PATH environment variable, and your phenomenon references another shader package, an error may occur if the shader package is loaded into the Node Factory after the phenomenon file.

This has now been fixed and mental ray for Maya waits until all shader libraries have been loaded and registered before loading your phenomenon.

To disable this feature, add a new MEL function to mentalrayFactory.mel:

```
global int miCustomNodesLatePhenomena()
```

which should return '0'.

Maya now builds the Attribute Editor properly for custom shaders and phenomenon.

Previously, Maya would not build the Attribute Editor properly when a shader or a phenomenon has struct parameters with certain types of member parameters as follows:

- If the struct has two or three members of either integer or scalar type parameters.
- When integer or vector type parameters are members of a struct.
- A struct is nested inside of a struct.

This problem is now fixed.

What's fixed in Artisan, 3D Paint, and Paint Effects

The following lists Artisan, 3D Paint, and Paint Effects limitations that were fixed for Maya 2009.

Using the Eye Dropper tool in the Paint Vertex Color tool

When using the Eye Dropper tool from the Paint Vertex Color tool, Maya didn't pick up the color being clicked. This has been fixed.

What's fixed in Hair

The following lists Hair limitations that were fixed for Maya 2009.

Evaluation Order attribute added the *hairSystemShape* node

An Evaluation Order attribute has been added the *hairSystemShape* node. Using this attribute, you can specify whether a Hair object's curves are evaluated in a cumulative (Sequential) or an order-independent manner (Parallel). When set to Sequential, output hair curves are evaluated cumulatively from the first to the last curve in the hair system. This setting can reduce the amount of stretch in output curves particularly in hair systems that have high numbers of hair curves. When set to Parallel, output hair curves are evaluated order-independently.

IKFK connected to Hair Systems

Previously, a scene with IKFK connected to Hair Systems would cause issues. This problem has been fixed.

What's fixed in Fluid Effects

The following lists Fluid Effects limitations that were fixed for Maya 2009.

Multiple processors for fluid rendering may result in system crash

Maya no longer crashes when using a multi-processor/multi-core machine to render fluids.

Fluid caching

Fluid caches are now created using nCaching, the Maya caching system used to cache nDynamics simulation data. With nCaching, the following previous fluids caching limitations are no longer relevant.

Segmented Fluid Caching fails if scene file name starts with a number

Segmented Fluid caching no longer fails if the scene file name starts with a number. You can nCache fluids using the *One file per frame* format without any file naming limitations.

Fluid Cache creation uses the current state as the starting point

When creating a cache for a fluid, you are no longer limited to using the current state of the fluid as the starting point for the cache.

What's fixed in nCloth

The following lists nCloth limitations that were fixed for Maya 2009.

Deleting nRigid objects on Windows 64-bit

Maya no longer crashes on Windows64 systems when you delete nRigid objects that are constrained to nCloth.

nCloth node display and Fields

Turning off display of nCloth nodes or hiding the nCloth shape in the scene no longer affects fields applied to the nCloth object. The fields now work as expected.

What's fixed in API

The following lists API limitations that were fixed for Maya 2009.

rotatePivot or scalePivot expression on MPxTransform error

An issue applying rotatePivot or scalePivot expression on MPxTransform caused Maya to crash this has been fixed.

moveTool.py and invoke spMoveToolContext

Previously, using moveTool.py and invoking spMoveTool Context caused Maya to hang. This problem has been fixed.

Verifying API version

An issue where users received a warning messages when checking the version of Maya has been fixed.

MSceneMessage::addCheckCallback error

An issue MSceneMessage::addCheckCallback not working in Maya Python API has been fixed.

MDGModifier::createNode() error

MDGModifier::createNode() failed to work in Maya 2008 this has been fixed.

MFnMesh::split() error

An issue where using MFnMesh::split() caused Maya to crash has been fixed.

What's fixed in Architecture

The following lists Architecture limitations that were fixed for Maya 2009.

IKFK connected to Hair Systems

Previously a scene with IKFK being connected to Hair Systems would cause a problem. This problem has been fixed.

Disconnecting multiparents

In previous versions of Maya, deleting the plug for a networked multiparent would cause Maya to crash this problem has been fixed.

apiMThreadPoolTest on PPC

An issue where using apiMThreadPoolTest on PPC caused Maya to crash. This problem has been fixed.

Error in appearing "Optimize Now" option

There was an issue with selecting items in Optimize Now menu options this problem has been fixed.

Example threading plugin generating an error

An issue where using apiMThreadPoolTest on PPC caused Maya to crash. This problem has been fixed.

What's fixed in File Referencing

Lock Status not respected

In previous versions of Maya, replacing references would cause a problem with the Lock Status. This has been fixed.

What's fixed in Scripting

The following lists Scripting limitations that were fixed for Maya 2009.

pymel crashes in Maya 2008

Using pymel command crashed in Maya 2008. This has been fixed.

fileBrowserDialog fileCommand flag function in Python

Previously in Maya fileBrowserDialog fileCommand flag did not function in Python this has been fixed.

fileBrowserDialog fileCommand flag crash CER in scanStringConstant on start up

Previously in Maya using scanStringConstant on start up would cause a CER crash. This has been fixed.

Unable to import md5 in the Python

Previously md5 format could not be imported in Python this has been fixed.

Basic interface

3

Release notes

General UI limitations

The following limitations and workarounds relate to general UI issues. For platform-specific UI issues, see:

- [Maya for Windows limitations](#) on page 130
- [Maya for Linux limitations](#) on page 130
- [Maya for Mac OS X limitations](#) on page 132

Camera overlays shift when using the ViewCube

Tumbling the perspective view using the ViewCube causes the Resolution Gate, Film Gate, Safe Action, Field Chart, and Safe Title camera overlays to shift position unexpectedly.

Workaround

Tumble the view using the Alt + left-mouse button.

Maya 3D Shockwave Exporter

Maya 3D Shockwave Exporter is no longer provided as part of Maya.

Tear-off menus and Windows XP

Tear-off menus in Maya have display problems when using Windows XP Style UI schemes.

Workaround

Select Start > Control Panel and double-click the Display icon. Select the Appearance tab and change UI scheme to Windows Classic.

Hotkeys disabled when using Attribute Editor in main window

If you have the Attribute Editor open in the main window, and you click it, type in a new value, and then press Enter, the keyboard focus stays in the Attribute Editor. This means your hotkeys will not work until you return focus to the modeling window.

Workaround

To get the focus back into the modeling window without changing anything else, move the mouse over the window and click with the middle mouse button.

Speeding up interactive performance on Linux machines

On Linux machines, you can speed up Maya's interactive performance by closing or hiding the Attribute Editor when you are not using it.

Selecting components with the Lasso Tool

The Lasso Tool, when the Selection Mode is set to Object, can sometimes fail to select objects or highlighted components. This will typically occur when the lasso approaches an item of higher Selection Priority.

Workaround

If selecting components, set the Selection Mode to Component.

Power saver software causes problems

If you are using power saver software or some screensavers that use OpenGL, Maya may shut down abnormally or cause system problems at the end of a Maya session or batch render. This problem has been reported on 64-bit systems.

Workaround

Disable power saver software when working with Maya.

Using menuItem in startup scripts breaks existing menus

When launching Maya with a mel script that contains the menuItem command, only the custom menus in the script appear in the main menu bar.

Workaround

Run the following .mel script before the script with menuItem in it.

```
global proc buildDeferredMenus()
{
    // File Menu
    buildFileMenu();
    // Edit Menu
    global string $gMainEditMenu;
    string $editMenu = "MayaWindow|" + $gMainEditMenu;
    buildEditMenu( $editMenu );
    // Assets Menu
    global string $gMainAssetsMenu;
    buildAssetsMenu( "", $gMainAssetsMenu );
    // Window Menu
    global string $gMainWindowMenu;
    buildViewMenu ( $gMainWindowMenu );
    // Help Menu buildHelpMenu();
    // Paint Effects menu
    global string $gMainCreatorMenu;
    string $creatorMenu = "MayaWindow|" + $gMainCreatorMenu;
    buildCreatorMenu ( $creatorMenu );
}
```

Japanese user interface

Custom install paths

It is recommended that custom install paths for Maya be specified using only ASCII characters. That is, typing multibyte text as part of the install path may produce unexpected results.

Multibyte node names and attributes

Maya does not support multibyte text when specifying node names and attributes.

Workaround

Do not use multibyte text for node names or attributes; only single-byte characters form valid node and attribute names.

Panel names appear in English when launching Maya files earlier than version 8.5

When loading pre-8.5 Maya files in the Maya 8.5 Japanese version, panel names may appear in English.

Workaround

Save the scene in Maya 8.5 and then re-open it to reset the panel names to appear in Japanese.

Syntax errors when using localized version of Maya

While most commands in Maya deal with multibyte text correctly, it is possible that using multibyte text in certain text fields of the user interface may result in a syntax error.

Workaround

Remove the multibyte characters from the text field and try again.

Scripting using multibyte text in Maya

Localized text in MEL that uses multibyte characters is only accepted when placed within quotation marks (`"textstring"`). Text strings comprised of multibyte characters not placed within quotation marks produce a syntax error when executed as part of a MEL command.

User interface panel/configuration name limitations

MEL and Python scripts that use English language panel/configuration names must be updated before they'll execute correctly on a localized version of Maya.

Workaround

Change the syntax of the script using the example below as a guide. For example, replace lines like:`getPanel -withLabel "Graph Editor"`with this:`getPanel -withLabel (localizedPanelLabel("Graph Editor"))`

Multibyte text when setting environment variables

Using the `Maya.env` file to initialize environment variables with multibyte characters may result in incorrect behavior or character corruption.

Workaround

Do not use multibyte text when initializing environment variables through `Maya.env`.

Multibyte text for defining name clash prefixes for file referencing

Maya does not support multibyte text when defining name clash prefixes for file references.

Workaround

Do not use multibyte text for name clash prefixes; only single-byte characters work.

Release notes

Installation and licensing notes

Latest dongle driver not automatically installed with Maya

The latest dongle drivers are no longer automatically installed with Maya. In previous versions, the latest dongle drivers were installed by default.

NOTE A *Troubleshooting* section in the *Installation and Licensing* guide incorrectly states that the (Windows) Maya installer upgrades the drivers for your hardware lock unless the current version already exists on your computer.

Workaround

Download and install the latest dongle driver from <http://www.aladdin.com/support/hasp/enduser.aspx>.

You can also install the version of the dongle driver included with Maya, although it is not guaranteed to be the latest driver and therefore not recommended.

Maya Software renderer requests license if MAYA_LICENSE environment variable is set

If you render with the Maya Software renderer, Maya requests a license if the environment variable MAYA_LICENSE is set to complete or unlimited.

There are several options for working around this limitation.

Workaround 1

Set the MAYA_LICENSE variable to empty (no value).

Workaround 2

Remove the MAYA_LICENSE variable and instead use a .bat file to load Maya.

For Maya Unlimited:

```
set MAYA_LICENSE=unlimited
start maya
```

For Maya Complete:

```
set MAYA_LICENSE=complete
start maya
```

Workaround 3

Run the Maya Software renderer from a command line in a shell where the MAYA_LICENSE variable is not set.

(Windows) License server fails on first reboot

The first time you reboot a license server machine after setting it up as a Maya license server, the lmgrd.exe process fails.

Workaround

The first time you start the license server, do so manually using LMTOOLS.

NOTE Only the first time starting the license server needs to be done manually. On subsequent reboots the license server starts normally.

To manually start the license server

- 1 Select Start > All Programs > Autodesk > Common Utilities > FlexLM License Utilities.
The LMTOOLS window opens.
- 2 Click the Start/Stop/Reread tab and click Start Server.

Assets limitations

Loading a container from Maya 2008 or earlier results in a warning message

In Maya 2009, containers can no longer contain non-container nodes from other files. These disallowed nodes are automatically removed from the container at file read time. A warning message will be issued for any impacted nodes.

Workaround

Open the referenced file and place the referenced nodes into a container. Then make that container a subcontainer of the parent scene's container.

Transparency on custom container icons

Custom container icons in the hypergraph do not support transparency. Transparent sections will appear grey in the hypergraph. In the Outliner, transparency only works on Windows platforms. On Mac they appear green, while on Linux they appear black.

First loaded template errors always report as Types.template

Maya periodically gives an invalid error message saying that Types.template has errors. This actually means that the first container template file that Maya tried to load has errors in it.

Workaround

Determine the actual template file that has errors and delete it or fix it.

Too many published attributes make selection slow when the Channel Box is open

By default, the Channel Box displays a maximum of 400 attributes to prevent Channel Box generation from interfering with selection speed.

Workaround I

In the Channel Box, select Show > Containers > Selected object attributes.

Workaround 2

Create a template with a variety of views that group together the attributes of interest. Then set the container's View Mode to Use Template and choose the view you want. Only those attributes will be shown in the Channel Box.

Workaround 3

You can modify the limit used by the channel box with the optionVar's containerChanBoxMaxWithTemplate and containerChanBoxMaxNoTemplate.

For example:

```
optionVar -intValuecontainerChanBoxMaxWithTemplate 1000
```

A negative value here prevents the channel box from culling any attributes.

Slider for published float value may scale too large

Dynamic attributes that are published to a container and do not have assigned min and max values are displayed in the container UI with default soft min and soft max values as follows:

- unitless attributes: -25 to 25
- linear attributes: -100 to 100
- rotation attributes: -360 to 360
- scale attributes: -10 to 10

Workaround

Use the softMinValue and softMaxValue flags on the addAttr command to assign custom soft min and soft max values to an attribute.

Asset Editor refreshing after Undo

The Asset Editor does not auto-refresh after you undo a bind or publish operations. Although the undo works properly, the Asset Editor does not reflect the results.

Workaround

Unpin the container and then pin it again or click the Refresh button.

Remove from container options

By default, when a transform is removed from a container, the relevant shape node is removed with it. This is similar to turning on Include Hierarchy and setting it to Shapes, when using the Add to Container option.

Workaround

The optionVar "containerRemoveIncludeHier" can be used to modify this behaviour. Setting it to the following values will have the indicated effect:

- 0 - Include Hierarchy is off
- 1 - Include Hierarchy is on and set to Shapes
- 2 - Include Hierarchy is on, and set to Below (includes shapes)
- 3 - Include Hierarchy is on, and set to Above
- 4 - Include Hierarchy is on, and set to All (below and above)

The default value is 1.

Asset Editor and Attribute Editor performance with many attributes

When a container is displayed in Flat view mode, with more than 40 published attributes, any attributes beyond the first 40 are organized into groups in the AttributeEditor and Asset Editor. Each group is displayed in its own frame to improve UI performance. You can set the size of these groups with the FlatViewCap optionVar. The values and results are as follows:

- 0 disables the grouping entirely
- a value greater than 12 sets the groups to that size.
- any other value will result in a group size of 12.

The default value is 12.

Release notes

Animation layer notes and limitations

The following notes and limitations relate to animation layers in Maya.

Locking non-layered animation while keying on layers

Non-layered animation curves in your scene (the base curves of attributes assigned to layers and any curves of attributes not assigned to layers) are represented by the BaseAnimation bar in the Animation Layer Editor. If your workflow involves creating layered animation on top of existing animation, you may want to lock those non-layered curves to prevent them from receiving keys as you keyframe on layers.

The Lock button on the BaseAnimation bar lets you protect those non-layered animation curves so they don't receive keys as you key on layers. When the BaseAnimation lock is on, the non-layered curves represented by the BaseAnimation bar cannot receive keys.

NOTE Because the BaseAnimation locking feature was added after the completion of the Maya 2009 documentation, images of the Animation Layer Editor in this documentation do not show the BaseAnimation lock.

Maya and MotionBuilder layer interoperability

As a result of the logistics required to deliver both Maya and the independent release of FBX and all its plug-ins, importing layers from MotionBuilder to Maya

is not currently supported by the FBX plug-in for Maya. If you import layers from MotionBuilder to Maya, all layered animation will be baked.

For more information on the FBX plug-in for Maya and to check for the latest releases of the FBX plug-ins go to <http://www.autodesk.com/fbx>.

General animation limitations

The following limitations and workarounds relate to general animation issues in Autodesk® Maya®.

Caching objects with changing topology

Caching produces useful results on objects whose topology does not change over time. Some animated modeling construction history operations result in topology changes over time. While you can create a cache for these objects, it may distort the object during playback since a constant topology is assumed.

Cut Keys with Shape option only works when shape is expanded in Channel Box

You can only cut keys from an object if its shapeNode it is expanded in the Channel Box.

Workaround

To Cut Keys on Shapes, you need to have the Shapes option enabled, and you must also have the shape node expanded in the Channel Box.

Pair blend/quaternion animation curve combination can cause jump on creation

If your rotation curves default to synchronized quaternion interpolation, setting a key on a constrained object can cause the orientation of the object in question to jump.

Workaround

Re-enter the rotation values you wanted to key to, and re-key the rotation channels.

Quaternion animation curves not correctly converted to Trax clip

Workaround

Quaternions in clips will only work properly if all three rotate channels are included in the character. This happens automatically if you use Maya's automatic character creation. However, if you create your character manually, you need to include all three rotate channels in the character if you want to use quaternions.

Synchronized quaternion curve

For synchronized quaternion curve, all three rotation channels on the object should exist at all times. Deleting one of the rotation channels will have unexpected results, such as changing the animation on the remaining channels.

Workaround

Convert the curve to Euler angles before deleting the channel. Or set the rotation keys on the channel to a static value rather than deleting the channel.

Synchronized Quaternion rotation interpolation limitation

When keyframing rotations using the Synchronized Quaternion preference, rotations will be clamped between +/- 360 degrees.

Unexpected behavior of animation if all three channels unsynchronized when modifying using the API

If you modify the keys of a synchronized animation curve (quaternion or synchronized Euler) using the API, you must keep all the keyframes synchronized on the three rotation channels. If all three rotation channels are not synchronized, your animation will behave unexpectedly and eventually crash.

Options in option windows (Edit > Keys menu) disabled for current characters

When a character is current, options in several option windows are disabled. The options are disabled because they operate on all the attributes of the current character. The option windows affected are the ones under the Edit > Keys menu item.

Workaround

Set the current character to None.

Ghosting and simulated objects

Attempting to apply ghosting to simulated objects such as particle simulations, soft bodies, rigid bodies, cloth and jiggle deformers may result in unpredictable reactions.

Workaround

Create a disk cache for the simulation.

Preferred angles on joints controlled by IK handles

Using Skeleton > Set Preferred Angle on joints in a chain controlled by an IK Handle will appear to have no effect.

Workaround

- Create the IK Handle after setting the preferred angles of the joints.
- Delete the IK Handle and then invoking "Undo" to restore yields an IK solution that respects preferred angle.

Deleting the top level character

If a character with subcharacters is deleted, and the subcharacters are not deleted, the subcharacters will no longer be recognized by the Maya UI because they are no longer part of the character partition.

Workaround

Manually add the characters that are now the top-level characters into the characterPartition by typing:

```
partition -add characterPartition <subCharacterName>;
```

FBIK and Auto Key

When working with full body IK, Auto Key will always set keys for the full body, even if your keying mode is set to Body Part or Selected.

Workaround

To set only Body Part or Selected Keys on full body IK rigs, you must disable Auto Key and set the keys manually.

Animation playblast limitations

The following limitations and workarounds relate to the Playblast window in Maya.

Playblast escape limitation

Before you can escape from playblast you have to wait for entire sound track to record.

Large imported audio files delay Playblast

The playback time of Playblast may be severely delayed in scenes with large imported .aiff audio files. For example, a 40MB .aiff file may cause a 20+ second delay between the initial command call and playback.

Workaround

View and play all (as long as your audio clips do not overlap) your loaded audio files from the Trax Editor or use multiple short audio files rather than single large audio files.

Sync problems with long aiff files

If you are playblasting sound with large negative offsets, you may encounter audio synchronization problems.

Workaround

Shorten your audio files so you don't need to use large negative offsets.

Dope Sheet limitations

The following limitations and workarounds relate to the Dope Sheet in Maya.

Dope Sheet Manipulator disappears

When using the Dope Sheet manipulator, expanding or compressing any channels in the Dope Sheet will cause the manipulator to disappear.

Workaround

Redo your selection to restore the manipulator.

Cut and Paste hotkeys do not use their settings from Edit > Copy or Edit > Paste in Dope Sheet

When using the Cut (default: Ctrl+x) or Paste (default: Ctrl+v) hotkeys with the Dope Sheet Manipulator, the hotkeys do not use the settings in their respective Dope Sheet menu option windows. Instead, they always shift your animation to accommodate the removal or insertion of time and keys.

Graph Editor limitations

The following limitations and workarounds relate to the Graph Editor in Maya.

Copy/paste keys in Graph Editor

When cutting and pasting keys that include multiple animation curves to multiple attributes, pay particular attention to the order that you select them, as this will impact the order in which they are pasted.

When cutting keys from multiple attributes in the Graph Editor or Dope Sheet, select the attributes from the Outliner-not the view area-of the respective editor.

Trax Editor limitations

The following limitations and workarounds relate to the Maya® Trax™ Editor.

Merging characters copies clips but not the blends between clips

Workaround

Restore the blends manually after merging.

Clips in Trax that have the same start time or end time may jump

Clips in Trax that have the same start time or end time may jump when the clip starts/ends if there is a blend between them.

Workaround

Do one of the following:

- Modify the hold on the final clip to control how long it plays.
- Use “Merge” on the blended clips to create a single clip.
- Create a pose that corresponds to the start or end point of the blended clips, then drag and drop the pose into Trax immediately before or after the blended clips to force the character to keep the pose before or after.

Unable to create layered animation on top of a relative clip

Workaround

Merge the relative clip to replace the relative clip with an absolute clip, then create the layered animation on top of the absolute clip.

Blends not working for certain clip configurations

When an absolute clip is followed by a relative clip and then blended into another absolute clip, the blend may behave incorrectly.

Workaround

Create a hold for the first absolute clip and drag it to the end of the relative clip. Blend this with the second absolute clip. You should now have the correct animation.

Changing animation frame rate can cause Trax time warp and blend problem

If you change the animation frame rate, Trax time warps and blend curves do not scale properly.

Workaround

All time warp and blend curves must be scaled to compensate for the frame rate change. They are supposed to always be between 0 and 1, but when the frame rate changes they get scaled to fit the new frame rate. You must scale the curves to fit between 0 and 1 in the time range.

Parenting a Cloth object to a Trax character

When a Cloth object is parented to a Trax character, the Trax Editor will not evaluate Cloth correctly.

Workaround

Select the object and cloth node and unparent them from the main character's hierarchy. Delete the Cloth cache and run the simulation.

Path animation limitations

The following limitations and workarounds relate to path animation in Maya.

Geometry popping out of flow lattice

If a transform object with several pieces of geometry grouped under it is animated with path animation, and then flow is applied with the lattice around the object option, occasionally some of the geometry may “pop out” of the flow lattice.

Workaround

Do one of the following:

- Set the Outside Lattice attribute for the FFD to “All” so that all the geometry grouped under the transform object is affected by the flow lattice.
- Select the base lattice of the flow’s FFD and scale it a little larger until the geometry “pops back” inside the flow lattice.

Character setup

6

Release notes

General character setup limitations

The following limitations and workarounds relate to general character setup issues in Autodesk® Maya®.

When you delete a top-level character set, Maya no longer recognizes its subcharacters

If a character with subcharacters is deleted, and the subcharacters are not deleted, the subcharacters will no longer be recognized by the Maya UI because it is no longer part of the character partition.

Workaround

Manually add the characters that are now the top-level characters into the characterPartition by typing:

```
partition -add characterPartition <subCharacterName>;
```

Skeleton and Inverse Kinematics limitations

The following limitations and workarounds relate to skeleton and inverse kinematics issues in Maya.

Advanced twist attribute on ikSpline only works for joint orientation +x

The advanced twist attributes on the ikSpline solver assumes a joint orientation of +x.

Insert joint tool does not work at certain angles

The insert joint tool does not work if joint pivot display is off and the camera is tumbled to some specific camera angles.

Workaround

Enable joint pivot display or move the camera slightly.

Set Preferred Angle limitation

Using Skeleton > Set Preferred Angle on joints in a chain controlled by an IK Handle will appear to have no effect.

Workaround

Create the IK handle after setting the preferred angles of the joints. Alternatively, deleting the IK handle and then performing an Undo operation to restore it will yield an IK solution that respects preferred angle.

Skinning limitations

The following limitations and workarounds relate to smooth and rigid skinning issues in Maya

Colorized skin weight display for vertices does not work for NURBS or Subdivision Surfaces

The colorized skin weight display on *vertices* (set by the Colorize Skeleton option in the Smooth Bind Options window) is only supported for polygonal objects. However, skin weight coloring for *surfaces* is supported on all geometry types.

Deformers

7

Release notes

General deformer limitations

The following limitations and workarounds relate to deformers (non-skin deformations) in Autodesk® Maya®.

Adding a new influence object to a smooth skin

If you add a new influence object to a smooth skin, it will not immediately appear in the Component Editor.

Workaround

Close the Component Editor and reopen it.

Unpredictable results when changing an object's topology upstream from a deformation

Changing an object's topology upstream from a deformation causes unpredictable results. When you deform an object, Maya generates references to some of the object's components (CVs of NURBS curves or surfaces, polygon vertices, or deformed lattice points).

There are several ways to change the topology (for instance, the number of such components the object has) "upstream" of the deformations. For example:

The Rebuild Curve operation may change the number of CVs in a curve, changing the sections or spans attributes of a makeNurbSphere node may change the number of CVs in the resulting NURBS surface, and the Polygons > Smooth operation can drastically change the number of polygon vertices in the smoothed object. Unfortunately, Maya does not yet have a way to communicate these changes to the nodes downstream in a way that allows the “right thing” to happen.

Workaround

If the object being modified is being deformed: remove the object from the deformer’s deformation set, apply the topology-changing operation, and then restore the modified object to the deformation set. If the deformation was a cluster and you had edited the associated percentages, you must repeat that step after changing the object’s topology.

If the object being modified is bound as skin to a skeleton: Detach it from the skeleton (Skinning > Detach Skin), apply the topology-changing operation, and then rebind the skin (Skinning > Bind Skin).

If the object being modified is a curve used as a wire curve (for instance, it is the “influence object” for a wire deformation): Remove the curve from the wire deformer, change its topology, and then add it back to the wire.

Other examples of this limitation

■ Wrap behaving unpredictably

If you modify the face or CV count of shapes used as wrap deformers, the wrap behaves unpredictably.

Workaround

Remove the shape as an influence object and then add it as an influence object again. This will reset the data for the wrap so that it will work again.

■ Changing the CV count of a deformed object downstream

If you change the CV count of a deformed object downstream (after) the deformation, translate, rotate and scale of the CVs of the object may affect the wrong CV. Examples of operations that would cause this problem are: inserting or removing a knot on a NURBS surface, or deleting a polygon face or vertex.

Workaround

Disconnect the message attribute connection between the deformed shape and the tweak node. To do this, select the shape and display its history in the Hypergraph. You will see a connection between a tweak node and the shape. Select the connection and press the Delete key to break the connection.

Lattices with partial resolution may distort target geometry

The loss of accuracy caused by the Partial Resolution Lattice deformer setting may severely distort lattice deformed geometry.

Workaround

Decrease the value of the Lattice deformer's Partial Resolution attribute, or use Full Resolution.

Jiggle deformers may not evaluate properly when used in combination with Fur or motion blur

Workaround

Batch rendering of Fur objects and motion blur with the jiggle deformer requires the creation of a jiggle disk cache.

Ghosting is not reliable on jiggle deformations

Workaround

Creating a jiggle disk cache will typically allow ghosting to work on the jiggle object.

NURBS modeling

8

Release notes

NURBS modeling limitations

Bevel Plus limitation

In some rare occasions when Bevel at Start is turned off, undesirable results may occur if the end face becomes self-intersecting.

Workaround


Turn on Bevel at Start, turn off Bevel at End and set the Bevel Depth and Extrude Distance to negative values (precede the value with a "-"). If required, modify the original curve to ensure desired results.

Convert NURBS to Subdiv for groups returns an error

Sometimes when using the Modify > Convert > NURBS to Subdiv on groups of NURBS objects, Maya returns the following error:

```
// Error: More than one object matches name
```

Workaround

Select Modify > Convert > NURBS to Subdiv >  . In the NURBS to Subdiv window, turn on Keep Original and then click Create. A converted version of your NURBS group appears on top of the original group. Delete the original group.

Create Adobe Illustrator Object limitations

Illustrator version compatibility

Maya is only compatible with Adobe Illustrator 8 files. Attempting to import Illustrator files created in other versions may yield unexpected results.

Workaround

If you are working in a version of Illustrator other than 8, convert the files to Illustrator 8 format.

Unexpected results when importing an Illustrator file

In certain cases, you may find that an imported Adobe Illustrator file shows points shooting off or other strange geometry.

Workaround

You may be able to fix the problem by changing the position of the origin or type in the Illustrator file and re-importing.

Adobe Illustrator file does not import

In a compound path if the inside path is behind the outside path you get the following error message when attempting to import the file into Maya:

```
// Error: bevelPlus1 (Bevel Plus Node): Group 2 curve 4 is not inside  
the previous curve. Group these curves appropriately in Adobe (R)  
Illustrator (R)  
  
// Error: Failed to create bevel output //
```

Workaround

You may need to fix the groupings and compound paths in the Adobe Illustrator file. To do this:

- 1 Open the file in Adobe Illustrator.
- 2 Select the compound path.
- 3 Select Object > Compound path > Release.
- 4 Select the outer path.

- 5 Select Object > Arrange > Send to Back.
- 6 Select both paths.
- 7 Select Object > Compound Path > Make.
- 8 Save the file and import it into Maya.

If Maya doesn't import anything, you need to perform the Create > Adobe Illustrator Object operation again.

Beveled text does not tessellate correctly when rendered

Sometimes the surface created using Create > Adobe Illustrator Object and Bevel appears fine in wireframe mode, but displays poorly in shaded mode. These kinds of surfaces do not render well in the Maya renderer because of poor tessellation.

Because mental ray uses a different tessellation algorithm, rendering with mental ray can produce significantly better results.

Subdivision Surfaces

9

Release notes

Subdivision Surfaces limitations

Weight field for a subdivision surface vertex member of a deformer set may appear blank

The weight field for a subdivision surface vertex member of a deformer set (cluster, skinCluster, or jointCluster) may sometimes appear blank, and entering new weight values has no effect.

Workaround

Pick the cluster handle or joint and select the cluster members by using Edit Membership Tool. Use the Component Editor to now display and edit weight values for the cluster members. If you turn off List >Auto Update in the Component Editor window, clicking the name of the component in the first column of the table will identify the cluster member by selecting it in the scene view.

Unexpected results with non-proportionally scaled Subdivision surfaces

Subdivision surfaces with non-proportional scale and hierarchical edits may not behave properly when a rotation is applied to the coarse mesh components (including base).

Workaround

Use Modify > Freeze Transformations with the scale option set to remove the non-proportional scale from the object in question.

Selecting UV vertices on texture borders in the UV Texture Editor

In the UV Texture Editor, selecting UV vertices that are on texture borders may sometimes result in multiple vertices being picked.

Clean Topology in the UV Texture Editor causes UV distortion

Using the Subdiv Surfaces > Clean Topology option on a subdivision surface in the UV Texture editor may distort the UVs.

Workaround

Right-click the subdivision surface and select Polygon from the marking menu. Open the Hypergraph Hierarchy and select the polyToSubdShape1HistPoly node. Select Subdiv Surfaces > Clean Topology.

File referencing with Subdivision UVs

When referencing a file that contains a subdivision surface with UVs, the UV information is included in the parent file.

Polygons and games

10

Release notes

General polygon and games limitations

The following lists general polygon and games limitations and workarounds.

Selecting a Vertex or Face loop mis-documented

In the documentation for selecting a vertex loop or a face loop on a polygon mesh, step 3 states that you must double-click an adjacent vertex or face in the direction you want the loop. In actuality, you must hold the Shift key and then double-click an adjacent vertex or face in the direction you want the loop.

Crease node with history can affect Smooth Mesh performance

The interactive performance of vertex edits to polygon meshes displayed in Smooth Mesh Preview mode may be adversely affected whenever a crease node is contained in the construction history. This is noticeable immediately after the first click-drag of the mouse.

Workaround

Avoid having a crease node in the polygon meshes construction history, or delete the construction history before performing the vertex edits.

Magnet tolerance when using Insert and Offset Edge Loop tools

The Insert and Offset Edge Loop tools only snap to the ends of a selected edge whenever the Snap magnets preference setting is greater than 0 and the Magnet tolerance setting is set to a high value (for example, 10).

Workaround

Reduce the Magnet tolerance setting to a lower value, or set the Snap magnets setting to 0.

Shared faces with opposite UV winding may have normals reversed

When working with UV maps on a mesh that has two faces with opposite winding orders, but that share UVs across one edge, the normals on one face may display incorrectly, as if the face was split down the middle and flipped.

Workaround

For many scenes with this problem, unshare either the UVs or the normals along the shared edge to correct the problem.

Combining instanced polygon meshes may delete geometry

Combining two instanced polygon meshes using the Combine command can result in one of the two polygon meshes being deleted without prior warning. This occurs when the transform node for one of the selected polygon meshes has more than one DAG path from the root level.

Workaround

If this occurs, duplicate the polygon meshes using the Copy option prior to using the Combine command.

Shell option in Constraint Selection feature selects UV texture shells instead of polygon shells

In previous versions of Maya, the Select Using Constraints feature (Select > Select Using Constraints) selected polygon shells when the propagation option was set to Shell. In Maya 8.5 this behavior changed so that only UV texture shells became selected.

Workaround

Select a component on the object where you want to select a polygon shell and then convert the selection by selecting **Select > Convert Selection > To UV Shell**.

UV layouts appear different on other platforms and versions

Recent changes to how floating point calculations are computed in Maya has resulted in changes to the order in which UV shells are calculated. As a result, the layout of UVs may appear different when the file is subsequently loaded in Maya on a different hardware platform or a later version, particularly when the original UV layout has been edited.

Workaround

Delete the history in the original file and then save it before attempting to open it on another platform or version.

Black color per vertex values are not saved on corner vertices

Black color per vertex values that are assigned to corner vertices of a polygon mesh are not retained when the file is saved. The CPV information on the corner vertices of the mesh values appears white or grey when the file is subsequently opened.

Workaround

If you need to apply black CPV values to corner vertices, use a small numerical value instead of 0. (For example, 0.01)

Maya does not maintain the order of selected components

The global selection list does not preserve selection order of polygon mesh vertices, faces, edges.

Workaround

Use the following script to collect each selected component in an array, and then use the array as desired.

```

global proc selectProc() {
global string $gSelectedComponents[];
string $selC[] = `ls -sl -flatten`;
if (size($selC) > 0) {
int $match = 0;
for ($newSel in $selC) {
$match = 0;
for ($oneComponent in $gSelectedComponents) {
if ($newSel == $oneComponent) $match = 1;
}
if ($match == 0)
$gSelectedComponents[size($gSelectedComponents)] = $newSel;
}
}
else {
clear ($gSelectedComponents);
}
int $debug = 1;
if ($debug && (size($selC) > 0)) {
print ("Selected components (in the order) ...\n");
print ($gSelectedComponents);
print ("\n"); } } // to load the scriptJob
int $jobNum = `scriptJob -e "SelectionChanged" "selectProc"`; //
to unload the scriptJob scriptJob -kill $jobNum;

```

Blend weights limited to 0 to 1 range in Color Set Editor

Blending color sets using the Blend option in the Color Set Editor results in the blend weights being limited to the 0 to 1 range when the image is rendered. That is, blend weight values higher than 1 are clamped to a maximum value of 1. This is a known limitation of the OpenGL default rendering pipeline.

Polygonal faces disappear in shaded mode

When you apply a Freeze Transformations operation on an object, the “opposite” rendering option is automatically turned on. This means front-faced polygons are culled when in back-face culling mode in 3D views.

However, when back-face culling (Shading > Backface Culling) is also on in the polygon display options, back-faced polygons are also culled. If the object is not selected, all the polygonal faces are culled in shaded mode display making it seem as though the object has disappeared.

cp attribute limitation

On polygonal objects, the cp attribute is supposed to represent the actual position in local space of a vertex, while the pnts attribute represents the tweak value (its offset relative to the rest position).

The cp attribute is a compound attribute with child attributes named xv/yv/zv. When you get the value of the parent attribute, Maya incorrectly returns the same value as for the pnts attribute.

Workaround

Use the xv/yv/zv child attributes individually instead of the entire cp compound attribute.

For example:

```
polyCube; select -r pCube1.vtx[0] ; move -r .1 .1 .1; getAttr  
pCube1.cp[0]; // Result: 0.1 0.1 0.1 // getAttr pCube1.cp[0].xv;  
// Result: -0.4 // Real X position (-.5 + .1)
```

polySeparate command

The polySeparate command fails if the object is invisible.

The error message in this case can be misleading:

```
Warning: polySeparate works only on polygonal objects.
```

Workaround

Make the object visible.

Booleans do not preserve color per vertex and component level blind data info

Mesh > Booleans operations do not preserve color per vertex or component level blind data information.

Flipping edges from multiple objects

Flipping edges from multiple objects at the same time can lead to a crash.

Workaround

Select and flip edges from one object at a time.

Color per vertex animation not working for polygonal objects without history

Color per vertex animation will not work for polygonal objects which do not have modeling/construction history.

Workaround

Introduce some benign construction history (such as a move component operation that doesn't actually move anything).

Unexpected results in Cleanup when removing lamina faces and non-manifold geometry

When using Cleanup, combining the removal of lamina faces with the removal of non-manifold geometry can lead to unexpected results.

Workaround

Clean up the lamina faces first. In many cases, this also eliminates the non-manifold geometry.

MfnMesh limitations

The MFnMesh::assign UVs() method does not properly support history. As a result, UVs can be removed as history rebuilds the object.

The MFnMesh::create UVSet() method does not work if the MFnMesh is using mesh data.

Envelope attribute for Transfer Attributes

The Envelope attribute is not supported for TransferAttributes.

User defined normals ignored on skinned polygon mesh

User defined (locked) normals are ignored on a non-uniformly scaled polygon mesh when it is subsequently skinned.

Workaround

Freeze transformations on the polygon mesh prior to skinning.

Soft Selection causes UVs rotated 180 degrees to flip

When Soft Selection is on and you attempt to rotate a set of vertices 180 degrees, the selection flips from positive to negative rotation (or vice versa).

Workaround

Rotate the selected vertices in several, smaller increments.

Tweak mode hotkey problem for non US-EN keyboards

When using a non US-English standard keyboard, the Tweak mode hotkey (``) does not work.

Workaround 1

Toggle Tweak mode on and off through the Tweak mode option in the Move Tool settings.

Workaround 2

- 1 Select Window > Settings/Preferences > Hotkey Editor.
- 2 In the Hotkey Editor, under Categories, select Modify. Then, under Commands, select STRSTweakModeOn.
- 3 Under Assign New Hotkey, enter the key but do not use a modifier.

NOTE If you do not want to interfere with Maya's default hotkeys, set this value to the '9' key.

- 4 Set Direction to Press.
- 5 Click Assign.
- 6 Select STRSTweakModeOff under Commands.
- 7 Repeat steps 3 - 5 using the same information, but set Direction to Release in step 4.

Workaround 3

Set your keyboard to English - United States IME while using Maya. For more information see your operating system documentation.

Per instance Color Per Vertex support

You can now create separate Color Per Vertex data for each instance of an object in your scene. This works very similarly to creating instanced Color Per UV data. For more information, see What's New in API.

To create instanced Color Per Vertex data

- 1** Right-click an instance of an object and select Color Sets > Color Set Editor from the marking menu.
The Color Set Editor appears.
- 2** In the Color Set Editor, click New.
The Create Empty Color Set options appear.
- 3** Set Color Set Sharing to either Per Instance Shared or Per Instance Unshared depending on the behavior you want.

Remember This Layout option unavailable for Polygons tabs in the Component Editor

When working in the Component Editor, the Options > Remember This Layout option is unavailable for the Polygons tab and the AdvPolygons tab.

Artisan, 3D Paint, and Paint Effects



Release notes

Artisan limitations

The following lists Artisan limitations and workarounds.

Paint Vertex Color Tool

Map Import/Export cannot be used when painting vertex faces as opposed to vertices.

Color feedback in Artisan tools

- Although they work the way they should, trimmed surfaces do not display color feedback in Artisan tools.

Exporting attribute maps from NURBS surfaces

Exporting attribute maps will not work correctly for NURBS surfaces with a degree other than 3.

Importing subdiv edge selection map

Importing subdiv edge selection map will not work.

Workaround

Import them as Vertices and convert the selection to edges.

3D Paint Tool limitations

The following lists 3D Paint Tool limitations and workarounds.

Unable to paint on textures assigned to layered shaders

You cannot paint on textures assigned to layered shaders.

3D Paint slow with large textures

If you find a large slowdown in performance when editing larger than 1K by 1K images then this could be due to insufficient video card memory to display textures at that resolution.

Workaround

You have the option to clamp the maximum size of textures used for display by setting the Maximum Texture Display Resolution, which is in the Display category of the Preferences window (Window > Settings/Preferences > Preferences). It is recommended that you restart Autodesk® Maya® in order for these settings to take effect.

Texture placement

The 3D Paint Tool ignores any changes you make to texture placement parameters.

Workaround

Convert the texture with modified texture placement to a file texture (Edit > Convert to File Texture, in Hypershade) and paint on the converted texture.

Painting with Fast Interaction

The 3D Paint Tool doesn't work when Display > Fast Interaction is turned on.

Workaround

Turn Fast Interaction off while painting.

Paint Effects limitations

The following lists Paint Effects limitations and workarounds.

Self-shadowing and directional lights

When rendering Paint Effects with a directional light, self-shadowing may not compute correctly.

Workaround

Replace the directional light with a narrow spot light that is located far enough away from the objects in the scene that the light is effectively directional.

Paint Effects strokes that had transformations applied to the strokes themselves may sometimes appear different from 6.5 to 7.0.

Prior to 7.0, if a stroke painted on the view plane was rotated, and useNormal was ON, the stroke may not be drawn correctly if it was dependant on the stroke normal. If you have older files where you have adjusted some paint effects brush attributes to compensate for the draw problems with transformed strokes, these strokes may appear different in 7.0. Strokes painted on a surface should not have this problem.

Workaround

Re-adjust those same attributes that were used to compensate originally, if that information is still available. If it is not, you can convert the strokes to polygons in 6.5 and delete history for an accurate match. You may also find that modifying the normal on the stroke node may help you to match the pre-7.0 look of the stroke.

Missing comma in output of pfxstrokes command

The file output of the pfxstrokes command was modified in Maya 7.0 to add a missing comma. The comma location is following the normalZ value for pfxHair nodes.

Workaround

Any user scripts created in Maya 6.5, or an earlier version of Maya, that previously worked around this missing comma will need to be updated.

Pop-up menu on color boxes in Paint Effects Brush Settings window

The Paint Effects Brush Settings window has various color slider attributes on which you can right-click and a pop-up menu appears. Of the items displayed in this menu, only the Color Chooser item has any effect. The rest of these items should be ignored as they will not change the behavior of the color value.

Paint Effects Mesh brushes

The interpolation for Paint Effects triangles with Mesh brushes may result in distorted textures where the triangle count is low.

Workaround

Increase the triangle density on the brush or convert the Paint Effects strokes to polygons to render.

Film fit adversely affects Paint Effects

Workaround

Set the film aspect ratio to match the xres/yres, or the value shown in the Device Aspect Ratio in the Render Settings window. Be careful not to push the film aspect too far (too low in the example file) or the perspective will change.

Renaming strokes with brush springs

If a Paint Effects stroke has brush springs and the brush is renamed, the springs may no longer evaluate correctly.

Workaround

Rename the brush back or edit the expressions to reference the new brush name.

Interactive Performance Settings and redrawing strokes

If the Performance Settings for Paint Effects are set to Interactive, then immediately following playback, updates to the selected stroke/brush will not cause the stroke to be redrawn.

Workaround

Select some other object, then re-select the stroke. Interactive updates will now work.

Strokes rendering white with light fog

Light fog causes Paint Effects strokes to render white.

Workaround

If the lights in your scene have light fog, turn off "Real Lights" for any brushes that have "Illuminated" turned on.

Turbulence stops working during playback

Once it is turned off, turbulence stops working on Paint Effects stroke during playback.

Workaround

Open the Flow Animation block in the Attribute Editor.

Paint Effects canvas wrapping with Mesh and ThinLine brushes

Paint Effects brushes with a ThinLine or Mesh brushType do not wrap when scene or canvas wrap is on.

Stroke shadows in IPR

Paint Effects strokes do not show up in IPR, but their cast shadows do.

Workaround

Hide the strokes before rendering to prevent the shadows from being shown.

Light linking

Paint Effects does not support light linking.

Field rendering

Paint Effects does not support Field Rendering.

Workaround

Render with the By Frame value set to 0.5 and interlace in a compositing package.

Popping near the edge of a frame

Paint Effects renders can sometimes ‘pop’ where the stroke is near the edge of the frame.

Workaround

Increasing the stamp density and transparency may fix this.

Scaled objects and jumping strokes

On objects that are scaled very large, Paint Effects strokes may ‘jump’ when crossing isoparametric lines on the surface.

Workaround

To prevent this, apply the Freeze Transformations command to the object.

Z-up environment

Paint Effects gives unexpected results in a Z-up environment.

Workaround

Set the environment to Y-up and restart Maya.

Freeze Transformations

Freeze Transformations does not work for Paint Effects strokes.

Transformations and units

Paint Effects can give unexpected transformation results if the units are not set to centimeters.

Playing back scripts

Parameters that are dynamically set on stroke creation, such as pressure values and settings, are not arguments to the stroke command itself. Playing back scripts will therefore not exactly match what you created.

Changing Screenspace Width option

If you turn on Screenspace Width for an object like a tree, the tree size is now based on the canvas scale, not the scene scale.

Workaround

Make the canvas scale equal to the scene scale, and then scale down the widths of the tubes, flowers and leaves to the desired levels.

Modifying 3D Paint Tool textures in the Paint Effects canvas

A file texture may not update correctly when you try to use the Paint Effects canvas to edit a texture map created with the 3D Paint Tool.

Workaround

Save the scene before trying to edit the texture in the Paint Effects canvas.

Most recent brushstroke gets re-drawn several pixels off

Using paint effects, some graphics cards may redraw the last stroke drawn a few pixels off from where it was.

Workaround

Before running Maya, set the environment variable `MAYA_RENDERVIEW_USE_TEXTURES` to 1. Maya will then use an OpenGL texture call to draw the stroke instead of the normal `glDrawPixel` call.

Particle clouds and Paint Effect Strokes don't mix

After creating a Particle cloud emitter with Paint Effects strokes, the strokes become clipped by cloud shapes in front of them.

Workaround

Composite the particle cloud separately.

3D Paint issues with mental ray for Maya

When painting a texture with 3D Paint, mental ray for Maya will not pick up new paint strokes automatically.

Workaround

Save either the texture being painted or the entire scene before rendering with mental ray to ensure that all strokes are rendered correctly.

Release notes

Dynamics limitations

Particle system can have inconsistent results between disk cache and non disk cache when using rand() in expression

Workaround

Seed the random number. For example, if(frame < 2) seed(1).

Rigid bodies have a different playback result after saving the scene

The cycle involved with the rigid solver causes a different evaluation order. This problem has to do with to the DG evaluation order in a cycle.

Workaround

Before you save the scene that contains rigid bodies, do the following:

- 1 Select Solvers > Memory Caching > Delete.
- 2 Select Solvers > Memory Caching > Disable.

Interactive Playback limitations

Interactive Playback does not currently work with passive rigid bodies. For example, if a passive rigid body is moved while the solver is playing, active rigid bodies will only collide with the passive rigid body in its original position.

Surface emission from a trimmed surface won't reflect new holes

With surface emission from a trimmed surface, if you add more trims or untrim the surface, the emission won't reflect the new holes.

Workaround

Bring up the geoConnector node associated with the emitter, and change the tessellation value a little, for instance, from 200 to 201. This forces re-tessellation, and the re-tessellation picks up the new trims correctly.

Rigid body keyframed passive to active resets incorrectly

Rigid body keyframed passive to active resets incorrectly if you don't freeze transform.

Workaround

Model your object first, select Modify > Freeze Transformations, then set active/passive keys, adding any fields as the last step.

Flow effects and curve flow don't work if units not in cm

Workaround

Set the scene units to cm, create a new scene, then reopen original scene.

File referencing not supported for particle expressions

Workaround

Put your particle expressions in the main file.

Fields and emitters don't convert particle positions

Fields and emitters don't convert particle positions for non-standard units

Workaround

Use standard units.

Particles may collide on creation

Particles may collide on creation when surface emitter is also a collision object.

Workaround

Reverse the normal speed parameter of the surface emission.

Rotate pivot and instancing

Instancing does not handle situations where the rotate pivot is not at the origin.

Workaround

See the script, createInstancerPivot.mel in the scripts/unsupported directory (under the main Maya install directory). The script contains directions for use.

Hardware rendering with motion blur limitation

Hardware rendering with motion blur works only if the multipass value is set at least as high as the motion blur value.

Identical rigid bodies may not collide

Two identical rigid bodies on top of one another may not collide.

Workaround

Scale, rotate, or translate one of the rigid bodies slightly.

Rigid bodies do not recognize non-planar polygons

Workaround

Triangulate the non-planar polygons.

Copying a rigid body/rigid constraint systems

When copying a rigid body/rigid constraint system, the copied constraint does not connect to the copied rigid body.

Workaround

Turn on Duplicate Input Graph in the Edit > Duplicate options window.

Ghosting is not reliable on simulated objects such as particle simulations, soft bodies, and rigid bodies

Ghosting is not reliable on simulated objects such as particle simulations, soft bodies, rigid bodies, classic cloth and jiggle deformers.

Workaround

Creating a disk cache for the simulation will typically allow ghosting to work on the object.

Particles may not evaluate properly when using emit command to emit particles

This problematic behavior may be the result of the expression not being executed or Maya may be getting the incorrect amount of particles during batch mode or prompt mode.

Workaround

Invoke `getAttr` on the count attribute in the order where the events are expected to happen. The `getAttr` can be called from within a MEL script or a regular expression as long as it happens once every frame.

Error messages appear if you modify soft body polygon topology

Modifying a polygon object's topology (by editing its upstream construction history) after making it a soft body will result in error messages.

Workaround

Adjust the construction history as desired before creating the soft body, or delete and recreate the soft body after such changes.

Exporting to .mi with dynamics

Exporting to .mi interactively may produce incorrect results with dynamics.

Workaround

Do one of the following:

- Manually run up the scene to the current frame and export
- Use batch export to .mi

Release notes

General rendering limitations

The following lists miscellaneous rendering limitations and workarounds.

mayabatch -render command obsolete

The `mayabatch -render` flag on Windows (`maya -render` on Linux/Mac OS X) is obsolete and has been removed. Use the `Render -r` command instead.

Batch rendering from within Maya on Mac OS X writes to console and `mayaRender.log`

On the Mac OS X platform, when you batch render from within Maya, the output is sent to the Console Application as well as logged in `~/Library/Logs/Maya` with the name `mayaRender.log`.

Live controls do not work if you are not in Live mode

If you are having issues with the live controls not working, switch to Maya Live mode.

Rendering workflow issues

Light-linking with plug-in lights

There are some problems involving light-linking with plug-in lights:

- They do not appear in the Light-linking Editor or Relationship Editor.
- The query option to the lightLink command does not work for plug-in lights. This results in Lighting/shading > Select Objects Illuminated by Light and Lighting/shading > Select Lights Illuminating Object failing.

Light Linking Editor and deleting lights

The Light Linking Editor sometimes gets confused when you delete lights while using it. You may see error messages such as: “Error: No object matches name: directionalLight1” after deleting a light. Also, the display of which lights are selected can be incorrect after undoing a light’s deletion.

Workaround

Deselect everything in a modeling view to clear the editor.

Maya Software rendering limitations

The following lists miscellaneous software rendering limitations and workarounds.

Per-patch shading assignment

Per-patch shading assignment is currently not respected when software rendering.

Optimized scene file location when using the -optimizeRender flag

When using the -optimizeRender flag, the location for the optimized scene file to be created is based on the current project defined by the preferences or by the MAYA_PROJECT environment variable.

Workaround

Provide the absolute path where you would like the optimized file to be created.

Raytraced shadows are not supported for Paint Effects

Raytraced shadows do not work with Paint Effects.

Workaround

Convert Paint Effects objects to polygons.

mental ray for Maya rendering limitations

The following lists the software limitations and workarounds for this version of mental ray for Maya.

mental ray impacted by Hyperthreading

Intel CPUs offer hyperthreading as a feature to simulate additional logical processors which are actually running on a single physical CPU. This feature is intended to accelerate applications which make use of additional processors for parallel execution like mental ray. However, since hyperthreads are not able to deliver a performance gain like a physical processor but only about 15-25%, the performance increase may be small or not visible.

Workaround 1

Turn off hyperthreading when using mental ray.

Workaround 2

Disable “Auto Render Threads” and set the number of render threads manually.

IPR and mental ray for Maya rendering and animated parameters

mental ray for Maya does not update animated parameters, including changes to the time slider, when using IPR (Interactive Photorealistic Rendering).

IPR for mental ray for Maya limitations

Currently, IPR for mental ray for Maya does not support the following:

- Level of detail camera updates
- Smooth mesh preview using the hotkey 3

Shadow method is set to Simple by default; simple shadows are not compatible with volume effects

The Shadow Method in the Quality tab of the Render Settings window: mental ray tabs is set to Simple by default. Simple shadows are not compatible with volume effects such as fluids, volume fur, particles and volume shaders and therefore may not render shadow volume effects correctly.

Solution

Use Shadow Method Segments.

Material swatches do not update during mental ray IPR

When rendering in mental ray IPR, mental ray material swatches in the Hypershade and Attribute Editor do not update with adjustments.

To get swatches re-rendered with mental ray, stop mental ray IPR.

Fast subsurface scattering now more accurate but slower with final gather

Beginning Maya 2008, fast subsurface scattering is now more accurate when used with final gather but it is also slower. This is because the `misss_lightmap_write()` shader and all phenomena that use this shader now perform additional calculations to assure quality.

Final gather map visualizer limitation

When using the Enable Map Visualizer option or Final Gathering in the Render Settings: Indirect Lighting tab, using the default final gather file name causes no points to appear in the visualizer.

Workaround

Enter an absolute path for the Primary Final Gather File attribute instead of using the default setting.

Motion vector file calculated differently depending on whether scanline is on or off

When generating a motion vector file, mental ray performs the calculations differently depending on whether scanline is on or off. When scanline is on, both the camera motion and object motion are used to compute the motion vector file. Otherwise, if scanline is off, only the object motion is used for the calculations.

Particle rendering

You can render the following particle types with mental ray: Points, MultiPoint, Spheres, Sprites, Streak, MultiStreak. The implementation builds on a geometry shader that creates actual geometry from per-particle data which is then passed on to mental ray for rendering.

Hardware particles are shaded in a way that is similar to software particles: a shading group must be assigned to the particle shape, and its surface shader completely determines the appearance of the particles. This implies that none of the shading-related attributes are supported when rendering hardware particles with mental ray.

spriteNumPP is unsupported; therefore, assigning different sprites on a per-particle basis is impossible. mental ray and Maya Hardware may render particles slightly differently.

Warning messages appear when importing scene files in Hypershade

When importing scene files containing mental ray nodes, you may see warning messages such as:

```
// Warning: 'Draft.message' is already connected to 'mentalray  
ItemsList.options'. //
```

These warning messages, about pre-existing connections between mental ray related node, are harmless and can be safely ignored.

A warning dialog box also appears when these warnings occur. If you are importing many files and wish to avoid manually closing the warning dialog box for every file, you may want to use the **file** command with `-prompt false`.

mental ray for Maya framebuffer only outputs 32-bit depth framebuffer

mental ray for Maya only outputs 32-bit depth framebuffer and not 16-bit.

Workaround

Use external tools to clamp the depth into the limited range for specific applications. Compositing packages that cannot read 32-bit depth are rather inappropriate and inconvenient for use with mental ray, since even color values are 32-bit per component (HDR).

mental ray for Maya transfer maps limitation

If, in addition to baking a mental ray transfer map, you also:

- bake a Maya transfer map with the `.tif` file format, *and*
- you choose the Connect maps to shader option,

then, when you bake a mental ray transfer map for a second time, mental ray generates an error.

mental ray does not understand the the `LZW` compressed `TIF` format.

Workaround:

You may do one of the following to avoid this error:

- Use a mental ray friendly file format for your Maya transfer map, for example, `EXR` or `DDS`.
- Assign a different material to the source surface before baking your mental ray transfer map for the second time.
- Unselect the Connect maps to shader option.

mental ray for Maya transfer Maps custom shaders limitation

When creating a Custom Map, Transfer Maps does not support baking Contour shaders or Geometry shaders to texture. Only Material shaders (shaders listed under the Materials section of the mental ray tab in the Create Render Node window) can be baked to texture. Ensure that your custom shader is recognized as a material shader in Maya.

Removal of Zpic support

The Softimage Depth (Zpic) file format is no longer supported for mental ray for Maya rendering.

mental ray mia_roundcorners shader to be used with double-sided geometry

The mental ray mia_roundcorners shader must be used with double-sided geometry.

Surface changes during animation is not supported for mental ray for Maya motion blur

Surface changes (for example, changes to the number of vertices) during animation is not supported for mental ray for Maya motion blur. If the motion interval is large, so that the topology change occurs within this interval, mental ray issues the warning message “Shapes are not equivalent, no motion vectors computed” and skips motion data computation on the shape.

Baking to one map in mental ray uses wrong UV set

When Bake to one map is enabled, mental ray currently only bakes the default UV set, regardless of the specified current UV set on the object.

Workaround

Use override mesh UV set assignments, and rename all UV sets to that name.

mental ray does not support multiple motion transforms

Multiple motion transforms is not supported by mental ray for Maya. To obtain curved motion blur, animation should be applied to the shape node and not to the transform. In addition, you must enable the Export Motion Segments option in the Render Settings: mental ray tabs, Options tab, under the Translation section, Performance sub-section.

Image plane renders darker when mia_physicalsun shader is used

When you add the mia_physicalsun and mia_physicalsky to your scene using the Create button in the Environment section of the Render Settings, a network of nodes is automatically created, which includes the mia_exposure_simple shader that adjusts exposure. The mia_exposure_simple shader is added to the network because the mia_physicalsun and mia_physicalsky shaders create physically correct high dynamic range images that, when viewed without exposure control, will appear all white in the render view. The mia_exposure_simple shader not only affects the sun and sky but rather the entire scene including image planes. A standard image plane will appear darker relative to the bright sky. You can adjust the image plane's brightness using its Color Gain and Color Offset attributes, or using the attributes of the mia_exposure_simple shader.

mental ray volume fur may produce artifacts on tile edges

Occasionally, mental ray volume fur may produce artifacts in the shadowing on tile edges.

Workaround

Use a single tile for the whole image. However, the drawback is that a large amount of memory is required and only one core on the machine is used for rendering.

Incorrect bounding boxes reported for fur node

Maya reports incorrect (zero) bounding boxes for its FurFeedback nodes.

Workaround

Enable Show > Locators and the bounding boxes will be correct.

Multi-render passes limitations

2D Motion Vector pass limitation

The 2D Motion Vector pass requires a 32-bit output. Therefore, when creating this pass, you must select openEXR as your file format. However, since you cannot select a different file format for each render pass, all passes must be written to an openEXR file whenever your list of passes include the 2D Motion Vector pass. This limitation does not apply to the Normalized 2D Motion Vector pass.

mental ray sun and sky shaders may cause passes to be brighter than normal

Passes may appear brighter than usual when you use the `mia_physicalsun` and `mia_physicalsky` shaders with the multi-render passes. In particular, the refraction pass produces the most noticeable difference.

Workaround

Avoid using the `mia_physicalsun` and `mia_physicalsky` shaders with the multi-render passes feature. If you must use these shaders in your scene, you can workaround the problem by rendering to `.exr` format and then do the necessary tone mapping in the compositing software (for example, Toxik).

Setting the pre-compositing template for render layers

Tip: The Use MasterLayer's Template attribute in the Render Settings window, Passes tab, Pre-Compositing section is used to mark whether the layer's `precompTemplate` value is the same as that of the masterLayer's.

Rendering motion vectors increases memory consumption

When rendering motion vectors with BSP2, memory consumption may be higher, just as with rendering with motion blur. If memory runs low, try using BSP or Large BSP instead.

Render proxy limitations

- If your render proxy contains textures, then, when you export your render proxy, you **must** select the Absolute option under the Texture file category in the Export Selection Options window, Export file paths section.
- Render proxy is currently only supported for static geometry. Therefore, if you put a deformer on a file and animate it and export it as a proxy, mental ray for Maya will only read the last frame when it is loaded in a new file.
- You cannot load a proxy into a file and try and put a deformer on it. You should avoid modifying the proxy shape (in other words, avoid changing the bounding box size in the Maya scene), otherwise, you may get clamping.

Using autovolume may cause a render with shadows even if there are no lights in the scene

Using autovolume may cause shadows to appear in the render even when there are no lights in the scene.

Short name displayed incorrectly when adding a new attribute to a mental ray base shader

Appending a new attribute to any of the mental ray base shaders cause the shortname of the output value to be displayed incorrectly.

Workaround

Add explicit `short name` to the output parameters in the .mi declaration, then save the Maya file with the option Use full names for attributes on nodes enabled under the File Type Specific Options section in the Save Scene As Options window.

Changing the Verbosity Level via mentalrayGlobals does not work

Changing the Verbosity Level for messages through the mentalrayGlobals does not work.

Workaround

Change the verbosity level through Render > Render Current Frame >



instead.

Hardware rendering limitations

This section contains information about the unsupported features, limitations and workarounds for Hardware rendering.

Known limitations

Cube map is not affected by translation and scale

The translation and scale on the environment cube map are not taken into consideration by the hardware renderer. The cube map will render very

differently compared to software rendering. There is no workaround for this limitation.

Hardware renderer performance is slow when baking projected textures

The hardware renderer performance is slow when baking projected textures.

Workaround: Reduce the baking resolution (Color resolution, Bump resolution) in the Render Settings: Maya Hardware tab.

Hardware renderer limitation with displaying mental ray area lights

When displaying mental ray area lights, the hardware renderer does not provide the same results as an actual render, but instead produces a very rough approximation that can be viewed in High Quality mode.

The Maya hardware renderer supports the following configuration for mental ray area lights:

- A Maya area light must be used.
- Only the Rectangle mental ray area light shape is supported.
- Basic light parameters such as Color, Intensity, Decay Rate are supported.
- An approximation of shadows is supported.
- A fixed point sampling rate is used for both diffuse and specular highlights. Sampling artifacts may occur, especially for specular highlights where the area of the light is large and the light is close to the surface.
- Other light shapes and options such as High Samples, High Sample Limit and Low Samples are not supported.

Hardware renderer doesn't correctly sort transparent polys and there are artifacts on transparency mapped objects

If objects or parts of objects with different shaders have overlapping 3D bounded regions with respect to the camera, then the transparency sorting may not be as expected with respect to a software rendering.

This is due to the fact that the hardware renderer does not sort on a per pixel basis. There are basically two modes for transparency sorting in the Render Settings:

- Per Object

■ Per Polygon

The axis aligned world space bounding box of objects is used as the main criteria for depth sorting with respect the current camera used for rendering.

For Per Object, objects are sorted from furthest to closest in depth to the camera. The distance measurement is from the center of the bounding box to the camera “look from” position. If more than one shader is assigned to an object, then each part of the object will have its bounding box computed. Each distinct part is called a shader section and the box, the shader bounds. If the whole object uses one shader then the shader bounds" are equivalent to the bounds for the entire object. The shader bounds are sorted from back to front.

Per Polygon provides further sorting refinement. The polygons are sorted for each object from back to front. When drawing the depth-sorted shader bounds the polygons are drawn from back to front. If this option was not turned on, then the polygons would be drawn in arbitrary order per shader bounds.

Workaround

For possible better sorting, the you can either:

- Split up polygons of the object into separate objects.
- Split up single shader regions on single objects into separate objects with one shader per object.

Hardware renderer clipping planes deviates from the default behavior of the software renderer and the mental ray renderer

For the software renderer and the mental ray renderer, if part of an object is beyond the far clipping plane, the entire object is rendered, including the part beyond the far clipping plane.

However, for the hardware renderer, if part of an object is beyond the far clipping plane, then only the part of the object that is in front of the far clipping plane is rendered. Parts of the object that is beyond the far clipping plane is clipped and not rendered.

Ashli shader plug-in now part of Bonus Tools

As of Maya 2009, the ASHLI plug-in is now available as part of the Maya Bonus Tools. Bonus Tools is a free collection of useful Maya scripts and plug-ins that

are available from the Autodesk Web site
(<http://www.autodesk.com/maya-bonustools>).

ATI Ashli hardware shader plug-in unstable on 64-bit Linux

The ATI Ashli hardware shader plug-in is unstable on 64-bit Linux, and can cause Maya to crash when loading in shader files for display.

Shadows broken with newest version of Cg on nVidia cards

(Windows, Linux) We have supplied the beta 2 version of the Cg 1.5 libraries. Shadows do not work properly with later versions of these libraries on nVidia cards (on all platforms). ATI cards do not appear to have this problem.

(Mac OS X) Because a universal binary library version is required, we have supplied the 1.5.0012 version of the Cg libraries. On nVidia cards using Mac OS X 10.4.8, shadows do not render properly.

You can replace the Cg libraries in the run-time area with new versions for CgFx plugin shader development. However, we do not qualify or support newer versions of the libraries (for example, they will show this shadow problem).

Vector rendering limitations

The following lists the Vector rendering limitations and workarounds.

Mac Pro does not support the vector renderer

The vector renderer is not supported on the Mac Pro platform. If you try to load the vector renderer, an error message occurs.

Release notes

General nDynamics limitations

The following lists miscellaneous nDynamics limitations and workarounds.

Missing nDynamics menu set

If you've upgraded from Maya 2009 Complete to Maya 2009 Unlimited, the nDynamics menu set may be missing from the Maya interface. This is due to saved Maya preferences.

Workaround

Do one of the following:

- Restore the default menu sets by doing the following:
 - 1 From the Status Line, select Custom.
 - 2 In the Menu Set Editor, select Edit > Restore Default Menu Sets.
- Delete your Maya preferences.

If you have already customized your menu sets in Maya Complete, you will need to do so again after upgrading to Maya Unlimited.

Release notes

General nCloth limitations

The following lists miscellaneous nCloth limitations and workarounds.

Assign Solver does not assign an orphaned nCloth object to a Nucleus solver

If an nCloth is created but not assigned to a Nucleus solver, using the nSolver > Assign Solver menu item to assign the object to a solver does not work. Instead, a "Selected object does not belong to an nSolver" error message appears and the object does not get connected to the solver.

Workaround

Use the `addActiveToNSystem` MEL proc to connect the new nCloth object to an existing nucleus solver. For example, use `addActiveToNSystem("nClothShape2", "nucleus1");`

nRigid collision display off from nRigid objects

If all the nCloth objects in a scene are cached, the nRigid collision display will appear one frame off from nRigid after caching the objects.

Workaround

Add a very small un-cached nCloth object to the scene.

Changing the topology of an nRigid frame

If you change the topology of an nRigid object at a frame after the start frame, and the resulting frame has fewer vertices or faces, Maya may stop indefinitely if you immediately resume playback.

Workaround

Go to the start of the playback range before playing back the scene.

Weld Adjacent Borders constraint and file saving

If an nCloth object is constrained using the Weld Adjacent Borders constraint and the file is saved at a frame other than the start frame and then re-opened, the re-loaded scene will not update the constraint properly during playback.

Workaround

Return to the start of the playback range before saving.

Point to Surface Constraint on wrapped surface

If an nCloth object uses a mesh as a wrap deformer and then a point to surface constraint is created between the nCloth and the mesh surface, the constraint will have no affect.

Workaround

Make the wrap shape a passive nCloth object and then create the constraint.

Removing tearable constraints

If you remove a tearable constraint from a surface using Remove Dynamic Constraint, the nCloth will still tear when you simulate.

Workaround

In the Hypergraph, select and delete the polySplitVert, polyMergeVert and polySoftEdge nodes.

High Max Distance values on the dynamicConstraintShape node may cause Maya to crash

When using Max Distance on an nConstraint (dynamicConstraintShape node) to specify which Nucleus object components participate in the constraint, the resulting connections may be such that each component of each object are constrained to each other. This results in poor performance, and, in some cases, for large nCloth meshes or nParticle systems, may use all available memory.

Workaround

On the dynamicConstraintShape node, lower the Connection Density to a value that leaves the connections sparse enough for good performance, but also leaves enough connections between the objects' components to maintain the original simulated behavior.

Topology changes during simulation

Topology changes (modifications to the mesh surface that change vertices) while simulating nCloth are not supported for Maya 2008. Changing the topology of nCloth objects may result in collision failures.

Vertex maps and constraints

In Maya 2008, you can only create painted vertex maps for constraints that connect vertices to vertices.

Creating nCloth from referenced files

When creating cloth objects using geometry from referenced files, if you unload the reference and then save the file, you may see erroneous geometry on the reference node.

nCloth does not cache properly when its input mesh is driven by a geometry cache

If the input mesh on an nCloth object is driven by a geometry cache, many nCache operations will work on the geometry cache instead of on the nCloth cache.

Workaround

- 1 Select the nCloth object, and then from the Animation menu set, select Edit Deformers > Display Intermediate Objects.
All the upstream shapes, including the nCloth input mesh and the pre-geometry-cache mesh are displayed.
- 2 To select the output mesh shape, either pick-walk down from the Transform node, and then pick-walk right until the output cloth mesh is selected. Or, in the Attribute Editor, select the OutputMesh tab.
- 3 Hide the upstream mesh, by selecting Edit Deformers > Hide Intermediate Objects from the Animation menu set.
- 4 From the nDynamics menu, select nMesh > Display Current Mesh to hide the input mesh.

nCloth caching and settling

If you create an nCloth plane that is constrained along one edge with a low Stretch Resistance, cache the simulation and then attempt to append to the simulation, the nCloth will settle further during the appended cache.

Workaround

Set the Rest Shape of the nCloth object to Connect Input Mesh to Rest Shape.

Smoothing and caching

If you create a low resolution model and create an nCache for it, then add a polysmooth and create an nCache the new smoothed model, Maya will re-cache the old the low resolution model instead.

Workaround

After creating the new cache for the smoothed object, select Edit > Delete All by Type > History. Then select Geometry Cache > Import to attach the cache of the smoothed geometry.

Caching nCloth objects with changing topology

Caching produces useful results on objects whose topology does not change over time. Some animated modeling construction history operations result in

topology changes over time. While you can create a cache for these objects, it may distort the object during playback since a constant topology is assumed.

Painted wrinkle maps do not work after Initial State is set

If a wrinkle map is applied to nCloth using Paint Vertex Properties, it may only affect the nCloth object during the first simulation playback. If you set the Initial State of the nCloth object, and then play back the simulation, the painted wrinkle map may not affect the nCloth object's behavior.

Workaround

Animating the Wrinkle Map Scale will force the wrinkle to update. You can do this by using a simple expression to set the Wrinkle Map Scale value. For example add an equal sign (=) before the Wrinkle Map Scale Value.

Last Tool and painting nCloth

When painting nCloth property texture maps, painting cannot be reinvoked with the Last Tool (default hotkey “y”) function.

Component to Component constraints updating per frame

Setting the Connection Update attribute on the *dynamicConstraint* node to Per Frame, when using a component to component constraint has no effect.

Thickness map in shaded mode

When painting the collision thickness of an object with Face collisions in shaded mode, it may be difficult to see mapped variations in thickness.

Workaround

View your scene in Wireframe mode (Shading > Wireframe).

Collision Thickness display

When modifying an nCloth passive collision object with the Solver Display (nClothShape node) set to Collision Thickness, the scene view may not immediately update to match your adjustments.

Workaround

Advance a frame, or rewind to the start frame to update the scene view.

nCloth jiggles or oscillates when Push Out Radius is less than collision Thickness

When an nCloth object's Push Out Radius is set to a lower value than its collision Thickness, the nCloth may jiggle or oscillate after colliding with other Nucleus objects.

Workaround

Set the nCloth object's Push Out Radius to a value that is greater than its collision Thickness value.

Transference of downstream connections from nCloth input meshes to output meshes

Downstream connections from an nCloth's input mesh are not, in general, transferred to the output mesh when the input mesh is turned into nCloth.

The only exceptions are connections between the input mesh's World Space values (worldMesh on the poly *mesh* node) and a wrap node's Wrap Attributes (driverPoints on the *wrap* node). These connections are transferred.

Workaround

Transfer the connections from the input mesh to the output mesh manually, or with a script.

Negative Push Out values

Negative Push Out (nClothShape node) values are intended for objects with normals reversed. The current behavior only flips the sense of normal when the Push Out value is -1.0, or less. This makes it impossible to create subtle push outs on the reverse side of a surface.

Workaround

To get expected results, flip the normals on the surface, and use a positive Push Out value.

Lift attribute affected by nCloth object size

When the same nCloth object is scaled to different sizes that have the same Lift attribute value, the scaled nCloth objects may behave differently when simulated.

Workaround

Adjust the Lift attribute of each scaled nCloth object until the desired behavior is achieved.

Release notes


General nParticles limitations

The following lists miscellaneous nParticle limitations and workarounds.

Resetting the nParticle Tool reverts to the classic Particle Tool window

Selecting Reset Tool when using the nParticle Tool, the Tool Settings window changes from the nParticle Tool settings to the classic Particle Tool settings.

Workaround

- 1 After resetting the nParticle Tool, close the Tool Settings window that appears.
- 2 Reopen the nParticle Tool settings window by selecting nParticles > Create nParticles > nParticle Tool >  .

Undoing nParticle creation may not immediately remove nParticles from the scene

If you want to undo the creation of an nParticle system, you may need to perform an Undo (Edit > Undo) two or more times before the nParticle system is removed from your scene.

Duplicate nParticle objects with no connections do not play back in saved scene files

Duplicate nParticle objects play back correctly in your scene; however, if the scene file is saved and then opened in Maya, the duplicate nParticle object does not play back correctly. This occurs because the duplicated nParticle object must be assigned to a Nucleus solver and must be connected to time.

Workaround

- 1 Use the `addActiveToNSystem` MEL proc to connect the new nParticle object to an existing nucleus solver. For example, use

```
addActiveToNSystem("nParticleShape2", "nucleus1");
```

If you connect the duplicated nParticle object to a different solver (than the original) you will need to save, and then reopen the file before the simulation plays back properly.
- 2 Connect the nParticle object to time using the following command line:

```
connectAttr time1.outTime nParticleShape2.currentTime;
```
- 3 To assign your duplicated nParticle object to an emitter, use the Dynamic Relationships editor to make the connection.

An nParticle object duplicated at an advanced frame may crash Maya

If you duplicate an nParticle system at an advanced frame of a simulation, and then continue to play it back, Maya may crash.

Workaround

Do one of the following:

- Create the duplicate nParticle system at or before the start frame of the simulation
- Rewind the simulation immediately after duplicating the object, and then play it back.

Assign Solver does not assign an orphaned nParticle object to a Nucleus solver

If an nParticle is created but not assigned to a Nucleus solver, using the nSolver > Assign Solver menu item to assign the object to a solver does not work.

Instead, a “Selected object does not belong to an nSolver” error message appears and the object does not get connected to the solver.

Workaround

Use the `addActiveToNSystem` MEL proc to connect the new nParticle object to an existing nucleus solver. For example, use

```
addActiveToNSystem("nParticleShape2", "nucleus1");
```

nParticle to nParticle collisions unstable when Bounce is 0

Collisions that occur between the individual nParticles of two nParticle systems (not nParticle self-collisions) are exaggerated when the Bounce attribute on both nParticle objects is set to 0.

Workaround

Set the Bounce attribute on one of the colliding nParticles objects to a very low value such as 0.001.

nParticle cache blend and merge not working

Maya 2009 does not support blending and merging of nParticle caches.

Error message appears when caching nParticles

If you created an nParticle nCache in which no particles are present in the initial frames of the simulation, an error message appears, indicating that there is no cache file or an empty cache file for those initial frames. The error message may also appear if you create a cache immediately after starting Maya with newly created preferences. This is due to some preferences not being initialized.

Workaround

Play back your nParticle cache. If the simulation behaves as expected, ignore the error message. If your simulation does not behave as expected, delete the cache, if one exists, and then open the Create nCache Options window. Create the cache again.

Scripting nParticle creation invokes other commands

Using the `nParticle` command, the `particleFill` command, or the `NCreateEmitter` script, invokes some lower level scripts with `evalDeferred`. If you want to use these commands in a script and then access any per-particle dynamic attributes in the same script, you need to first allow the deferred commands the chance to catch up.

Workaround

Insert a command that lists each `evalDeferred` such as to flush out all the deferred commands.

Release notes

General Fur limitations

Fur stamp unexpectedly renders above paintFX stroke stamps

The camera renders fur stamps above paintFX stamps unexpectedly.

Workaround

To correct this, create a new camera and match the camera with the broken camera.

PolySmooth node causes Fur to flicker

If pre-Maya 6.5 files have polygon objects with Poly Smooth applied after skinning, and the Smooth UVs option turned on, there will be flickering in the animation of rendered Fur, or the motion blur.

Workaround

To correct this, execute `setAttr smoothNode.ma 1;` in the Script Editor and turn off Smooth UVs in the smooth node.

This does not happen for scene files created in Maya 6.5, as long as Smooth UVs is turned off.

Using Chord Height Ratio can cause Fur to flip

Fur that is applied to a NURBS surface, for which Use Chord Height Ratio has been turned on, may flip and point in the opposite direction on some frames of a multi-frame render. The Chord Height Ratio attribute is located under Secondary Tessellation Attributes in the Advanced Tessellation section of the Attribute Editor. Confirm that Use Chord Height Ratio is not turned on before rendering.

Fur doesn't recognize volume light

Fur does not recognize volume lights - light emitted from a volume light will have no effect on the fur render.

Rendering high resolution

Fur runs out of memory when you render at 8K x 8K or higher resolution. There is no workaround.

Limitations when rendering Fur in the Maya Software renderer

Degree 1 NURBS surfaces tessellate extremely highly

Degree 1 NURBS surfaces produce extremely heavy geometry when tessellated for Fur, thus taking longer to process and producing large intermediate files.

Workaround

Convert the geometry to polygons.

Fur does not render correctly in orthographic views

Fur renders at an incorrect size in the orthographic views in the Maya software renderer.

Workaround

Render Fur in mental images® mental ray®.

Fur does not support Field Rendering

If Field Rendering is turned on in Maya, Fur will ignore it and render frames.

Workaround

Render with the By Frame value set to 0.5 and interlace in a compositing package.

Fur does not render at all if the camera is scaled negatively

Fur cannot be rendered with a negatively scaled camera.

Fur renders as a grid when a spotlight has a Penumbra Angle

Fur may render as a grid when a spotlight with a shadow map has a Penumbra Angle.

Workaround

Set the value for Penumbra Angle to zero. Alternatively, increase the size of the shadow map until the grid artifacts disappear.

Fur does not support any of the 16 bit image formats

Fur does not support any of the 16 bit image formats.

Workaround

Fur will be correctly composited when rendered to a 16 bit file format; however, the Fur pass itself will still be 8 bit. Set the rendered image format to a supported image format.

Or render in mental ray.

Using spotlight penumbras and drop-off with fur shadowing

Although fur shadow maps can be used with spotlight penumbras and drop-off, the fur shadows are not affected by these values, so there is no fall-off to the fur shadow. The fur shadows may look too sharp at the edges.

Fur does not support texture mapped lights

Fur does not support texture mapped lights.

Workaround

Render in mental ray.

Using Chord Height Ratio can cause Fur to flip

Fur that is applied to a NURBS surface for which Use Chord Height Ratio has been turned on may flip and point in the opposite direction on some frames of a multi-frame render. The Chord Height Ratio attribute is located under Secondary Tessellation Attributes in the Advanced Tessellation section of the Attribute Editor.

Workaround

Confirm that Use Chord Height Ratio is not turned on before rendering.

Maya may run out of memory when rendering Fur with very large shadow maps

Rendering Fur with very large shadow maps can cause Maya to run out of memory.

Workaround

Reduce the size of the shadow map and/or the Hairs/Pixel value for Shadow Map Rendering in Fur Globals.

Limitations when rendering Fur in mental ray for Maya

Fur on instanced objects not rendering

Fur cannot be rendered in mental ray on instanced objects if *Group Under > New Group* was selected in Duplicate Options.

Motion blur not working

If the Segments attribute is keyframed, motion blur won't work in mental ray.

Release notes

General scene limitations

The following limitations and workarounds relate to general scene issues with Autodesk® Maya® Live™.

Forced to set distance value to zero

Values set as Distance Constraints in the Survey Panel sometimes get reset to zero.

Workaround

Enter the desired value in the Attribute Editor or by using MEL commands.

Errors if you open a file before loading Maya Live plug-in

If you open a Maya Live file before loading the Maya Live plug-in you get errors.

Workaround

Load Maya Live plug-in before starting work in Maya Live.

Resizing Live window

Some Maya Live functionality goes out of view when you resize the window to a smaller dimension.

Workaround

Use Maya Live in its full screen display for all options to be accessible.

Save changes prompt

Choosing Scene > New Matchmove sometimes prompts you to save changes—even if you have not made any changes in the scene.

Setup limitations

The following limitations and workarounds relate to setup issues with Maya Live.

Display of Softimage image files

If the Use Cache check box is turned off, Avid® Softimage® image files that lack the .pic extension will not display.

Workaround

Do one the following: rename images to include .pic extension, convert to another format, or turn on the Use Cache check box on the Setup Cache control panel.

Image plane streaks

Occasionally, images do not display correctly on the image plane and the pixels on the right side of the image appear as streaks.

Workaround

This problem occurs when there is not enough texture memory on the machine. Open the Setup Cache control panel and choose None in the Texture Method parameter.

Track limitations

The following limitations and workarounds relate to track issues with Maya Live.

Deleting track points

If you undo the deletion of a track point that was used in a solution, only the associated 3D locator reappears.

Workaround

Choose Edit > Undo again to bring back the track point.

Manipulating track boxes

You may have difficulty selecting and resizing track boxes in the pointCenteredCamera view panel.

Message from positioning track boxes

When you position a track box, the following message appears in the Script Editor:

```
// Undo: dragTrackedPoint_doDrag //.
```

Workaround

Ignore the message.

Refresh of track point names

When you change the name of a track point or a survey constraint in the control panel, the label name does not change in the view panels.

Workaround

Wait for the next time the view panels refresh.

Deselected Track Box Tool

Saving your scene deselects the Track Box Tool.

Workaround

Re-select the Track Box tool if you want to drag a point.

Ready-to-Solve bar remains red

When you prepare to solve for object motion (using the As Object checkbox), the Ready-to-Solve indicators in the Track Summary may remain red. This occurs because the Ready-to-Solve indicators are based on camera solvability.

Workaround

Ignore the red indicators and continue with the Solve task.

Solve limitations

The following limitations and workarounds relate to solve issues with Maya Live.

Undo of Start, Continue, or Refine

Errors occur if you undo the Start, Continue, or Refine step.

Workaround

Delete the resulting solution instead of choosing Edit > Undo.

Root Frame solver failure

Occasionally, the Root Frame solver fails and the following message appears in the Script Editor:

```
// Error; // Exception. // // Error; // Solve Failed. //
```

Workaround

Click Solve or Start again and the solver will work.

Playblast frame range

The Playblast button on the Solve control panel plays the entire frame range rather than the frames specified in the Solve control panel.

Workaround

Select the frame range in the Time Slider bar instead.

Survey constraint Variance fields

The solver performs poorly if you enter a value of zero in any of the survey constraint Variance fields.

Workaround

Avoid entering zero in the survey constraint Variance fields.

Release notes

Fluid Effects limitations

Fluids with temperature turbulence and backward compatibility

If you have old fluids from 7.0.1 or earlier that use temperature turbulence, their simulations will play back differently each time they are played due to the backward compatibility settings.

Workaround

If you don't want to keep this random behavior, run the following MEL script for each *fluidShape* that uses temperature turbulence:

```
setAttr fluidShape.usePre70Dynamics false;
```

Like-named fluids cause cache problems

If you have a scene that contains 2 or more fluids, and their *fluidShape* nodes have the same name, then fluid caching will not work correctly for those fluids.

Workaround

Make sure that the fluid nodes in your scene have unique names if you intend to cache them.

Fluids cache nodes may be named incorrectly

If you create a cache or initial state for a referenced fluid or a fluid in a namespace, the cache nodes will be named incorrectly. For example, if you create a cache for fluffy:fluidShape1, the cache node may be named fluidShape1.

Workaround

Rename the cache node to initialState_fluidShape1 or cache_fluidShape1 as appropriate.

Source caches of merged fluid nCaches must be disabled or deleted

When fluid nCaches are merged, each source cache file must either be disabled or deleted. Otherwise, the cached fluid simulation may not play back as expected.

Workaround

Disable or delete the source fluid caches by doing one of the following:

- To disable caches, select the fluid objects, and then from the Dynamics menu set, select Fluid nCache > Disable All Caches On Selected.
- To delete the source caches clips after they have been merged, in the Merge Cache Clips Option window, select File clean up: Delete cache files after merge.

Fluid cache files that contain more than one fluid object may not play back as expected

Fluid cache files that contain more than one cached fluid object may not play back as expected. This is especially the case when the caches are blended or merged with other fluid nCache files.

Workaround

Select, and then cache each fluid object separately so that the cache files contain only one fluid object.

Maya does not re-simulate missing fluid caches during batch renders

During batch renders from the cache, Maya no longer attempts to re-simulate when it cannot locate a fluid cache. With fluids nCaching, Maya issues an error message indicating that it cannot locate a fluid cache file. This behavior differs from the previous version of fluids caching.

Cached channels do not attach properly when attaching an existing fluid cache

Attaching an existing fluid cache file (using Attach Fluid Cache File) does not attach all the channels from the cache file. Even if the cache, which is to be attached, has the same channels as the cache node connected to the fluid, the names of the channels are not specified in full, and only the Density data (first channel) is sent to the fluid.

Workaround

Specify the channels you want to cache in the order they were connected. Ensure that you use the full name of each channel as it's listed in the XML file. For example:

```
setAttr -typ "string" fluidShapelCache1.channel[0] "fluidShapel_density";
setAttr -typ "string" fluidShapelCache1.channel[1] "fluidShapel_velocity";
```

If the attached cache contains additional channels, open the Hypergraph to see the names that are associated with each channel.


Append to Cache does not work for painted, non simulated fluid frames

There are two associated limitations:

- Append to Cache (Fluid nCache > Append to Cache) does not work for non simulated fluid frames that are painted using the Paint Fluids Tool. To append a paint cache frame, you must use Replace Cache Frame.
- Replacing a painted cache frame only works when the Replace Fluid Cache Frame(s) Options window is open.

Workaround

To append a painted or imported frames to the end of a fluids cache, do the following:

- 1 Append the unmodified frame (Fluid nCache > Append to Cache).
- 2 Make the desired modifications to the frame.
- 3 Replace the appended frame by selecting Fluid nCache > Replace Cache Frame >  .
In order for the replace frame operation to work, you must leave the Replace Fluid Cache Frame(s) Options window open.
- 4 Click Replace.

MR render does not read fluid names properly

mental ray will render an animation incorrectly if fluid names are not unique.

Workaround

Ensure that each fluid shape in your scene has a unique name; when duplicating a fluid, make sure that Assign Unique Name is turned on.

Fluid texture not updating

A fluid texture does not update if not connected on outColor. When rendering in mental ray if the fluid is only connected on outAlpha, it does not update.

Workaround

Insert a luminance node between your fluid texture and the shader.

Surface shaded 3D fluid with Opacity Texture looks different in software render

If the dropoff shape is off, or the edge dropoff is 0, and your 3D fluid has density (greater than the surface threshold) in the boundary voxels, you won't see an outside boundary in hardware draw.

Workaround

If you need to see the outside boundary in the hardware draw, set the dropoff shape to cube, and the edge dropoff to 0.01.

2D texture collision missing some areas

The fluid doesn't enter some regions around the collision object.

Workaround

Triangulate the poly mesh explicitly using Mesh > Triangulate in the Polygons menu set.

Fluid object doesn't render in the exported file

If you exported a fluid with inputs off, you may end up losing the fluid shading connection to itself, and the fluid will not render.

Workaround

Open Hypershade, Assign the fluidShape to itself and it will render again.

Referenced file initial state cache may be modifiable from parent file

If your referenced file has an initial state cache, you can modify it from the parent file.

Workaround

Don't modify it—either by painting or save initial state (unless you really mean to).

Floating object animation limitation

Floating object animation only works correctly if units are in centimeters.

Workaround

Look at the extra attributes on the associated locator shape, and modify to compensate for the change of units. The scene scale is normally used to match the ocean shader scale, but it can also be used to compensate for the units relative to centimeters. Or you can modify gravity, or some of the other physical constants to get the desired motion in your units.

Alpha in image plane expands when used with volume fluids

Alpha in image plane expands when used with volume fluids.

Workaround

Make a second render.

- 1 Set the colorGain to zero and the color offset to 1 in the image plane.
- 2 On the fluid node set the Color ramp to all black and then set the Incandescence ramp to white.

Different blending cutoff in attribute presets for multis than strings, enums

If you apply an attribute preset with blending for a node that has ramp attributes and there isn't a one-for-one match between the entries on the corresponding ramps, you may get unexpected results. If these results are not satisfactory, you may have to adjust the results by hand. If you undo this kind of blend, you may end up with an extra index entry with a position and value 0. If so, delete the extra entry.

Ocean Shader: How do you create a tiling looping texture from it?

Here is a more detailed recipe for looping an ocean: LOOP_FRAMES = number for frames after which animation repeats.

- 1 Create an ocean or ocean shader. Set the numFrequencies and waveHeight both to zero so that the ocean is totally flat and more optimal to render.
- 2 Map the oceanShader waveHeightOffset with an ocean texture.asProjection = ON and newTexturePlacement OFF. On the projection set the rotateX to 90.
- 3 Map the colorOffset of this texture with another ocean texture as Projection = OFF and newTexturePlacement = OFF
- 4 Animate the time values of the two ocean textures such that the start of one is the same as the end of the other.
In the time field on oceanTexture1 type:
= frame/30 (the time parameter generally expects seconds, not frames)
In the time field on oceanTexture2 type:
= (frame-LOOP_FRAMES)/30
- 5 Keyframe the waveHeight on the two textures to do a cross dissolve:
oceanTexture1 frame 1 = desired height, frame LOOP_FRAMES = 0
oceanTexture2 frame 1 = 0, frame LOOP_FRAMES = desired height

The ocean animation should now loop across the number of frames specified by LOOP_FRAMES above. For it to work the two ocean textures must have identical values (apart from the wave height and time). With this method you cannot preview the displacement of the ocean using the heightfield node (convert displacement to poly will work). Also buoys and boats will not animate with wave height (texturing on the ocean shader is currently not taken into account for these effects).

Ocean horizon appearance

Large Ocean objects may appear blurry near the horizon when rendered in either mental ray or Maya renderers.

Workaround

Lower the horizon filter value from 1.0 to 0.1 on the ocean shader.

Ocean horizon and waves

When the camera is positioned such that a wave obscures the horizon line, a line artifact may appear on the wave.

Workaround

- Make the Horizon Filter value zero on the ocean shader. Note that a higher antialiasing setting may be required to avoid jitter along the ocean horizon.
- Render in Mental Ray.

Increased intensity of lights when multiple lights are used to illuminate fluid objects

When multiple lights are used to illuminate a scene with a fluid object, the intensity of each light is incorrectly increased.

Workaround

- 1 Create lights specifically for illuminating the fluid object.
- 2 Using the Light Linking Relationship Editor (Window > Relationship Editors > Light Linking), link the lights to the fluid object.
- 3 Adjust the intensity of each light accordingly.

Volume light Emit Ambient attribute not updating in IPR

When you select Emit Ambient with IPR running, you won't get an update.

Workaround

Reselect the area or change another attribute to update the render.

Multiple processors for fluid rendering may result in artifacts

When using four or more processors for fluid rendering, you may experience artifacts.

Workaround

Reduce the number of processors to four or less and try again.

Texture does not return to its original position

If your Texture Coordinate Method is set to grid and you are painting your fluid with autosave on, the texture does not return to its original position.

Workaround

Rewind, change coordinate method to fixed then back to grid again. Avoid saving unwanted grids, make sure that your saveInitialState options are set to indicate which grids should be saved.

Unexpected results when self shadowing on a surface rendered fluid

When self shadowing on a surface rendered fluid, you may get unexpected dark regions and artifacts.

Workaround

This only happens if the fluid has no transparency. Increase the quality until the artifacts disappear. Alternately, set the transparency to a non-zero value and it behaves as expected.

Hardware display issues with Caching

When Node Behaviour > Caching is turned on in the Attribute Editor, you may get unexpected results in the hardware display.

Workaround

Don't turn on Node Behaviour > Caching for Fluid Effects. If you did, turn it off, save your file, and restart Autodesk® Maya®.

Depth buffer inaccurate for surface fluid

When rendering a fluid with depth output and a surface style fluid, you would expect the surface to appear correctly in the depth buffer, especially if the fluid surface transparency is zero. By default nothing will appear in the depth buffer. You must set the camera depthType to the closest visible depth to see the fluid in the depth output. However the depth value will be the near intersect with the fluid bounds, rather than the actual depth of the blobby surface. This could create problems for composites with objects (or paint effects) within the fluid bounds.

Workaround

You can get closer to the correct depth by enabling volumeSamplesOverride and increasing the volume samples on the fluidShape. Note this may create artifacts with surface type fluids and it will take longer to render.

Fluid wireframe draw (particles) does not work if voxels too small

If the Resolution is set low, nothing appears in the Fluid wireframe draw (particles).

Workaround

Use shaded mode or rectangles.

Can't create partial presets if node has multi attributes

You may want to edit the preset file so that it only contains a subset of the node's attributes, but when applying a preset to a node with multi attributes, it empties out all the multis first, and then adds entries to the multis from the preset. Do not alter these files, particularly the entries for any multi attribute, such as ramps.

Convert Fluid to polygon full of holes with smooth interpolation

When converting a Fluid to a polygon with smooth interpolation, you will most likely get holes in the mesh.

Workaround

Use linear interpolation and then average the vertices, or, with smooth interpolations, using fillHole will deal with these holes except when the boundary has non-manifold vertices. In this case we recommend increasing the threshold until the geometry is no longer non-manifold.

Surface rendered 2d fluid image is not consistent with Display:As Render

A surface render of a 2d fluid may not look like a fluid in Display: As Render mode.

- The drop off shape for the cone (and double cone) isn't capped, so you still end up with the ends open. This is intentional.
- In a 2D fluid, not enough triangles are generated along the depth, so in a deep 2D fluid, the sphere will look like a cylinder and the cone will look like 2 cylinders.
- You will get ribboning if your drop off shape is off, or the edge dropout is 0, whatever the shape.

Noise and volumetric objects

When using 2D textures on volumetric objects, they must be used as projections.

Older presets are not removed when Maya uninstalled

Uninstalling Maya does not remove the presets folder (in case you have added your own presets to it). So if you have previously installed an older version of Maya (for example, if you are a beta site), some old presets which no longer work correctly may remain in your new install.

Workaround

Manually remove the presets folder or just the unwanted presets from your install location before re-installing Maya.

Release notes

Hair limitations

Stiffness Scale no longer affects curve attraction

In Maya 2008, Stiffness Scale no longer affects curve attraction. Instead, the new Attraction Scale ramp lets you control the value of Start Curve Attract along the length of a single hair clump or an entire hair system. This means that Hair in pre-Maya 2008 scene files that uses non-default Stiffness Scale values will now behave differently.

Hair width incorrect when rendered with mental ray

When rendering hair in mental ray, hair width is defined relative to clump width, while the Maya interactive and Software Renderer use the hair width directly in world space.

Workaround

Change hair width before rendering in mental ray. If you are modifying the clump width per follicle with the Clump Width Mult, you may need to put different sized clumps into separate hair systems, or use an alternate method such as the Baldness Map for controlling hair placement

IK solver may crash Hair render

If your mode has dynamic curves that affect an IK solver, it may crash when rendering in mental images® mental ray® on Linux®.

Workaround

Bake the IK before rendering and make sure that the IK solver is not enabled.

3D motion blur on Hair

The thinline brush type used by the internal default brush for hair does not support 3D motion blur.

Workaround

You can assign a Paint Effects brush to the hair system and use the *Paint* Brush Type (Brush Type = Paint). Keep in mind rendering will be slower with the *Paint* Brush Type and also the hairs may appear too thick when viewed from a distance.

NOTE 2D motion blur works with hair and the *ThinLine* Brush Type.

Simulation rate problems due to over and undersampling

Simulation rate does not affect hair solver oversampling, and undersampling dramatically changes the speed of the motion.

Workaround

Do not over or undersample when caching hair and do not change the playback rate. If you change your time units, you may need to change the dynamic properties of your hair system to compensate.

Lock Length not working with clusters

Lock curve length does not work with cluster or other deformers.

Undo not working when using Lock Length

With Lock Length, undo does not return curve to original position.

NOTE Lock Length is intended for use while transforming CVs. It is not currently supported in conjunction with other animation techniques. You may wish to save before editing your curve with Lock Length turned on.

Setting Rest or Start curves from Current on referenced hair system doesn't work

Setting Rest or Start curves from Current on referenced hair system doesn't work.

Workaround

Modify Rest or Start curves in the referenced file instead.

Problems with non unique hair curve names and namespaces

If you import multiple hair systems with the same curve names using namespaces, set Rest Position and set Start Position will be unable to distinguish the curves.

Workaround

Although we generally encourage the use of namespaces, in this case it may be better to import hair with prefixes to resolve clashing names.

Gravity not working with Hair

Gravity doesn't work well with Hair in Z-up system.

Workaround

Use a gravity field instead of the built in gravity

A default dynamic curve behaves differently at each end

The tip point lock locks to the end CV position, but not to end segment direction.

Workaround

Apply a transform constraint at the end of the hair.

Hair jittering with collision constraint

If your collide sphere constraint is non-proportionately scaled so that one dimension is much thinner than another, stiff hair will jitter when touching the constraint.

Workaround

Reduce the stiffness until the hair stops jittering or make the constraint more uniform in scale.

Release notes

Toon limitations

Lighting Based Width does not work with Offset Mesh

Lighting Based Width for toon lines is not supported for Offset Mesh profile lines.

Workaround

Use Paint Effects profile lines if you need lighting based width.

pfxStrokes command does not support pfxToon node completely

The pfxstroke command does not output the profile curves for a pfxToon object.

Workaround

Use ConvertPaintEffectsToCurves to extract the NURBS curves for the toon outline.

Reverse surfaces only work for polygons

When using Toon Lines with Offset Mesh for the profile lines, Reverse Surface is only supported for Polygons.

Workaround

For NURBS surfaces and Subdiv surfaces, if you need to reverse the surface, convert the surface to polygons and create the offset mesh on the poly surface. For NURBS surfaces, you can also Reverse Surface Direction on the NURBS surface itself.

Miscellaneous and translators

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Release notes

General Maya limitations & workarounds

The following limitations and workarounds relate to general Maya issues.

Various display problems with Nvidia GeForce G80/G92 based graphics cards

When using Maya with an Nvidia GeForce G80/G92 based graphics card, you may experience a variety of problems related to screen refreshes.

Workaround

Add the environment variable `MAYA_GEFORCE_SKIP_OVERLAY` to the `Maya.env` file.

Script filters don't invoke `filterChanged` callback

Script filters don't invoke *filterChanged* callbacks when script changes, for example, if you create an item filter like this:

```
itemFilter -byScript userScript filter1;
```

If you modify the script, you will not be informed that the filter has changed.

Workaround

Reassign the same script to the filter to trigger the workaround.

```
itemFilter -edit -byScript userScript filter1
```

Maya leaves UNIX shell key repeat turned off

Occasionally, Maya will leave your UNIX shell key repeat turned off.

Workaround

Use the *xset* UNIX command to turn it back on:

```
xset r on
```

UV values with no history may not be retrieved properly when file referencing

Tweaked UV values on polygonal geometry with no history may not retrieve properly in cases where that geometry comes from a referenced file.

Workaround

Introduce some minimal and benign construction history on the object in its referenced file. For example, open the referenced file in Maya, select a vertex, and execute the Edit Mesh > Transform Component command with construction history enabled, without actually moving the vertex.

Dynamic compound attribute

If you add a dynamic compound attribute to a node with other dynamic attributes, and then delete the compound attribute, you will not be able to recreate another dynamic attribute with the same name.

Workaround

Do one of the following:

- Save your scene and reload it.
- Duplicate the object, delete the original, and rename the duplicate to match the original.

Translator limitations

The following limitations and workarounds relate to translator capabilities of Maya.

StudiolImport limitations

(StudiolImport) StudioTools aim constraints have different axes

In StudioTools, if the aim constraints on one object have different axes, when they come into Maya, they will share the same axis—the one used by the first aim constraint on your object.

(StudiolImport) StudioTools faces become trimmed surfaces

StudioTools faces become trimmed surfaces when brought into Maya. Sometimes, the trimmed surface may look different than the original face.

(StudiolImport) srand (seed) replaced by rand (seed) when translated into Maya

If you use function srand(seed) in your expression, it will be replaced by rand(seed) when the expression is translated to Maya.

Workaround

Please replace “rand(seed)” with “rand(1)” if you want a random number from 0 to 1. If you do want to change the seed of the random number in the expression, please use the “seed” function which is available in Maya.

(StudiolImport) Texture mapped onto color in StudioTools becomes image planes on all renderable cameras

The texture mapped onto the color of the StudioTools environment becomes image planes on all the renderable cameras. The size of this image plane is not necessarily correct.

Workaround

Adjust its size to get the desired result.

(StudioImport) Light glow transfer not perfect between StudioTools and Maya

The transfer of light glow is not perfect between StudioTools and Maya. The two main components are the light intensity and light decay. If your StudioTools light intensity is 1.0 and light decay is 0, then you do not need to be concerned.

Workaround

To get a perfect match between StudioTools and Maya light glows, just adjust your Maya glow intensity to:

```
glow_intensity = original_glow_intensity * light_intensity / decay
```

where decay is:

- 1 if no decay
- `light_decay` if decay is 1
- `light_decay**2` if decay is 2
- `light_decay**3` if decay is 3

(StudioImport) Layered shader created in Maya for layered StudioTools shaders

If several shaders in StudioTools are layered on an object, a layered shader is created explicitly in Maya for these shaders.

(StudioImport) StudioTools image plane placement

For StudioTools image plane placement to correctly convert, set the Persp window in StudioTools to the same resolution as the default render resolution, and also choose Screen as the image space type.

(StudioImport) Backdrop image and texture on background color in StudioTools conversion limitation

Both the backdrop image and the texture on the background color in the StudioTools environment are converted to image planes on the renderable cameras. The depth of the image plane for the backdrop image is set to 90% of the far clipping plane. The depth of the image plane for the background color texture is set to 95% of the far clipping plane.

(StudioImport) Losing animation sequence number during conversion

The animation sequence number appended to the end of the image filename in StudioTools could be lost in Maya during the translation.

(StudioImport) StudioTools start/end mode in render settings conversion limitation

The start/end mode in the render settings does not translate properly into Maya, as Maya has no such mode. In this mode, the start and end frames, when transferred to Maya, may end up very different from the range in StudioTools.

Obj limitations

The following limitations and workarounds relate to Obj.

.obj suffix on obj filename necessary

You need a “.obj” suffix on the filename for Maya to recognize it as an obj file.

Workaround

Append .obj to the end of the filename.

MTL textures

MTL textures only work with file textures.

IGES import and export

Level Mapping is not working on export

When using IGES export, level mapping (layers) is not supported.

Additional transform nodes are created for trimmed surfaces

When using IGES export, trimmed surfaces can be exported with extra transform nodes.

Miscellaneous translators

Compression not working using VRML2, OpenInventor export

To use compress in Export Vrm2 and Export OpenInventor please ensure that a zip utility such as gzip is installed and in the path on your machine.

Platform-specific limitations

Maya for Windows limitations

The following limitations and workarounds relate to Maya for Windows issues.

(Windows) Deleting menu items from tear-off menu on Maya

Deleting a menu item from a menu that has been torn off will cause Maya (for Windows) to crash.

Maya for Linux limitations

The following limitations and workarounds relate to Maya for Linux issues.

(Linux) getModifiers command doesn't seem to work on Linux

Maya for Linux may not recognize the Ctrl+click key/mouse sequence.

(Linux) Display differences—with/without hardware overlays

What is displayed as red with hardware overlays is displayed as gray and black on cards without hardware overlays.

If there are no hardware overlays, plug-ins written assuming overlays will probably not work as expected.

(Linux) Dragging and dropping

Dragging and dropping from the desktop to Maya may not work.

(Linux) Window sizes

Some windows may have no height or width initially. Also, a window's default size may prevent option menus from being visible and readable.

Workaround

This usually occurs the first time the window is opened when its size has not been previously set. Resize the window manually.

(Linux) Interface Preferences settings for Show Title Bar in Main Window and In Script Editor

(Window > Settings/Preferences > Preferences > Interface) The states of these window's title bars are not affected by the settings in the Interface: General Interface Preferences window.

(Linux) Maya windows disappear

Depending on the window behavior defined in the Window Manager control panel, windows may automatically raise (come to the front) on focus or when clicking in them. This may result in Maya child windows to disappear. They have been pushed down, and the new window is brought forward.

Workaround

Change the default settings for the following:

- For KDE, and Gnome, see Additional Linux notes in the *Installation and Licensing* guide.

(Linux) Maya for Linux does not support creation of movie files

Maya Linux does not support creation of movie files. This prevents certain other functions, such as Playblast, from working. This also means that Maya Live pointblasts cannot output in movie format.

Playblast can still output a series of images and play it back using FCheck.

(Linux) Input connections do not appear in Hypershade

In Hypershade, when you connect a node1 output to a node2 input, the full menu list of input connections does not appear when you click the node2 input arrow.

Workaround

Click the node2 image itself instead of the input arrow. The full selection is then listed.

Maya for Mac OS X limitations

The following limitations and workarounds relate to Maya for Mac OS X issues.

(Mac OS X) Snapping gets stuck

When holding down any key to enable snapping (for example, v, c, or x) snapping may remain active after the hotkey is released.

Workaround

Click the middle-mouse button again without the hotkey held down.

(Mac OS X) G4/Hardware rendering support

In our efforts to take advantage of recent improvements in the graphics cards available on the Mac, it was necessary to make changes that prevent the use of hardware rendering on machines with G4 processors.

All other Maya functionality available on Mac OS X functions properly on a G4-based machine; however, if you attempt to use hardware rendering, you'll get a warning message that hardware rendering is not supported.

(Mac OS X) Symlinks have been removed from /usr/sbin

In previous versions of Maya, symlinks to licensing software and Maya command-line software were installed in `/usr/sbin` so that users could just type the name of the command at the Terminal (`/usr/sbin/` is included in the default path).

These symlinks have been removed, as they caused problems when multiple versions of Maya were installed or when uninstallation took place.

To get access to these command-line functions, either give the fully-qualified path within Terminal, or use the custom Terminal (`.term`) provided with Maya.

(Mac OS X) Default location to install plug-ins

Maya for Mac OS X provides a default location where you can install plug-ins:

`/Users/Shared/Autodesk/maya/2009`

See also Load or unload Maya plug-ins in the *Basics* guide.

(Mac OS X) Features for Mac OS X not available for Windows or Linux

The following features are available in Mac OS X but not Windows or Linux versions of Maya.

- Tear-off menus in Hot Box
- Posting menus in Hot Box
- QuickTime integration
- Threaded sound playback in time line during scrubbing
- AppleScript executes Maya MEL commands with results returned. (See also Calling MEL from AppleScript and vice-versa of the *MEL and Expressions* guide.)

3rd party programs not available for Mac OS X

- Motion capture drivers

Limitations of Maya for Mac OS X

- Ability to read in pre-Maya 3.0 files

(Mac OS X) Mac OS X file fails to open on Windows XP

A reliable way to transfer Maya ASCII files between Macintosh computers and other platforms running Maya is to use ftp in ASCII mode.

(Mac OS X) Can't use a back slash code in MEL (Korean and Japanese systems only)

Workaround

Type the string on the same line (do not use a back slash to carry the string to the next line).

(Mac OS X) Texture placement manipulator disappears

The Texture Placement manipulator disappears when you make placement changes.

Workaround

Click with the middle mouse button anywhere in the empty space of the scene view to get back the manipulator

(Mac OS X) Interacting with Speed buttons in Fcheck has no effect

In Fcheck, when Every Frame is on, interacting with the Speed buttons (-, +) has no effect on the playback speed.

(Mac OS X) Display problem when selecting isoparm of NURBS surface

A strange pattern may display when you select an isoparm of a NURBS surface.

Workaround

Select the isoparm again to remove the pattern.

(Mac OS X) Tabbing doesn't always work as expected in Add Attribute window

Tabbing in the Add Attribute window (in the Attribute Editor, select Attributes > Add Attributes), does not always work as expected.

Release notes

New Maya commands

The following new commands have been added in Maya 2009. Refer to the MEL Command Reference (Help > MEL Command Reference) for documentation on each new command.

- `animLayer`
- `attributeName`
- `containerProxy`
- `containerTemplate`
- `containerView`
- `copyAttr`
- `frameBufferName`
- `getLastError`
- `getProcArguments`
- `nBase`
- `particleFill`
- `polySelectSp`

- renderPassRegistry
- reorderContainer
- setRenderPassType
- softSelect
- stereoCameraView
- stereoRigManager
- targetWeldCtx
- texSmoothContext
- treeView
- vectorize

Updated Maya commands

The following commands have been updated for Maya 2009. Refer to the MEL Command Reference (Help > MEL Command Reference) for more information.

animCurveEditor

Flag added:

- -constrainDrag

artAttrCtx

Flags added:

- -alphaclamp
- -alphaclamplower
- -alphaclampupper

artAttrPaintVertexCtx

Flags added:

- -alphaclamp
- -alphaclamplower
- -alphaclampupper
- -vertexColorRange
- -vertexColorRangeLower
- -vertexColorRangeUpper

artAttrSkinPaintCtx

Flags added:

- -alphaclamp
- -alphaclamplower
- -alphaclampupper

artFluidAttrCtx

Flags added:

- -alphaclamp
- -alphaclamplower
- -alphaclampupper

artPuttyCtx

Flags added:

- -alphaclamp
- -alphaclamplower
- -alphaclampupper

artUserPaintCtx

Flags added:

- -alphaclamp
- -alphaclamplower
- -alphaclampupper

attrControlGrp

Flags added:

- -annotation
- -handlesAttribute

bakeResults

Flags added:

- -bakeOnOverrideLayer
- -destinationLayer
- -minimizeRotation
- -removeBakedAttributeFromLayer
- -resolveWithoutLayer
- -smart

bakeSimulation

Flags added:

- -bakeOnOverrideLayer
- -destinationLayer
- -minimizeRotation
- -removeBakedAttributeFromLayer
- -resolveWithoutLayer

- -smart

bevelPlus

Flag added:

- -bevelInside

cacheFile

Flags added:

- -cacheFormat
- -cacheableAttrs
- -creationChannelName
- -replaceWithoutSimulating
- -runupFrames

camera

Flag added:

- -displayGateMask

channelBox

Flags added:

- -attrBgColor
- -attrColor
- -attrFilter
- -attrRegex
- -containerAtTop
- -nodeRegex
- -update

colorIndex

Flag added:

- -debug

commandPort

Flag added:

- -listPorts

container

Flags added:

- -asset
- -assetMember
- -bindAttr
- -connectionList
- -current
- -fileName
- -includeHierarchyAbove
- -includeHierarchyBelow
- -includeNetwork
- -includeShaders
- -includeShapes
- -includeTransform
- -nodeNamePrefix
- -parentContainer
- -preview
- -publishAndBind
- -publishAsChild

- -publishAsParent
- -publishAsRoot
- -publishAttr
- -publishConnections
- -publishName
- -unbindAndUnpublish
- -unbindAttr
- -unpublishChild
- -unpublishName
- -unpublishParent
- -unsortedOrder

convertLightmap

Flag added:

- -useLensBake

cycleCheck

Flag added:

- -query

dgtimer

Flag added:

- -hide
- -overhead
- -rangeLower
- -rangeUpper
- -returnType

- -show
- -sortMetric
- -sortType
- -trace
- -uniqueName
- -updateHeatMap

displayPref

Flag added:

- -displayGradient

displayString

Flag added:

- -delete

dynParticleCtx

Flag added:

- -nucleus

editorTemplate

Flags added:

- -annotation
- -listExtraAttributes
- -queryLabel

evalDeferred

Flags added:

- -evaluateNext

- -list

file

Flags added:

- -lastFileOption
- -lockContainerUnpublished

Flags removed:

- -objectType
- -subType

fileBrowserDialog

Argument type changed for -fileCommand from string to script.

fileDialog

Flags added:

- -defaultFileName
- -title

gradientControlNoAttr

Flags added:

- -asString
- -changeCommand
- -currentKey
- -currentKeyChanged
- -currentKeyColorValue
- -currentKeyCurveValue
- -currentKeyInterpValue

- -dragCommand
- -rampAsColor

headsUpDisplay

Flags added:

- -getOption
- -setOption

headsUpMessage

Flags added:

- -uvTextureEditor
- -viewport

help

Flags added:

- -listUnconverted
- -syntaxOnly

hudSliderButton

Argument types changed:

- For -buttonPressCommand from string to script.
- For -buttonReleaseCommand from string to script.

hyperGraph

Flags added:

- -graphDescription
- -heatMapDisplay
- -imageForContainer

- -layoutSelected
- -mergeConnections
- -opaqueContainers
- -range
- -showRelationships

Flags removed:

- -invertRegularExpressionFilter
- -regularExpressionFilter

iconTextButton

Flag added:

- -commandRepeatable

itemFilterAttr

Flag added:

- -published

layoutDialog

Argument type changed for -uiScript from string to script.

listAttr

Flags added:

- -hasNullData
- -ramp
- -usedAsFilename

listHistory

Flags added:

- -futureLocalAttr
- -futureWorldAttr
- -historyAttr
- -query

lockNode

Flag added:

- -lockUnpublished

ls

Flags added:

- -deletable
- -internal
- -nonDeletable
- -preSelectHilite

manipMoveContext

Flags added:

- -postDragCommand
- -preDragCommand
- -preserveUV
- -tweakMode

manipOptions

Flag added:

- -preselectHighlight

manipRotateContext

Flags added:

- -postDragCommand
- -preDragCommand
- -preserveChildPosition
- -preserveUV
- -tweakMode

manipScaleContext

Flags added:

- -postDragCommand
- -preDragCommand
- -preserveChildPosition
- -preserveUV

Mayatomr

Flags added:

- -fragmentMaterialAssignments
- -passContributionMaps
- -passUserData
- -render
- -useLensBake

memory

Flags added:

- -dump

- -kiloByte
- -mark
- -megaByte

menu

Flag added:

- -fullPathName

modelEditor

Flags added:

- -cameraSetup
- -editorChanged
- -nParticles

modelPanel

Flag added:

- -barLayout

move

Flag added:

- -preserveUV

nParticle

Flags added:

- -attribute
- -cache
- -conserve
- -count

- -deleteCache
- -dynamicAttrList
- -floatValue
- -gridSpacing
- -inherit
- -jitterBasePoint
- -jitterRadius
- -lowerLeft
- -name
- -numJitters
- -order
- -particleId
- -perParticleDouble
- -perParticleVector
- -position
- -shapeName
- -upperRight
- -vectorValue

Flags removed:

- -clearCachedTextureMap
- -clearStart
- -stuffStart
- -textureToVertex

nameCommand

Flag added:

- -sourceType

nodeCast

Flag added:

- -copyDynamicAttrs

outlinerEditor

Flags added:

- outlinerEditor
- -autoExpandLayers
- -containersIgnoreFilters
- -organizeByLayer
- -showAnimLayerWeight
- -showAssets
- -showContainedOnly
- -showContainerContents
- -showPublishedAsConnected

playblast

Flags added:

- -activeEditor
- -cameraSetup

pluginInfo

Flags added:

- -activeFile

- -cacheFormat

pointOnCurve

Flag renamed:

- -n to -no

pointOnSurface

Flag renamed:

- -n to -no

polyBoolOp

Flag added:

- -preserveColor

polyColorSet

Flags added:

- -currentPerInstanceSet
- -perInstance
- -shareInstances
- -unshared

polyCrease

Flag added:

- -operation

polyMergeVertex

Flag added:

- -mergeToComponents

polyMultiLayoutUV

Flags added:

- -offsetU
- -offsetV
- -prescale
- -sizeU
- -sizeV

polyPrism

Flag added:

- polyPrism

Flag renamed:

- -ns to -nsi

polyPyramid

Flag added:

- -numberOfSides

Flag renamed:

- -ns to -nsi

referenceQuery

Flags added:

- -showDagPath
- -showNamespace

renderSettings

Flags added:

- -camera
- -customTokenString
- -fullPath
- -fullPathTemp
- -genericFrameImageName
- -imageGenericName
- -layer
- -leaveUnmatchedTokens

renderWindowEditor

Flags added:

- -currentCameraRig
- -displayImageViewCount
- -nextViewImage
- -resetViewImage
- -stereo
- -stereoImageOrientation
- -stereoMode
- -viewImageCount

renderer

Flags added:

- -batchRenderOptionsStringProcedure
- -iprOptionsProcedure

rotate

Flags added:

- -preserveChildPosition
- -preserveUV

scale

Flags added:

- -preserveChildPosition
- -preserveUV

scriptCtx

Flags added:

- -debug
- -meshComponents
- -nParticle
- -nParticleShape

scriptJob

Flag added:

- -nodeNameChanged

scriptedPanelType

Flag added:

- -copyStateCallback

selectMode

Flag added:

- -debug

selectPref

Flags added:

- -containerCentricSelection
- -manipClickBoxSize
- -paintSelect
- -paintSelectWithDepth
- -preSelectHilite
- -preSelectHiliteSize
- -straightLineDistance
- -useDepth

selectPriority

Flags added:

- -debug
- -nParticle
- -nParticleShape

selectType

Flags added:

- -debug
- -meshComponents
- -nParticle
- -nParticleShape

setEditor

Flag added:

- -debug

setKeyframe

Flags added:

- -animLayer
- -dirtyDG
- -identity

shelfButton

Flag added:

- -commandRepeatable

snapMode

Flags added:

- -pixelCenter
- -pixelSnap

stackTrace

Flags added:

- -parameterCount
- -parameterType
- -parameterValue

symmetricModelling

Flags added:

- -preserveSeam
- -reset
- -seamFalloffCurve
- -seamTolerance

texRotateContext

Flags added:

- -snap
- -snapRelative
- -snapValue

texScaleContext

Flags added:

- -snap
- -snapRelative
- -snapValue

timeControl

Flags added:

- -animLayerFilterOptions
- -animLayerShowWeight
- -forceRefresh

transferAttributes

Flag added:

- -searchMethod

undoInfo

Flags added:

- -closeChunk
- -openChunk
- -printQueue

viewManip

Flags added:

- -fitToView
- -frontParameters
- -goDefault
- -goHome
- -homeParameters
- -levelCamera
- -resetFront
- -resetHome
- -restoreCenter
- -selectionLockParameters
- -setFront
- -setHome
- -toggleSelectionLock

viewPlace

Flag added:

- -animate

wrinkle

Flags removed:

- -geometry
- -remove

xform

Flag added:

- -preserveUV

Maya commands limitations

General

Menu bar layouts

Menu bar layouts are not visible until a child control is added.

Workaround

Create the menu bar layout and children and then show the window.

MEL

Using a string as an integer may crash Maya

Maya may crash if you source a MEL script that tries to operate on a string as an integer.

MEL array limitation

When a MEL array is specified using the {} notation then the type of the array is inferred from the first argument in the array. Therefore, an array declared with an integer as its first argument will generate a warning if a float value is specified later. These values will be converted to integers. Here is an example:

```
float $arr[] = { 1, 2.5 };  
// Warning: Casting from float to int may result in a loss of  
precision. //  
print($arr[0] + " " + $arr[1] + "\n");  
1 2
```

The value of the second element in \$arr is 2, not 2.5 as expected.

Workaround

Make sure you declare the first element of the array as the type that you want the array to have. In the case above, this would mean declaring the array as:

```
float $arr[] = { 1.0, 2.5 };
```

By declaring the "1" as "1.0", the type of the array is indicated to be float.

Polygon create command texture flag is no longer supported

The `-texture` flag (`-tx`) for the polygon create commands is no longer supported as of Maya 8.0. The `-createUVs` flag (`-cuv`) should be used instead.

Using a dash in MEL strings

If the first character of a string begins with a dash, the MEL interpreter assumes it is a command flag.

However, this is now a specific case where you can use strings that begin with dashes in MEL commands: the **setAttr** command can now set an attribute of type string with a value string that begins with a dash.

We strongly recommend against using strings in MEL that begin with dashes because they will not work in any other command. If you try to use these strings as attributes in any other command, you will get incorrect results.

stringArrayIntersector

In batch mode, the MEL function `stringArrayIntersector` does not work.

Python

Script editor cannot source .py file

Attempting to source a `.py` (Python) script in the Script Editor (File > Source Script) returns errors, as it is being read as MEL.

Workaround

Use the import directive. The script must be in your `PYTHONPATH` or `sys.path`.

The script node does not accept Python

You cannot use Python in script nodes.

Workaround

Write your Python script in a `.py` file and save it in your scripts directory. Use the MEL command below in a script Node.

```
python("\ \ import myPythonScript;\ myPythonScript.pyCommand();\ \ "); 262522 nf 10.0
```

Can't import a Maya Python module twice in Toxik

There is a known issue that prevents Toxik from importing a Maya Python module a second time in a new Python embedded interpreter.

Runtime commands from Python and hotkeys

Menu items that are runtime commands from Python don't display hotkeys.

Python commands in menuItems on the Shelf produce an error

Python commands attached to menuItems that are part of Shelf buttons produce an error when Maya is restarted. Although this works the first time around, because it is being created with the **menuItem** command (`-command` flag is `SCRIPT` type), the second time it is being created in the saved `shelf.mel` file, with the **shelfButton** command whose `-mi` flag takes the String String (multi-use) arguments.

Workaround

- 1 Wrap your Python commands in the MEL **python** command:

```
mc.menuItem(checkBox = True, label = "menuItem 1", command = "python(\"print 'MENU ITEM 1 PRESSED'\")")
mc.menuItem(checkBox = True, label = "menuItem 2", command = "python(\"print 'MENU ITEM 2 PRESSED'\")")
```

- 2 Keep a Python script in your local `maya/scripts` folder that has the functions you want to call from the Shelf:

```
"python(\"import shelfScripts;shelfScripts.thisFunction();\")"
```

You must restart Maya once you add the Shelf commands, before you use the menus.

Python runtime commands produce an error

Python runtime commands do not find their procedures when Maya is restarted; the are being incorrectly interpreted as MEL commands.

Workaround

- 1 Wrap your Python commands in the MEL **python** command.
- 2 Keep a Python script in your local `maya/scripts` folder that has the functions you want to call from the runtime command:

```
"python(\"import myRunTimes;myRunTimes.thisFunction();\")"
```

When you re-start Maya, Maya uses the MEL interpreter and correctly executes your functions.

Missing Python modules from 64-bit systems

The following modules are not included in 64-bit distributions of Python (Windows and Linux):

audioop, imageop, rgbimg

For more information, see <http://svn.python.org/projects/python/trunk/README>

Release notes

File formats limitations

Sets on .obj files imported into Maya considered shading groups

All sets on .obj files imported into Maya are considered shading groups. This means that adjustment of an object's rendering groups within Maya causes simultaneous modification of the membership of the sets that were imported from the .obj file.

Workaround

In Maya, for each .obj file set whose membership you wish to preserve, select the contents of the set and create a new set.

Importing Adobe Illustrator 9.0 eps files into Maya

Importing an Adobe illustrator 9.0 eps file into Maya results in a transform node, but there is nothing in the view.

Workaround

In Adobe illustrator 9.0, save as an eps file and specify that it be in Adobe Illustrator 8.0 format.

File referencing limitations

Proxy references do not support renaming prefixes

Renaming prefixes do not work with proxy references for name clash resolution.

Workaround

Use the namespace option when working with proxy references.

Namespaces and loading of referenced nodes

Maya always loads referenced nodes into a temporary namespace, then moves them into their permanent namespace. Therefore, the name returned by the node added callback is different than the name returned by the node removed callback.

Workaround

In order to track nodes consistently, you must use the `nameChanged` callback to find the name of the object after it has been put in its permanent namespace.

Referencing multiple scenes that contain mental ray data produces unexpected results

Referencing multiple scenes that contain mental ray for Maya data may cause the following issues:

- The Script Editor displays multiple warning messages regarding already connected nodes when the referenced files are loaded.
- Rendering the scene produces an image based on unexpected render settings.

Maya does not correctly distinguish between the shared nodes that exist for mental ray Render Settings. Each time a reference within one of these nodes is loaded, it applies the `setAttrs` and `connectAttrs` from that file to the shared node. The mental ray for Maya Render Settings that result will depend on the last reference that gets loaded.

Workaround

- In Maya, set the same Render Settings for each file you intend to reference for your scene.
- Reference the files into your parent scene, ignoring the warning messages.
- Confirm the mental ray for Maya Render Settings prior to rendering.

When a reference is locked, animation on compound attributes, such as translate and rotate, may not play back.

Workaround

If you need the animation for feedback, but want to make sure that the reference is not accidentally modified, you can customize your locking by adding the parent compound attributes to the Excluded attributes script. Alternatively, instead of locking the reference, you can put it in a display layer with the appropriate settings to avoid accidentally selecting it.

Export As Reference not working with file references containing multiple layers

It is not possible to Export As Reference multiple objects from a scene where multiple layers exist.

Workaround

Remove the multiple layers and export the objects as references and reassign the layers afterwards.

Poly mesh geometry must have construction history to be modified within the parent scene

If you reference a scene containing a poly mesh and perform modifications to that mesh from within the parent scene, those modifications will not be respected unless the poly mesh had an existing construction history before it was referenced.

Workaround

Ensure that any referenced poly mesh geometry has at least one history node in the referenced file prior to referencing.

Reference edits may be lost when using identical node names

In order to apply an edit to a node from a reference it must be able to uniquely identify the node. In the following case this is not possible:

- Using renaming prefixes and you add a node to the parent file that has the same name as the renaming prefix and the reference node name.

Workaround

Make sure the names of your nodes are unique before you start applying edits in the parent scene.

Hypergraph layouts of objects from referenced files ignored

The Hypergraph layouts of objects from referenced files are ignored when the file is referenced.

Workaround

Make any adjustments to the layout of the objects in the referencing file. Keep your Hypergraph closed when importing/referencing, and then clean up afterwards.

Expressions and back-quoted commands limitation

If a referenced or imported file contains expressions and the expressions contain back-quoted commands, then the part in back-quotes will not have any node names prefixed properly.

Workaround

Use namespaces when referencing or importing files. Alternatively, you can modify your expressions to not use MEL commands or back-quoted expressions. C style expressions such as “foo.x = 0.5” are treated correctly in references and the nodes will be correctly renamed. However, MEL style commands such as “setAttr foo.x 0.5” will not work correctly.

Limitations with using prefixes for name clash resolution

When referencing a file using a renaming prefix that in turn references a file using a namespace, the outer renaming prefix will be turned into a namespace instead.

Referencing a file into the same scene multiple times using the default renaming prefix will result in ambiguous references to the objects contained within that file. Note that referencing a file multiple times into the same scene can happen indirectly if a file being referenced or imported references that scene.

Workaround

Use namespaces for all your file references. For import though, once you use namespaces, everything gets put in a namespace, whether it's clashing or not (even if it already has a namespace, it gets another one added on). But if you use prefixes, it will strip out existing namespaces, and then resolve clashes with prefixes. So you may wish to choose your method of clash resolution depending on what's in your file already. Alternatively, you can ensure that you assign unique rename prefixes to files that will be imported multiple times. You can do this by going to the File > Import options box or by using the `-renamingPrefix` flag on the file command in the Script Editor.

Problems importing and referencing the same file with the same prefix

There are problems with importing and referencing the same file with the same prefix. If the file is referenced and then imported then all is well. However, if the file is imported and then referenced, there are ambiguities in object names. Also, if the same renaming prefix is used with multilevel references, the resulting file may contain errors.

Workaround

Use namespaces when importing or referencing files. Alternatively, you can either reference the file before importing it or change the renaming prefix between importing and referencing.

Namespace or name-clash mechanisms limitation

When creating a reference in the current scene, and this reference in turn contains a referenced MEL script, the namespace or name-clash mechanisms will not be applied to any node names referred to in the script. This can cause problems if the MEL script relies on explicit names that are contained in the referenced file.

Workaround

Try to create MEL scripts that are not dependent on the actual naming of nodes contained in the scene.

Can't replace nested reference

Replacing a nested reference file (i.e., a reference which is not a child of the main scene) is a temporary action. The reference to the new file will not be saved with the main scene.

Workaround

Open the parent file of the reference and replace it there.

Can't save reference edits with Shared Shading Networks or Shared Display Layers on

If a reference is created with the Shared Shading Networks or Shared Display Layers options, you will not be able to Save Reference Edits to it. The menu item in the UI is not available, and an error will be returned when using the `file -saveReference` command.

Changing the structure of shading networks prevents sharing

When creating references with the Shared Shading Networks option you should avoid changing the structure of any resulting shared shading networks. If nodes are added or removed from the shading network in the parent scene (for example, by creating a node in the parent scene and connecting it to one of the referenced shading network nodes), the network may not be correctly shared the next time a reference is reloaded.

This limitation does not apply to the modification of attributes or attribute values: attributes can be added or deleted, and attribute values changed.

Problems with nodes when exporting animation

The export animation flags of the `file` command only write out animation nodes. When you have animation nodes parented under other nodes which are not exported, Maya writes out `connectAttr` commands that reference these missing nodes. A relative path is used for these connectAttrs because the most common scenario is when these missing nodes actually belong to some other referenced file.

In cases where there are non-unique node names involved, the relative paths for non-exported nodes can be the same if the exported nodes are parented under different nodes with the same name. This creates incorrect results when the exported animation is re-imported to Maya.

Workaround

Make sure that parent (non-animation) nodes, such as locators, are uniquely named, or choose a way of exporting (such as export selected) that also exports the parented non-animation nodes.

Release notes

RIB Export limitations

The following limitations and workarounds relate to Rib Export.

Not all Maya objects are converted by RIB plug-in

Not all Maya objects are converted by the RIB plug-in. Most notably, textures and particles are not converted. However, cameras, lights, geometry and their animation are translated correctly. A very simple algorithm maps Maya's lambert, phong, and blinn shaders to their RenderMan equivalents and copies the color attribute. If a texture is mapped to the shader in Maya, then the resulting RenderMan color will be indeterminate. Also note that this version of the plug-in does not support per-face shading groups, thus shaders assigned to specific faces will not be converted, and those faces will be white when rendered by RenderMan.

Maya light decays and RenderMan default settings

RenderMan's lights all have a decay of 2, which may cause illumination mismatches in lighting if you have your light's decay set to anything other than 2 in Maya.

Workaround

Set all Maya light decays to 2.

Maya's ambient lights are not well represented in RenderMan

Maya's ambient lights are not well represented in RenderMan and will tend to wash out the RenderMan rendered scene once translated.

Workaround

Reduce the intensity of your ambient lights before translation, remove them altogether, or set the ambient shade parameter to 0 in Maya to better match the RenderMan look.

Warnings for scene written to RIB with disabled motion blur

If a scene is written to RIB with motion blur disabled, when that file is rendered by RenderMan it will generate warnings of the form: "R07005 Premature RiMotionEnd".

Workaround

These can be safely ignored. This problem will be corrected in a future Maya release.

Release notes

API and Devkit limitations

The following lists limitations and workarounds for the API and Devkit for Maya 2009. We also recommend that you read the *API guide* documentation before attempting a major project using Maya.

It is not possible to distinguish between the color black and an unassigned color in an MPxHwShaderNode plug-in

There currently is no way of setting what value to use for an unassigned color of an `MPxHwShaderNode` plug-in. Currently, the color black or 0,0,0,1 is used as the unassigned color.

Unable to unload an MPxNode plug-in if MPxData is specified

If a `MPxNode` plug-in creates an `MPxData` in its `initialize()` method, you will receive a warning that the plug-in is in use when trying to unload it even if you have not created a node. This is because the proxy `MPxData` type is in use.

Workaround

Do not create the `MPxData` until it is required in the `compute()` method.

MItMeshPolygon::getColors(colorArray) does not provide access to all colors

There is a second parameter to the `MItMeshPolygon::getColors()` method. This parameter specifies the list of color sets that should be considered in the method. If not specified, this method will operate on the current color set.

Workaround

Specify the list of color sets that should be considered by the `MItMeshPolygon::getColors()` method.

Plugs are deleted upon deleting or disconnecting nodes

When deleting or disconnecting nodes that are connected to other nodes, the plugs that are connected to the deleted or disconnected nodes gets deleted as well.

Workaround

Create a new plug for every attribute.

Attribute changed callbacks limitation

Attribute changed callbacks are not invoked if the modification to the attribute is made by a tool such as Move.

MFnDependencyNode flags limitation

`MFnDependencyNode` flags are not reset when they are deallocated. Resetting these flags requires an entire DG traversal.

For best performance, it is better for you to control this operation since you may only be interested in a subset of the depend nodes in the scene.

MFnMesh::assignUVs() does not support history

The method `MFnMesh::assignUVs()` does not support history. As a result, modifications made to UVs with this method may be overwritten as the dependency graph updates.

Long names of attributes can be incorrectly re-used

It is possible to create new attributes on a node that have the same long name as an already existing attribute but differs by the short name. This will cause updating problems for the Channel Box and Attribute Editor.

API plugs and dependencies hierarchy limitation

The API does not support hierarchies of plugs and their dependencies in a single dependency node. Dirty propagation works correctly across connections between nodes, but not between internal attributes on a user-defined node made with `MPxNode`.

Workaround

Use the method `attributeAffects()` to “flatten hierarchies” when declaring their affects behavior between all inputs and outputs on your node.

OBJ files need “.obj” extension

Wavefront OBJ files need the `.obj` extension to be recognized automatically when the File > Open Scene Import option is set to Best Guess.

Workaround

Set the Import option to OBJ to import a file without the `.obj` extension.

Batch rendering scenes with plug-ins

If you have a Maya scene that uses two (or more) plug-ins, both of which fail in their “initializePlugin” method (due to a missing license for example), and both plug-ins require one of the libraries `OpenMayaUI`, `OpenMayaAnim` or `OpenMayaFX`, when attempting to batch render the scene Maya may produce a fatal error.

Workaround

Manually add the following lines at the end of your `userPrefs.mel` file.

```
dynamicLoad OpenMayaUI
dynamicLoad OpenMayaAnim
dynamicLoad OpenMayaFX
```

Unloading and reloading plug-in

If a plug-in command is called from an expression or a MEL procedure, and after the expression or procedure has been parsed, the plug-in is unloaded (or unloaded and then reloaded), Maya may produce a fatal error if the expression is triggered or the procedure is re-executed. When MEL parses the expression or procedure, it saves a pointer to the `doIt` method of the plug-in command. The value of this pointer is not normally recalculated, so if the plug-in is unloaded or reloaded at a different location, the pointer is no longer valid.

Similar issues will occur if `MFnPlugin::registerUI()` is used to register a command defined by a plug-in.

Workaround

Enclose the call to the plug-in command in a MEL *eval* statement. This forces MEL to compile the statement each time the expression is evaluated or the procedure is run. If the plug-in has been unloaded this is detected and an error results. If the plug-in has been reloaded, the new location of the `doIt` method is computed during the recompile.

Custom material shader plug-in with a glow intensity attribute

If a custom material shader plug-in is implemented with a glow intensity attribute, this attribute will be ignored by the software renderer unless an internal Maya material shader in the scene (e.g. `lamBERT`, `blinn`, `phong`) has a `glowIntensity` value greater than zero. Currently the software renderer only queries material shader nodes that match the internal types for a `glowIntensity` value that is greater than zero. There is no way to directly override this limitation.

Workaround

In order to assure the rendering of a custom shader's `glowIntensity` attribute an `MSceneMessage::kBeforeSoftwareRender` callback and an `MSceneMessage::kAfterSoftwareRender` callback must be registered. The first callback must create an internal material shader node via `"shadingNode -asShader lambert;"` and it must retrieve the node name returned. Then it must set that node's `glowIntensity` attribute to a value greater than zero. The second callback will simply remove this "dummy" node.

Connecting the plugs of two nodes and breaking the connection

There may be situations in which it is desirable to connect the plugs of two nodes and then soon after break this connection. If `MDGModifier::connect()` is used to connect geometry data between two nodes and if this connection is broken before the screen is refreshed the data will not be cached on the downstream node.

Workaround

A call to

```
M3dView::active3dView().refresh();
```

before disconnecting the plugs will force the dependency graph to evaluate. This will cause the downstream geometry node to read the input data, and after this evaluation the data is available for caching to the node if the connection is subsequently broken.

Incomplete MPlugs

The plug passed to the user defined method that is registered with `MNodeMessage::addAttributeAddedOrRemovedCallback()` is an incomplete `MPlug`. Complex data type values will not be accessible via `MPlug::getValue(MObject value)`.

Workaround

This problem can be circumvented by using code similar to the following.

```
MFnDependencyNode fnDn(plug.node());
/*where "plug" is the name of the plug passed in as a parameter
*/
MString newPlugName(plug.name());
/* MPlug::name() will actually return a string containing the
"nodeName.attributeName" so it may need to be parsed for the fol
lowing call. */
MPlug realPlug = fnDn.findPlug(newPlugName);
```

In the above example, “realPlug” is a fully functional and accessible `MPlug`.

Custom nodes with store-able internal attributes that are arrays

Custom nodes with store-able internal attributes that are arrays may display incorrect array indices when they are read into Maya from a scene file

containing the node. This will be apparent in the `MPxNode::setInternalValue()` method if the number of array elements is compared to the plug's logical index and they are found to be equal in value. It is important to note that this will occur only with internal attributes.

Type of MObject that Maya passes

The type of `MObject` that Maya passes to the following methods will always be `MFn::kInvalid`.

```
virtual MPxGeometryIterator * iterator (MObjectArray & componentList, MObject & component, bool useComponents)
virtual MPxGeometryIterator * iterator (MObjectArray & componentList, MObject & component, bool useComponents, bool world) const
```

These routines are used in classes derived from `MPxGeometryData`. There is currently no workaround for this problem.

No hooks for creating light shader nodes

There are currently no hooks from within the API for creating light shader nodes with properties similar to Maya's area light node.

Creating a blendShape

If a `blendShape` is created from within the API using `MFnBlendShapeDeformer::create()`, the method `MFnBlendShapeDeformer::addBaseObject()` will fail if used with the `MObject` of a curve that was newly created using `MFnNurbsCurve::create()`.

Workaround

A simple workaround is to locate the `MDagPath` of the newly created NURBS curve and obtain the `MObject` from that class. This object can be used successfully with `addBaseObject()`.

Tools performing “add pick”

Tools made with `MPxSelectionContext` perform an “add pick” by default as opposed to the built in Maya selection tools which perform a “replace pick” by default. An “add pick” adds a selection to the active selection list while a “replace pick” replaces the current selection list with the selected object or objects.

Workaround

Use `MGlobal::displayInfo()` to instruct the user to left click the mouse in an empty part of the scene in order to begin a new selection.

Method `setCursor()`

When the method `setCursor()` is called with an instance of an `MPxSelectionContext` class the method will fail. The same method called with an instance of `MPxContext` will function as documented.

Method `MDrawRequestQueue::isEmpty()`

Using the method `MDrawRequestQueue::isEmpty()` on an instance of `MDrawRequestQueue` to which no `MDrawRequests` have been added will cause Maya to crash.

Workaround

The method operates as documented if called on a queue to which one or more `MDrawRequests` have been added. Incorporate state checking code to assure that an `MDrawRequest` has been appended before make a call to `isEmpty()`.

Assigning a texture shader as an input to a built-in Maya material shader

When a user assigns a texture shader as an input to a built-in Maya material shader (for example, `lamBERT`) a connection is automatically made between the texture node's message attribute and the downstream `materialInfo` node's `texture[0]` attribute. This is necessary for accurate hardware rendering. This does not happen automatically with custom material shaders and procedures will have to be implemented to make the connection. Unfortunately when the scene is saved and re-opened the texture will no longer be connected to the `materialInfo` node's `texture[0]` attribute. Instead the material shader's message attribute will have this connection.

Workaround

Procedures will have to be implemented to break this connection and reconnect the texture node's message attribute with the `texture[0]` attribute. Possible solutions may include: the registering of a callback in the plug-in's initialize method to check for this connection and alter it if necessary, or the

modification of the AE template script to make such connections when necessary.

Monitoring the desired hardware resolution of a Texture2d node

To monitor the desired hardware resolution of a Texture2d node the renderer queries its resolution attribute. This attribute is added dynamically to a texture when the user sets the Hardware Texturing >Texture Quality of a built in material shader node (e.g. lambert.). This is not the case with custom material shader plug-ins.

Workaround

A procedure must be implemented that will dynamically add the resolution attribute (type kLong) to an input texture. The resolution attribute can have the values: 32, 64, 128, or 256.

MPxContext::doHold() method

The `MPxContext::doHold()` method is called on a context tool even if the Alt key is pressed. Ordinarily the use of the Alt key should override the context tool and allow exclusive use of the tumble mechanism. Instead, both happen simultaneously.

Shader plug-ins and using float2 compound attributes

Shader plug-ins that make use of `float2` compound attributes may occasionally receive incorrect data from the data block.

Workaround

It is best to extract the data as a compound attribute, and retrieve the contents individually. In other words, the first example is preferred over the second equivalent example.

```
float2& uv = block.inputValue( aUVCoord ).asFloat2();  
float u = uv[0];  
float v = uv[1];  
vs.  
float& u = block.inputValue( aUCoord ).asFloat();  
float& v = block.inputValue( aVCoord ).asFloat();
```

Coding it the second way may result in the u and v values being the same in certain cases.

Calling `MFnMesh::deleteFace()`

A call to `MFnMesh::deleteFace()` will insert a `deleteComponent` node as construction history upstream from the affected mesh, however a call to `MFnMesh::addPolygon()` does not insert a corresponding construction history node.

Workaround

`MFnMesh::addPolygon()` should only be used from within the compute method of a node that is placed upstream from the affected mesh object. Within the compute method the `MFnMesh` instance will act upon the `kMeshData` that is passed through as input and output data.

Querying the active view port within the API

There is no way within the API to query the active view port to find out if textures are currently displayed, nor is it possible to set this option.

MPxCommand and complex data types

When writing an `MPxCommand` that is intended to receive arguments from the MEL command line, please be aware that there is no way to hand a command plug-in a complex data type by pointer value.

Workaround

The class `MArgList` contains several methods that permit the passing of complex data types from the MEL command line to a plug-in command. These are:

```
MStatus get( unsigned& indexReadAndUpdate, MVector&, unsigned
numElements=3 ) const
MStatus get( unsigned& indexReadAndUpdate, MPoint&, unsigned
numElements=3 ) const
MStatus get( unsigned& indexReadAndUpdate, MMatrix& ) const
MStatus get( unsigned& indexReadAndUpdate, MIntArray& ) const
MStatus get( unsigned& indexReadAndUpdate, MDoubleArray& ) const
MStatus get( unsigned& indexReadAndUpdate, MStringArray& ) const
```

`MFnPluginData::create()` will fail to maintain a reference to an `MObject`

`MFnPluginData::create()` will fail to maintain a reference to an `MObject` if the assignment is not done at the time of creation. For example this will fail:

```
fnPluginDat.create(id, &stat);  
MObject obj = fnPluginDat.object();
```

Workaround

Always assign the `MObject` at the time of creation so that a reference will be maintained internally. For example:

```
MObject obj = fnPluginDat.create(id, &stat);
```

MFnFreePointTriadManipulator::setSnapMode(false)

If `MFnFreePointTriadManipulator::setSnapMode(false)` is set to `false`, it will remain in `snapMode` if a single axis handle is manipulated. If the central handle is used the manipulator will move freely.

Global selection list does not preserve selection order of mesh object components

The global selection list does not preserve selection order of mesh object components. For example, a tool designed to operate selected mesh vertices should not depend on the selection order.

MItDependencyGraph only traverses connections that affect the specified starting plug or node

`MItDependencyGraph` only traverses connections that affect the specified starting plug or node. Therefore, it may not traverse some connected nodes, such as connections to message attributes or dynamic attributes. Also, connections to a transform node's `translate`, `rotate`, `scale` attributes will not be found if traversing upstream through the `worldMatrix` output. Additionally, since `AnimUtil::isAnimated()` relies on `MItDependencyGraph` for its functionality, it will not find `animCurves` connected to the `translate`, `rotate` or `scale` if getting there requires traversing the transform node's `worldMatrix` attribute.

Workaround

When using `MItDependencyGraph`, when a transform node or message plug is reached, prune the current iteration and start another `MItDependencyGraph`. When using `MAnimUtil::isAnimated()`, when a transform node or message plug is reached, call `MAnimUtil::isAnimated()` again.

Invoking the objExists MEL command limitation

Invoking the objExists MEL command with MGlobal::executeCommand() during the retrieval of a scene file can produce incorrect results.

MArgDatabase::getFlagArgument() and MArgParser::getFlagArgument() usage limitation

The methods MArgDatabase::getFlagArgument() and MArgParser::getFlagArgument() require that numbers larger than 2^{31} be enclosed in quotes.

MPxSurfaceShape related problems

The following lists MPxSurfaceShape related problems.

User defined shapes created with MPxSurfaceShape

User defined shapes created with MPxSurfaceShape cannot support per-components texturing or shading.

MFileObject resolvedName empty if file not found

The resolved path and name for MFileObject are now empty if the file was not found. Previously, they used to be the same as the raw path and name.

The following functions now return an empty string if the file was not found:

- name()
- path()
- fullPath()
- resolvedName()
- resolvedPath()
- resolvedFullName()

Release notes

Maya Help limitations

Microsoft Internet Explorer blocks help content (Windows)

The Maya Help for Autodesk Maya uses JavaScript, which Microsoft Internet Explorer blocks by default for HTML pages on My Computer.

By default, each time the help is accessed from My Computer, you see a security warning message asking you if you want to show active content. Clicking on the message and selecting Allow Blocked Content allows the page to load.

To turn off this message permanently:

Within Internet Explorer, go to Tools > Internet Options, click the Advanced tab, and scroll down to the Security section. Turn on “Allow active content to run in files on My Computer.”

Microsoft Internet Explorer shows a warning about an ActiveX control (Windows)

When you have registered the browser plug-in COM object on Windows (see Install the Maya Web browser plug-in in the Basics guide) loading the Maya Help system from My Computer may show the following warning:

“An ActiveX control on this page might be unsafe to interact with other parts of this page. Do you want to allow this interaction?”

Click Yes to continue loading the help page.

Essential skills movies require QuickTime 7.1 or later

Please upgrade your version of QuickTime if you experience any problems viewing the movies.

Essential skills movies do not playback normally across network with QuickTime 7 for Windows

The Essential skills movies may not playback consistently if Maya is accessed across a network when using QuickTime 7 for Windows. The movies will playback normally if Maya is installed on your computer's hard drive. This was a known issue with Apple QuickTime 7 for Windows when Maya 7 was shipped.

Essential Skills Movies caption text may not appear at the beginning of a movie when played on Windows

The caption text that normally appears at the bottom of the Essential Skills Movies may not appear at the beginning of the movie on Windows computers when the movie is first launched if the QuickTime Player options are set to automatically play the movie when opened. This issue appears to only occur on Windows.

Workaround

On Windows computers, do the following in your QuickTime Player:

Select Edit > Preferences > Player preferences, and turn off *Automatically play movies when opened*.

Select Edit > Preferences > QuickTime Preferences, select the Browser tab, and turn off *Play Movies Automatically*.

Essential Skills Movies caption text may appear incorrect on Windows when the codepage setting and language setting for the movie are mismatched

The text captions for the Essential Skills movies may appear incorrectly when played back on Windows computers when the codepage setting and language setting for the movie are mismatched. For example, when playing back a movie with the movie's language set to Chinese, on a computer whose codepage setting is Japanese, the Chinese caption text may appear incorrectly. The audio works correctly in all cases. This was a known limitation with Apple QuickTime 7 when Maya 8.5 was shipped.

Workaround

Play back movies in the language for which your computer is currently set.

Installing to a path with Japanese or other multibyte characters may prevent the Maya Help from loading

If you install to Maya and the Maya docs to a path that contains Japanese or other multibyte characters, you may encounter problems loading the Maya Help, depending on your browser.

Workaround

Install the documentation to a path with no multibyte characters and use the Window > Settings/Preferences > Preferences > Help > Help Location to point Maya to the new help location using the Remote help option.

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