Release Notes for Mari 3.3v1

Release Date

24 May 2017

System Requirements

NOTE: Mari increases its level of performance with newer, more advanced hardware configurations. However, Mari is tested and capable of operating on many older, prior-generation systems. For this reason we are listing below-minimum requirements, which are recommended, and on which tests have been performed. Your particular needs may vary from that of other users.

Officially Supported Operating Systems

• Mac OS X 10.10 (Yosemite) or higher

• Windows 7 64-bit or higher

• Linux 64-bit operating system (CentOS/RHEL 6)

Minimum Hardware Requirements

• Quad-core processor

• 10+GB disk space available for caching and temporary files

• At least 4GB RAM

• Display with 1680 x 1050 pixel resolution

• An NVIDIA or AMD* graphics card with the latest drivers

• 1GB of graphics memory

• OpenGL 3.2* or higher

*Displacement preview is currently only available on the cards and drivers that support OpenGL 4.0 or newer.

Recommended System Requirements

• 2.5+Ghz Quad-core processor

• 250+GB disk space available for caching and temporary files. SSD is preferable.

• 16GB RAM with additional virtual memory*

• Display with 1920 x 1080 pixel resolution

• An NVIDIA or AMD* graphics card with the latest drivers

• 2+GB of graphics memory

• OpenGL 4.4 or higher support

*The use of virtual memory improves stability and helps prevent data loss on large projects.

'Recommended' does not guarantee that it meets your particular needs.

Tested Workstation Hardware

The configurations listed below are those that The Foundry have tested with Mari. Due to the constantly changing nature and wide variety of computer hardware available in the market, The Foundry is unable to officially certify hardware. The list below can be used as a recommendation and does not guarantee that it meets your particular needs.

Please download and install the latest graphics driver from the NVIDIA or AMD websites, and ensure that you are using 8.982.1 drivers or higher for AMD cards.

If you encounter any issues, please contact Customer Support directly through the Support Portal at the following address: https://support.foundry.com.

Tested Workstation Hardware	
Apple	• MacPro4,1 • MacPro6,1 • iMac13,2 • MacBookPro9,1 • MacBookPro10,1
HP	• HP XW6600 • HP Z600 • HP Z620 • HP Z640

Tested GPU Hardware	
AMD Prosumer Graphics Cards	• AMD Radeon HD - D500
NVIDIA Prosumer Graphics Cards	• NVIDIA Geforce GTX 660TI • NVIDIA Titan X • NVIDIA Geforce GT 650M • NVIDIA Geforce GT 675M
NVIDIA Enterprise Graphics Cards	• NVIDIA Quadro 4000 • NVIDIA Quadro K4200 • NVIDIA Quadro K5000 • NVIDIA Quadro M6000 • NVIDIA Quadro M6000 24GB

New Features

Shader Compilation

• BUG ID 246716 - Shaders now require fewer recompilations (the spinning wheel) when performing certain repeated tasks, reducing the waiting time between performing an action and viewing the final rendered shader. See **GPU** > **General** > **Shader Compilation** in the *Mari Preferences Dialog* section of the Mari Online Help.

Colorspace Export Optimization

• BUG ID 251019 - Some colorspace transformations have been introduced to allow Mari to bake the paint to disk at a faster speed. See **Data** > **Channels** > **Export Transform** in the *Mari Preferences Dialog* section of the Mari Online Help.

Lift Option in the Marquee Select Tool

• BUG ID 245977 - After performing a marquee selection, you can now lift the texture from the current paint target to the paint buffer for further manipulation. See **Marquee Select Tool** > **Lift Marquee Selection** in the *Tool Properties Palette* section of the Mari Online Help.

Optimized Texture Unit Usage

• BUG ID 246731 - Mari now combines multiple textures into one optimized unit, so that you can work on projects with a higher level of complexity, without reaching graphics capacity limits.

Baking Bake Point Nodes in the Node Graph

• BUG ID 246218 - You can now bake the Bake Point nodes that have never been baked before or are out-of-date, directly in the Node Graph by right-clicking and selecting **Edit** > **Bake Points** > **Smart Bake And Update**. You can also bake the selected Bake Point nodes using the same menu. See the *Working with Nodes* and *Node Graph Functions* sections of the Mari Online Help.

Feature Enhancements

• BUG ID 231484 - The UV View has been updated to reflect selection changes in the Node Graph.

• BUG ID 240086 - Nodes using the **Locator list** attribute were always bound to their selected locators. Now the **Locator list** attribute has its own transformation controls in case of an empty or deleted locator.

• BUG ID 240928 - The **Channel** and **Layer** palettes' icons have been improved.

• BUG ID 249581 - The environment light cache has been updated to prefix the artist's environment, so as to ensure the correct environment light cache is generated and used on the artist's machine.

• BUG ID 264159 - mGo now includes extra colorspace options for Maya.

• BUG ID 267533 - Mari now includes new channel presets for multiple workflow and shader types. For more information, see the *Shading Networks > Channels > Creating Multiple Channels from Presets* section of the Mari Online Help.

Bug Fixes

• BUG ID 113082 - Vector4f and other vector types in layer and shader nodes didn't respect the **Mari Preferences** > **Misc** > **Slider Precision** preference.

• BUG ID 169007 - After exporting a session, an unnecessary dialog displayed prompting the artist to wait for the background tasks to finish.

• BUG ID 172068 - There was no example **.xml** code for registering a custom node through the Node Graph.

• BUG ID 173722 - Palettes often opened behind other palettes, making it difficult to see where the additional palettes' tabs had appeared.

• BUG ID 175682 - In the **Channels** palette, double-clicking the layer stack button of a channel that had been created in the Node Graph, caused Mari to crash.

• BUG ID 197699 - When exporting the current channel, the colorspace did not default to the channel colorspace.

• BUG ID 198182 - In the **Node Graph** palette, right-clicking and navigating to **File** > **Export** didn't work correctly when making edits in the current **Node Graph**.

• BUG ID 198243 - In the **New Project** dialog, under **Mesh options**, loading an **.fbx** file and setting the **End Frame** value above the maximum caused Mari to crash.

• BUG ID 218236 - Closing custom widgets with the blend option and opening the **Manage Keyboard Shortcuts** dialog caused Mari to crash.

- BUG ID 224789 - Adding a PySide widget to several Mari tabs caused Mari to crash due to a PySide reference count issue.
- BUG ID 227940 - Mari recompiled shaders after unplugging a pipe from a node and before plugging it into another node.
- BUG ID 228064 - Editing the **Z Order** value of a Backdrop node was very slow and caused Mari to crash.
- BUG ID 228370 - The **Node Graph** palette's mini map lagged behind the cursor.
- BUG ID 229299 - In the Node Graph, using the AiStandard shader changed the input order when saving and exiting.
- BUG ID 229805 - In the **Lights** palette, adding more **Texture** > **Blur** to the **Environment** light produced an incorrect NdotL image cube and rendered as a solid cube.
- BUG ID 231481 - The patch resolution display did not update when selecting and manipulating nodes in the Node Graph.
- BUG ID 234201 - Editing the **Blending** property in Merge nodes didn't show the spinning wheel in the Viewer and made Mari become unresponsive.
- BUG ID 234745 - Mari filled logs with unnecessary `Failed to disconnect` messages.
- BUG ID 235424 - Baking did not project paint on some parts of the object when the object was shifted by the **Zoom Paint Buffer** tool.
- BUG ID 241006 - Mari became unresponsive on start-up when strict parsing was enabled in the OCIO config file specified through the OCIO environment variable.
- BUG ID 241667 - Opening an **.abc** file with Ptex caused Mari to crash.
- BUG ID 241774 - Nodes returned an incorrect **proceduralType** value as they were not being upgraded correctly when ran in terminal mode.
- BUG ID 243388 - The **Paint Through** tool produced a lower quality result when painting compared to stamping.
- BUG ID 243473 - Objects in Ptex projects became unpaintable if the project had previously been closed without saving.
- BUG ID 245661 - The lights setup was incorrect after importing certain sessions. Mari didn't have an option to export the default cameras: Ortho, Perspective, and UV.
- BUG ID 246081 - Importing, closing, and re-opening a session caused Mari to crash.
- BUG ID 246631 - Loading objects with no UV didn't switch to Ptex and caused Mari to crash eventually.
- BUG ID 247028 - Changing the colorspace in the color picker with certain OCIO config files sometimes caused Mari to crash.
- BUG ID 247381 - Loading a session containing any node from the Extension Pack, or adding a procedural node from the Extension Pack, caused Mari to crash.
- BUG ID 247387 - Importing session scripts failed with old archives when trying to load internal Mari data types.
- BUG ID 247407 - Group nodes were incorrectly parsed and, as a result, rendered incorrectly.
- BUG ID 248385 - Copying and pasting patches didn't copy across the colorspace configuration and rendered incorrectly.
- BUG ID 248505 - Attaching lights to the camera caused the colors displayed in the Viewer to be permanently blown out.

- BUG ID 248693 - When creating a 16/32-bit floating-point channel, the output colorspace default value was set to **sRGB**, rather than **linear**.
- BUG ID 249776 - Closing the **Colors** palette's floating tabs caused Mari to crash.
- BUG ID 251073 - When converting to a later version of Mari, the environment light did not render correctly due to missing colorspace information from a previous version.
- BUG ID 252397 - Mari required that the **active_displays** and **active_views** fields be present in all OCIO configs. This conflicted with the OCIO syntax rules, which state that they should be optional.
- BUG ID 252771 - Channel masks did not evaluate the layer used as a mask.
- BUG ID 265806 - **Execute** mode (**-x**) did not block the UI dialog boxes.
- BUG ID 266158 - Loading gizmos caused Mari to crash.
- BUG ID 266160 - Gizmos were loading very slowly and related changes within the gizmos triggered redundant parsing of the Node Graph, causing Mari to slow down considerably.
- BUG ID 266407 - Switching the OCIO Config file resulted in invalid colorspaces if the colorspace wasn't part of the new OCIO Config file.
- BUG ID 269008 - Exporting channels in Mari 3.2v1 failed when the **Layers** palette was hidden.
- BUG ID 270008 - The **Edge Mask** default values, **Falloff End** and **Falloff Start**, were set to **0.0**, making it impossible to see the effect after enabling it.

Known Issues and Workarounds

Mari Tools

- BUG ID 13640 - The **Blur** tool can be slow to use on the initial stroke.
  Wait for Mari to process the blur before applying a second stroke.
- BUG ID 13394 - Using the **Select Items** tool with the **Facing** set to **Front** to select and hide a portion of faces causes some of the faces within the selection to remain visible when zoomed in.
  To catch all selected faces, either:
    - select **Facing > Through** instead of **Front**, or
    - zoom in closer to the object.

Shaders

- BUG ID 34729 - Mari displays a rendering error on the canvas when it is unable to create a shader. More information has been included to help you determine the cause of the error. Some solutions might be to hide groups and layers, or to cache parts of your layer stack until a shader can be created.
- BUG ID 34679 - On extremely large projects, issues can arise with shader limits, and reaching the maximum allowed texture slots available. To avoid reaching these shader limits on large projects, try the following workarounds:
    - hide groups and layers, or

• cache groups and layers.

Layers

• BUG ID 34690 - Flattening or caching layers or channels on complex projects may cause Windows to reset the graphics driver due to the long processing time. To work around this issue, you can try to flatten or cache fewer layers at a time, or reduce the value of the **Max Render Size For Baking** setting. This setting can be found under **Preferences** > **GPU** > **Baking and Projection**.

  Reducing this size breaks the flattening or caching operation up into smaller pieces, which individually take less time to calculate, and thereby avoids a Windows graphics driver reset.

• BUG ID 26460 - Painting a mask in a Mask Layer Group sometimes results in unexpected paint results. To prevent this from happening, either:

  • Use a white "color" layer at the bottom of your mask stack. Any layer used over this initial "color" layer should then be fine, or

  • If you want to create a mask in a Mask Layer Group, simply add another layer on your Mask Layer Group instead, and paint white into it to create a mask.

Importing and Exporting

• BUG ID 51655 - Mari becomes unresponsive when attempting to export Ptex textures.

• BUG ID 50886 - Session Scripts: Imported shaders don't have channels assigned.

• BUG ID 49131 - High polygon **.obj** files, exported using the OBJ Exporter plug-in, cannot be read back in to Mari.

• BUG ID 29386 - When using the **Export for Maya** script, Maya's viewport may incorrectly show some patches as transparent. This can be resolved by selecting **High Quality Rendering** or **Viewport 2.0** from the Renderer menu within Maya.

• BUG ID 16324 - Windows only: You cannot currently import an image into a channel using a relative file path. To work around this, use an absolute path when importing images.

• BUG ID 14985 - There may be a slight pause after importing textures when creating new projects, while Mari saves the project.

Nuke<>Mari Bridge

• BUG ID 23010 - Nuke<>Mari Bridge: If Mari crashes when receiving incoming components from Nuke when the **Virtual Texture Type** is set to **Float**, lower the **Virtual Texture Size** to a value below 8192x8192.

• BUG ID 19780 - Nuke<>Mari Bridge: A projector created in **Ortho** view in Mari does not re-project correctly in Nuke.

Ptex

• BUG ID 17626 - It can take a long time to import very large or very high polygon count Ptex models.

The workaround is to assign a small uniform face size (1x1 or 2x2) on import, and then increase the resolution of the relevant bits of the model as necessary after loading.

• BUG ID 17618 - Ptex does not bake properly if the resolution of the face is too small.

The workaround is to increase the resolution of the selected faces you are having problems with.

Graphics Cards

• BUG ID 217864 - Mac OS X only: AMD D500 and D700 graphics cards, found on modern Mac Pro's, are physically limited to 16 Texture Mapping Units, which can block operations such as multiple procedural layers.

• BUG ID 207913 - Mari may crash, or operate with lower than expected performance, when using recent graphics drivers with some AMD cards.

There have been reports that Plays.tv and Raptr, which come bundled with the AMD FirePro drivers, can cause instability in Mari. If you are experiencing instability, please try uninstalling these applications.

• BUG ID 18457 - Using NVIDIA graphics cards from the Fermi series with drivers older than version 270 results in various rendering issues when the **Virtual Texture Type** is set to **Half** or **Float**.

To resolve this, please download and install the latest graphics driver for your card from the NVIDIA website.

• BUG ID 12567 - Enabling **Sync to VBlank** in NVIDIA settings can drastically reduce Mari's performance. If you experience very slow interaction, even with low-polygon models, on one of the Tested Workstation Hardware, navigate to:

  • Linux: **NVIDIA X Server Settings > X Screen 0 > OpenGL Settings** and turn off **Sync to VBlank**.
  • Windows: **NVIDIA Control Panel > 3D Settings > Manage 3DSettings > Vertical Sync > Force off**

Then, restart Mari.

Node Graph

• BUG ID 168753 - AIStandard nodes created in Mari3.0v1 are not compatible with Mari 3.0v2, or later.

As a workaround, remove the old AIStandard nodes and recreate them in Mari 3.0v2, or later.

• BUG ID 51462 - Creating a shader and attempting to view it in the **Node Graph** palette gives the impression that the DiffuseColor input edge is missing from the shader node. The input is present, but is incorrectly hidden. This is related to bug 51263 below.

• BUG ID 51452 - When importing a gizmo, the nodes in the gizmo do not retain their organization if they were created using the item name in the menu.

• BUG ID 51263 - It is not currently possible to attach the Viewer node to standard Mari shaders, because they are hidden.

As a workaround, you can click the **View the current channel** button above the Node Graph.

• BUG ID 51247 - Channel transfer doesn't transfer Graph Layers as expected.

• BUG ID 51082 - The Ambient Occlusion node's properties don't include a **generate AO** option.

• BUG ID 48790 - **Autoplace** does not respect Backdrop nodes.

Miscellaneous

- BUG ID 226265 - Gray areas appear when changing the **Virtual Texture Depth**.

- BUG ID 221920 - When copying channels between objects, a warning message can pop up stating the requested channel cannot be created. However, clicking **OK** to this message usually results in the channel copying successfully, regardless.

- BUG ID 194832 - Bake times were significantly increased when baking into channels containing non-linear data.

- BUG ID 177430 - Mari occasionally crashes on startup during the initialization of Python.

- BUG ID 167883/51934 - When a project that contains a Tiled procedural is upgraded from 2.6 to 3.0, the frame rate drops drastically.

- BUG ID 129292/51771 - Removing, changing, or hiding subdivided objects takes a long time.

   To avoid this, replace the image in the Tiled procedural once the project has been upgraded.

- BUG ID 99115/46223 - The **Sponge Desaturate** mode does not work through the full dynamic range as it uses HSL for desaturation. HSL cannot be used with HDR because HSL works well only in LDR values.

- BUG ID 51370 - Heavier projects are initially slower to render when colorspace is enabled.

- BUG ID 51322 - Modo Render: The preview occasionally fails to update fully.

- BUG ID 51273 - Mac OS X 10.10 and above: Rendering is occasionally incorrect when using multiple lights.

- BUG ID 51199 - The AiStandard, RedshiftArchitectural, and VRayMtl shaders are not connected to the Current Channel automatically.

- BUG ID 51185 - PythonAPI: Mari's Paint node does not appear in **typeList()**.

   To add a Paint node Pythonically, call:

```
ng = mari.geo.current().nodeGraph()
ng.createPaintNode(width, height, bitDepth)
```

- BUG ID 51084 - Animated objects can take a long time to subdivide.

- BUG ID 50830 - The **Objects** palette lock doesn't prevent objects from being transformed.

- BUG ID 50548 - Modo Render: Only camera moves are respected by live update.

- BUG ID 50520 - Although faces with degenerate UVs can be loaded into Mari, they can cause issues in some cases. They do not occupy any space in UV, so it's impossible to properly paint on such faces. There is also the risk that some shaders may show undesirable lighting effects on faces with degenerate UVs.

- BUG ID 50149 - Texture transfer does not take object transformation into account.

- BUG ID 50898 - Existing subdivision calculations are lost when recalculating, even if recalculation fails.

- BUG ID 49557 - Shadows and colors can appear incorrect after subdividing geometry.

- BUG ID 47180 - Mac OS X 10.10 and above: Resizing palettes is restricted to a certain width or height per drag action.

- BUG ID 46600 - Ambient Occlusion must be updated after any OpenSubdiv calculation.

- BUG ID 43020 - Mac OS X with retina screens only: When a hidden menu is unfurled over the canvas, the canvas zooms in dramatically.

- BUG ID 41573 - Windows 8 only: The Windows key (Meta key) does not disengage when used in conjunction with a Wacom pen.

  To successfully disengage, you need to press the Windows key again over the desktop, which rectifies the problem.

- BUG ID 37140 - Mac OS X only: By default, when you first install Mac OS 10.8 or higher, the security preferences are set so that any applications not downloaded from the Apple App Store can't be installed.
  To ensure that Mari installs correctly, navigate to **System Preferences** > **Security & Privacy** on your Mac and select **Anywhere** for the **Allow applications download from** field.

- BUG ID 33293 - Linux: Launching Mari with the language set to one without certain character symbols resulted in Mari failing with an error that the specified transform could not be loaded.

  To work around this, set the locale (language) to English.

- BUG ID 31946 - Sometimes paint is not baked because of memory management issues on the graphics card. This can be due to issues such as a high resolution paint buffer, a high bit-depth paint buffer, large virtual texture size, or even a large scale value on the paint buffer transform. These issues can usually be identified by **glError: 0x505 out of memory** messages in the log.

  Try reducing any or all of these values to prevent it happening. Graphics drivers are continually improving, so it's also worth checking whether upgrading your drivers resolves the problem.

- BUG ID 20510 - If you find that the startup time for Mari is longer than usual, please check that the LIC files in your RLM licensing data folder do not refer to obsolete server ports. If they do, place them in another directory and restart Mari.

- BUG ID 20021 - Textures in the canvas intermittently switch between lower and higher resolutions.

  This issue is more likely to occur if your virtual texture resolution is low, and you're working on a complex model with displacement. Possible workarounds include increasing your virtual texture size, reducing the number of channels Mari has to access at once (for example, by reducing the number of channels required for the current shader), to reduce the patch resolution of patches in the channels used in the shader, or to use a smaller canvas window or monitor.

- BUG ID 14201 - Linux only: Mari becomes unresponsive after the system is woken from sleep.

- BUG ID 13700 - Adjusting the **Camera > Perspective** settings for a **Projector** is not reflected on the canvas until the **Projector** is made Current.

- BUG ID 13571 - Launching a new version of Mari for the first time, when a config file exists from a previous version, sometimes results in an object not appearing in the **Ortho** view.

  To solve this, close Mari, delete the following config file and relaunch Mari:

    - Linux: **~/.config/TheFoundry/Mari.conf**
    - Windows: **C:/Users/<login>/.mari/TheFoundry/Mari.ini**

- BUG ID 13294 - Windows: Mari sometimes crashes when trying to load data on large projects due to the program exhausting all window manager objects.

  To reconfigure the user object limit:

    - Open regedit and navigate to **HKEY_LOCAL_ MACHINE\SOFTWARE\Microsoft\Windows\NT\CurrentVersion\Windows**, and
    - Edit **USERProcessHandleQuota** to a larger number.
  If this number gets too large, you may also have to modify **GDIProcessHandleQuota.**

- BUG ID 12102 - Current brush settings do not get saved as part of the project. Instead, Mari reverts to the default settings when you close and relaunch it.
- BUG ID 11874 - Mari doesn't recognize 3-digit padded **.obj** sequences as animation.
- BUG ID 118830 - It is sometimes difficult to resize undocked palettes on OS X operating systems due to a bug in Qt.

Developer Notes

These are the changes relevant to developers.

New Features

- BUG ID 243550 - There were many unnecessary PythonQt references in the Python code and the API documentation.
- BUG ID 243550 - Mari's Python API now returns a list of compression methods and the default compression method for a given file extension.

Feature Enhancements

- BUG ID 107665 - Mari now includes the following Python API functions to query the status of background running jobs:
    - `Application.isBackgroundJobFinished(`
    - `Application.backgroundJobIDs()`
    - `Application.backgroundJobCaption()`
- BUG ID 264752 - Mari log now includes a line to explain the required **Max Render Sizefor Baking** when a bake operation fails, for example:

```
Debug : [ MriShaderBakeRenderOp.cpp:568 ] : Bake limited by 'Max Render Size for
Baking' preference. Currently '256 x 256', required '1024 x 1024'
```

Bug Fixes

- BUG ID 238929 - Exporting session scripts filled the Python console with unnecessary messages.
- BUG ID 248067 - Importing a session exported from Mari 3.1 caused a colorspace error in the Python console.
- BUG ID 249937 - The list of Python OpenEXR compression options was not documented.
- BUG ID 264638 - Mirroring geometry through the Python API caused Mari to crash.
- BUG ID 270024 - Using the **ProjectInfo.isNull()** Python function caused Mari to crash.
- BUG ID 271794 - In the Python console, creating a `mari.Matrix()` caused Mari to crash.
- BUG ID 272563 - The mari.Image.ENABLE_FULL_PATCH_BLEED and mari.Image.BACKGROUND_EXPORT functions could not be used sequentially.

• BUG ID 273617 - In the **Node Graph** palette, the following **Edit** > **Bake Points** context menu items have been renamed to:

Original name	Updated name
Update Selected Bake Points	Update Selected
Update Downstream Bake Points	Update Downstream
Bake Empty and Update Out-Of-Date Bake Points	Smart Bake And Update
Bake Selected Bake Points	Bake Selected

The Python functions have also been changed to match the new names, please make sure to update your scripts .