

Release Notes for Mari 3.2v1

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Release Date

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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 10.9.5 (Mavericks) 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://supportportal.thefoundry.co.uk>.

Tested Workstation Hardware	
Apple	<ul style="list-style-type: none"> • MacPro4,1 • MacPro6,1 • iMac13,2 • MacBookPro9,1 • MacBookPro10,1
HP	<ul style="list-style-type: none"> • HP XW6600 • HP Z600 • HP Z620 • HP Z640

Tested GPU Hardware	
AMD Prosumer Graphics Cards	<ul style="list-style-type: none"> • AMD Radeon HD - D500
NVIDIA Prosumer Graphics Cards	<ul style="list-style-type: none"> • NVIDIA Geforce GTX 660TI • NVIDIA Titan X • NVIDIA Geforce GT 650M • NVIDIA Geforce GT 675M
NVIDIA Enterprise Graphics Cards	<ul style="list-style-type: none"> • NVIDIA Quadro 4000 • NVIDIA Quadro K4200 • NVIDIA Quadro K5000 • NVIDIA Quadro M6000 • NVIDIA Quadro M6000 24GB

New Features

Node Graph

To improve the usability of the Node Graph, Mari now includes a left-to-right navigation also called **Show Port List**, zoom LOD (Level of Detail), Node Graph-specific configurable shortcuts, and more.

Bake Point Node

Mari now includes a Bake Point node that allows you to create a special node in the Node Graph to bake upstream results into textures. The Bake Point node keeps track of any update upstream to indicate whether the baked result is out of date. The Bake Point node also allows you to set options for the baked result and export the textures to a location of your choice.

OpenEXR 2.2

Mari now supports OpenEXR 2.2.

Session Scripts

Mari Session Scripts now allow you to save and load the Node Graph, Graph layers, and a greater amount of your Mari project features.

Smart Selection - Connectedness Mesh Smart Type

Mari now includes a new **Smart Type** mode for Smart Selection. The **Connectedness Mesh Smart Type** allows you to select faces connected in the 3D view.

Colorspace Management

It is now possible to switch off color management in a project using the **MARI_FORCE_COLOR_MANAGEMENT** environment variable or through the **Project Settings** dialog.

Uniform Scaling

Mari locators now support uniform scaling

Invert Visibility

You can now invert the visibility of objects, patches, and faces.

Feature Enhancements

- BUG ID 169840 - The Node Graph's pipes, connecting two nodes, have been improved to maximize the space between the nodes, and to be easily selected and manipulated.
- BUG ID 177430 - Mari now supports PySide 1.2.2.
- BUG ID 229700 - The **Add Image Set** dialog, which is used when creating a Paint node or a Bake Point node, has been renamed to **Add Paint Node** and **Add Bake Point** for clarity.
- BUG ID 229783 - Mari now includes two options to export Channel nodes from the Node Graph: **Export All Channel Nodes Flattened** and **Export Selected Channel Nodes Flattened**.
- BUG ID 231340 - Mari now includes **\$NODE** in the tooltip of the **Template** field of the Export and Import dialogs.
- BUG ID 232070 - Autosaving the project now occurs prior to rendering a turntable.

Bug Fixes

- BUG ID 86137 - Left click remained depressed after having double-clicked on an object in Face Selection mode.
- BUG ID 128788 - Creating and renaming Group node knobs failed when adding spaces in the name.
- BUG ID 166751 - Copying and pasting Paint nodes failed when the original Paint nodes were deleted in the meantime.

- BUG ID 167672/51926 - Mac OS X only: Changing the resolution of a Paint node, in some cases, caused Mari to crash.
- BUG ID 170924 - Mari often prompted to convert a project created in the same version as the one being used to open it.
- BUG ID 171748 - In a Group node, exposing nodes' properties of the same name, resulted in the properties being linked under the same knob.
- BUG ID 197205 - It was not possible to connect a Viewer node to an Output node.
- BUG ID 197757 - Mac OS X only: Mari's color picker failed to pick the correct color value on certain monitor setups, such as Retina displays.
- BUG ID 196956 - On Mac OS X only: Painting strokes and resizing the application's window caused Mari to crash.
- BUG ID 198328 - Tiled procedurals turned black when multiple copies of the same image were loaded in the **Image Manager** palette.
- BUG ID 198541 - Modo render failed to preview or render with Modo 10.0 when using an environment light.
- BUG ID 201639 - Rendering a node using the Viewer node in the root Node graph did not work when a node had been previously rendered in a Group node.
- BUG ID 207425 - Previously selected nodes weren't unselected before a new node was added, which led to problems when arranging the Node Graph.
- BUG ID 207427 - Creating nodes using the **Tab** key outside of the **Node Graph** palette resulted in creating nodes at the cursor position outside of the **Node Graph** palette.
- BUG ID 207914 - The StickyNote node didn't allow multiple spaces in the **Label** field.
- BUG ID 208291 - Grouping Merge nodes in the Node Graph automatically created corresponding Input nodes for each of the Merge nodes within the Group.
- BUG ID 208367 - The StickyNote node showed non-editable text font in the **Label** field when formatted text was pasted into it. The text font in the **Label** field didn't match the font shown in the Node Graph.
- BUG ID 208812 - In the **Node Properties** palette, clicking the **p** button in a Group node pane collapsed and expanded the pane alternately.
- BUG ID 215049 - It was difficult to drag a Backdrop node after zooming out in the Node Graph.
- BUG ID 216275 - Session scripts did not work with values of type **Long**.
- BUG ID 216754 - The Node Graph's pipes, marked as hidden in their **.xml** files, were still visible.
- BUG ID 217866 - The shortcuts for the Foreground and Background color picker did not work.
- BUG ID 218222 - Mac OS X only: Mari sometimes failed to export channels flattened and merged layers.
- BUG ID 218396 - The colorspace toolbar did not respect the active displays and views listed in the OCIO configuration file.
- BUG ID 218728 - The **Slerp** tool affected the entire image in the paint buffer rather than just the area where the paint stroke had been made.
- BUG ID 219458 - A node's enabled state wasn't properly propagated down the Node Graph's tree when there were subsequent disabled nodes on the path.
- BUG ID 224638 - Rendering a turntable caused Mari to crash.

- BUG ID 225016 - It was not possible to use proxy image formats when loading images using the **MARI_IMAGE_MANAGER_ENVIRONMENTDIRECTORIES** environment variable.
- BUG ID 225514 - Importing nodes within a Backdrop node changed the position of the nodes.
- BUG ID 226081 - The Online Help option failed when a network connection was not found.
- BUG ID 226448 - Paint nodes were disconnected from the input port after being exported and re-imported to the Node Graph.
- BUG ID 227325 - Previewing high-resolution images, depending on the format, took a very long time to load, making it seem like Mari had become unresponsive.
- BUG ID 229130 - In some circumstances Mari corrupted its image data when baking, causing the application to crash.
- BUG ID 229784 - MacPro6,1 only: The environment light caused rendering errors on objects' specular channels.
- BUG ID 230252 - When adding a custom shader through the **Shaders** Palette, such as **AiStandard**, the node added in the Node Graph didn't use the proper input names and positions.
- BUG ID 231099 - Typing the **.hdr** file extension in the **Template** field of the **Export All** dialog resulted in log spamming.
- BUG ID 231101 - Mari listed **.hdri** as a supported file format when it was not. HDRI has now been removed from the list of supported files.
- BUG ID 231932 - A freshly-loaded project was always marked as modified.
- BUG ID 232042 - Applying filter changes did not mark the project as modified.
- BUG ID 232054 - Mari did not mark the project as modified when the visibility or the locked state of an object had been toggled.
- BUG ID 232057 - Saving a projector was incorrectly triggering an autosave.
- BUG ID 232267 - Setting up multiple caches through the **CacheLocations** configuration file did not work.
- BUG ID 232297 - The **Export Current Channel Flattened** option failed when the nodes the Channel node was connected to weren't formatted like layers.
- BUG ID 232441 - Pasting a license key caused Mari to crash.
- BUG ID 232737 - Double-clicking on a node did not bring the **Node Properties** palette to the foreground.
- BUG ID 233542 - Texture transfer crashed when the system failed to render geometry information.
- BUG ID 234194 - When applying the **Filters > Levels**, the result turned out different to the preview.
- BUG ID 234326 - Mari failed to start up when certain OCIO configuration files were specified through the OCIO environment variable.
- BUG ID 235323 - Gizmo knobs of different types could be linked when they should not have been.
- BUG ID 235426 - New nodes overlapped existing nodes upon creation.
- BUG ID 235431 - Moving multiple nodes at once did not create the correct undo record and undoing the action resulted in an undefined action.
- BUG ID 239103 - Exporting through **Export Current Channel Flattened** using a channel node, imported from another project with smaller number of UV patches, did not export all UV patches.
- BUG ID 240960 - Mari crashed when saving certain projects.

- BUG ID 240961 - Mac OS X only: Mac OS X only: Mari failed to open the Colorspace toolbar's OCIO configuration file when its corresponding path originated from Windows and contained backslashes.
- BUG ID 241303 - Mari crashed when grouping nodes that resulted in a graph cyclic dependency.
- BUG ID 243458 - Mari crashed when performing any 3D-based filter operation, such as **Gaussian Blur**.
- BUG ID 243567 - The **Mask Data** options, in the **Add Bake Point** and **Add Paint Node** dialogs, were redundant.
- BUG ID 244719 - It was very easy to create new channels in the wrong colorspace as the previous settings were saved and restored when a new channel was created. The colorspace group was collapsed by default and unless settings were expanded, it was hard to see that they weren't the default.
- BUG ID 245874 - The **Enabled** option in **Preferences > Color > Color Management Defaults** has been deprecated as it has been replaced by the **Color Management Enabled** option.
- BUG ID 245891 - Previewing images in the **Image Manager** palette, which are **16K x 16K** or above, sometimes caused Mari to crash.
- BUG ID 246041 - Selecting a selection set caused Mari to crash.
- BUG ID 246186 - Mari did not save the Paint node's **Scalar Data** state.
- BUG ID 246850 - The viewer transform was being automatically turned off when a scalar Paint node, set as a mask input, was set as the active paint target.
It is still possible to manually reproduce this behavior, if required, by turning off the color management in the **Color Management** toolbar.

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 49634 - Session Scripts: Not all features new to Mari 3.0 are supported by session scripts.
- 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 208632 - Mac OS X only: Mari now allocates an additional Texture Mapping Unit to improve performance.
- BUG ID 194832 - Bake times were significantly increased when baking into channels containing non-linear data.
- 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 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 **GDIPProcessHandleQuota**.

- 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 232658 - Python API: You can now link callbacks to the autosave actions.
- BUG ID 233430 - It is now possible, through the Python API, to print the state of a node in the project, as well as its template to distinguish if there is any change between them that requires upgrading.

Feature Enhancements

- BUG ID 228798 - The existing Python examples now check for a valid project before running. They have also been updated to be more verbose, both to the Python console and the log.
- BUG ID 232242 - The changed nodes are now printed to the log when auto-upgrading projects. It is also possible to print the changed nodes using the Python API.
- BUG ID 232657 - The Node Python API now uses the functions **name** and **setName** instead of their now-deprecated counterparts **nodeName** and **setNodeName**.
- BUG ID 233048 - You can now cut nodes in the Node Graph using the **Ctrl/Cmd+X** keyboard shortcut.
- BUG ID 241905 - The C API Image Reader now allows plug-ins to determine and return the image data format of a custom file format.

Bug Fixes

- BUG ID 227323 - The various Python callback functions were not called correctly during a session script export.
- BUG ID 229787 - The mGo Maya script included the PySide module, even though it was not used.
- BUG ID 234495 - Adding an **.xml** node to the Node Graph using Python caused Mari to crash.
- BUG ID 239270 - Mari introduced corruption in textures imported through the C API.