

Release Notes for Modo14.2v1

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Release Date

12 November 2020

System Requirements

Officially Supported Operating Systems

- macOS 10.13.x, 10.14.x, and 10.15.x (64-bit only)
- Windows 10 (64-bit only)
- Linux 64-bit operating system (CentOS/RHEL 7.6+)

Minimum Hardware Requirements

- Intel processor(s), Core i3 or higher
- 1 GB available hard disk space (for Modo installation).
- 6 GB available hard disk space (for full content).
- At least 4 GB RAM
- Display with 1920 x 1080 pixel resolution
- Internet connection for product activation and online videos access
- The **Advanced** viewport mode requires an NVIDIA or AMD graphics card with at least 1 GB of graphics memory and drivers that support OpenGL 3.2 or higher.

Recommended System Requirements



Note: This information is our best recommendation for the average user. Requirements vary by usage, and individual users may have different requirements from those listed here.

- 2.5+ GHz quad-core processor
- 250+ GB disk space available for caching and temporary files, SSD is preferable
- 16 GB 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 Graphics Driver Versions

- NVIDIA: 435 or later*
- AMD: 8.982.8.1 or later*

*We recommend downloading the latest driver version from the NVIDIA or AMD websites

Tested Workstation Hardware

The configurations listed below are those that Foundry have tested with Modo 13.0v1. Due to the constantly changing nature and wide variety of computer hardware available in the market, 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.

If you encounter any issues, please visit the Support Portal at <https://support.foundry.com>.

Tested Workstation Hardware	
Apple	<ul style="list-style-type: none"> • MacBook Pro (Retina, 15-inch, Mid-2015) • iMac (Late 2012) • Mac Pro (Late 2013)

Tested Workstation Hardware	
	<ul style="list-style-type: none"> • MacBook Pro (Mid-2015)
Dell	<ul style="list-style-type: none"> • XPS 15 9560 • Precision 3520
HP	<ul style="list-style-type: none"> • HP Z800 • HP Z640 • HP Z600
CPU	<ul style="list-style-type: none"> • AMD Ryzen Threadripper • Intel i7-4770k • Intel i7-7700k • Intel i7-8700 • Xeon E3-1505M v6 • Xeon E5504 • Xeon 5620

Tested GPU Hardware	
AMD Prosumer Graphics Cards	<ul style="list-style-type: none"> • Radeon™ Vega RX • Radeon™ R9 M370X • Radeon™ Pro WX8200 • Radeon™ Pro WX7100
AMD Enterprise Graphics Cards	<ul style="list-style-type: none"> • FirePro™ D700
NVIDIA Prosumer Graphics Cards	<ul style="list-style-type: none"> • GeForce 675MX • GeForce 970 • GeForce 1050 (laptop) • GeForce GTX 1070 Ti (Linux) • GeForce 1080
NVIDIA Enterprise Graphics Cards	<ul style="list-style-type: none"> • Quadro® K620 • Quadro® M620 • Quadro® M4000

New Features

Rendering

mPath Cryptomatte

Modo now supports the rendering of Cryptomatte outputs, which can be used to mask out matte surfaces in your compositing pipelines. Cryptomatte render outputs can be added to your scene in the Shader Tree, and saved as 32-bit OpenEXR files. Materials in your scene can then be identified as Cryptomatte matte surfaces by adding an LPE Label to materials in the Shader Tree.

mPath Stencil Mapping

The mPath renderer now supports stencil mapping.

mPath Render Pause

A pause feature has been added to mPath, which stops the current render at the end of the current iteration. Press **P** in the render window to pause the render.

PBR Loader Enhancements

The PBR Loader has had several enhancements added:

- Ability to add custom definitions, set to any effect in the Shader Tree,
- support for packed maps,
- new options to invert the layer,
- new options to set the Colorspace to None for all definitions,
- new options to change the blend mode on a layer.

Rigging and Animation

Rig Clay

Command regions have been extended to support mouse gesture inputs and a nodal setup in the Schematic Viewport. Add a **Command Region Gesture** node to your Schematic Viewport, which takes a command region as an input, and a channel as an output. You can use left, right, and middle mouse button click and drag actions to drive channels.

Command regions created in earlier versions of Modo continue to work and can still be created in the same way. This workflow is useful for more simple applications that do not require the additional flexibility provided by the new nodal system.

Command regions can also now be assigned to mesh edges and vertices as well as polygons.

Particle Item Maps

A new type of particle map has been added, allowing mesh particle sources to define which input item a replicator creates at a given vertex. This feature was introduced to support USD instancing.

File I/O

USD Exporter

Modo now supports the export of Pixar's Universal Scene Description (**.usd**) files.

Advanced Real Time Viewport

AVP HDR Monitor Support

The AVP viewport defaults to use HDR/XDR monitor modes on supported hardware and MacOS versions. When using MacOS 10.15 or higher with an XDR monitor or capable iMac or Macbook, the image intensity can go into the HDR ranges.

Direct Modeling

Chamfer Edit

The new Chamfer Edit tool can be used to modify beveled or chamfered faces after a chamfer or bevel operation. The tool can increase the number of segments on the rounded edge, and change the width of selected beveled faces. The Chamfer Edit tool is available as a direct modeling tool and a procedural modeling operation.

Edge Chamfer Sharp Corner

Sharp Corner is a new option compatible with the Edge Chamfer tool. This option was previously only compatible with the Edge Bevel tool.

Edge Chamfer Mitering Offset

Mitering Offset is a new option that creates extra co-planar polygons beside the outer edges of a chamfer to smooth out artifacts on connecting polygons.

Vertex Index Reordering

In order to fix mesh deformation issues with morph influences, two new tools have been added to the **Vertex** tab to reorder the index order on your current vertices:

- **Reorder Index** - assigns the selected vertices a new index order based on the **Mode** you choose. This allows you to repair specific vertices on meshes for deformation purposes, or repair game assets that require a strict index order.
- **Sync Vertex Order** - matches the vertex index order of one mesh to another mesh based on the polygons you have selected. You can use this option to fix mismatches in vertex index order between two meshes when you are creating a morph map between the two meshes.

Negative Offset for Background Constraint

The Background Constraint tool allows you to constrain clicking points along the normal direction of the surface with a given **Offset** amount. When Negative Offset is enabled, clicking points constrains along the reverse normal direction of the surface.

Insert Option for Bezier Tool

Insert mode has been added to the Bezier tool. This new mode inserts a control point at the click position on the closest bezier curve segment regardless of the current control point. Add mode adds a new point next to the currently selected control point.

Procedural Modeling

Procedural Vertex Map MeshOps

A series of new procedural vertex map operations have been added to Modo to modify your existing weight maps, including Flood Weight, Grow Weight, Jitter Weight, and Remap Weight.

Keep Vertices Option for Procedural Delete Edge

The Delete mesh operation has a new **Keep Vertices** option for the **Edge** selection type. When enabled, the vertices on the selected edge are retained after the edge is deleted.

3D Viewport Workflow

Shading Menu Enhancements

Several enhancements have been added to the 3D viewport options menu:

- Inactive mesh settings - when **Alt** is held down, the options menu at the top of the viewport allows you to activate settings for inactive meshes.
- Common viewport options - the options menu has been updated to include several common options that can easily be enabled and disabled, including **Show Grid**, **Show Wireframe in Item Mode**, **Smoothing**, and **Show Backdrop**.
- Form presets - the viewport options now operate as form presets, which mean they can be enabled and disabled like a toggle.

UV

Real Material Scale for UV Maps

Real world sizes are now supported in UV maps. You can specify a real world size for your selected UV map by clicking the **Real World Size** option at the top of the UV Viewport.

Real Material Scale for AxF Materials

When AxF material textures are imported, the real world size of the texture is assigned to the **Size X** and **Y** properties in the **Texture Locator** tab. The **Real World Size** option is now available for all texture locators when the selected UV map has a real world size assigned.

Keep Island Scale when Packing UVs

The **Keep Island** option has been added to the UV Pack tool. When enabled, the original size of the UV islands is retained.

UI

Solo Command for Item List, Shader Tree, and Groups List

The Solo command and button has been added to Modo 14.2v1 which allows users to hide all items in the list except the clicked item.

Holding **Ctrl** and clicking on a parent item makes that item and its children visible, and hides everything else. When an item is in solo mode, holding **Shift** and clicking another item in the list adds that item to the solo mode.

Bug Fixes

- BUG ID 455126: The wrong polygons were shown when selecting islands.
- BUG ID 455095: A crash occurred when double-clicking hair poly lines.
- BUG ID 453999 (60864): A crash which occurred when clicking the form editor **Find Form** option.
- BUG ID 454885 (60873): Form presets on user channels vtab divider caused a crash.

- BUG ID 454009 (60866): Artists were unable to select a node and press **H** to disable the node links in the Schematic Viewport.
- BUG ID 454014 (60871): Artists were unable to disable links using elbows in the Schematic Viewport.
- BUG ID 454890 (60876): Several errors appeared when saving form presets for all tabs on a mesh.
- BUG ID 454891 (60877): Fixed an issue where saving form presets for an item renamed the next item the artist loaded the preset on.
- BUG ID 456431: Artists were unable to see UV selections with multiple meshes.
- BUG ID 450051: Fixed an issue where switching to subdivision displays Polygon Selection incorrectly in the UV viewport.
- BUG ID 456589: Polygon Slice tool caused Modo to crash when the artist sliced with multiple meshes active.
- BUG ID 456675 (60898): Fixed an issue where selecting locator items with the Transform tool active did not function.
- BUG ID 456400: Transparency overrides were overriding item selection colors.
- BUG ID 457399: UV Selections were incorrect if the artist had Deformers disabled.
- BUG ID 454896 (60879): Loading form presets did not always refresh the form.
- BUG ID 457435 (60903): Holding **Alt** and clicking an item would not function when selected items were inside a group locator.
- BUG ID 457708 (60907): Holding **Alt** and clicking an item caused Modo to crash.
- BUG ID 453865: Fixed a crash when using the Preview render.
- BUG ID 457802: Fixed a crash when enabling Render Output Masking.

Known Issues

This section covers some known issues and gives workarounds for them, where appropriate.

Animation

- ID 240321 (53661) - Selecting actions does not always select the correct one. This is caused by copying actions.



Note: As a workaround, manually edit the tags on the broken actions by selecting them in the Groups tab, then save and reload the scene.

- ID 395357 - Deformer Caching doesn't work.
- ID 423909 - Grease Pencil - Setting image type to JPG results in a black fill over the screen.

Assemblies

- ID 288164 (36452) - Assemblies exported from the Item List context menu result in poor visual layout of nodes on import.



Note: As a workaround, you can save assemblies from the Schematic viewport.

Baking

- ID 293020 (50671) - Baking displacement maps can cause UV seams to be visible, and the baked displacement map to show quilting effects and other render artifacts.
- ID 221481 (49437) - The Bake Channel Swizzling option can't bake to texture alpha.

Bucket Render

- ID 279848 (55663) - Motion Blur applied on a curve in a Mesh Operation no longer works.
- ID 235368 (53411) - Mesh lights or any direct light too close to a surface can produce fireflies (hot pixels) in some cases.



Note: As a workaround, use a Maximum Radiance higher than 1 W/srm2 to reduce the bias.

- ID 243070 (53793) - Rendering using a Dual CPU with 72 threads was significantly slower than expected.



Note: As a workaround, any machine that has more than 32 cores, performance will be better if you limit rendering to half the number of cores you have.

- ID 292947 (53184) - Value presets created for material Subsurface Scattering samples in Modo 10.1 or earlier now show on the render item instead.
- ID 297021 (52730) - The Vertex Illumination Bake command doesn't work as expected, when the mesh has transform channels.



Note: As a workaround, freeze the transforms in the mesh properties.

Color Management

- ID 221439 (49244) - Windows only: With Perform Color Correction on, setting a default scene to a scene with a mesh that has a position channel crashes Modo at launch.



Note: As a workaround, use System > Reset Preferences to reset to defaults or move/remove the default scene.

Command Line

- ID 289290 (49514) - macOS only: Running modo_cl before running the UI Modo application breaks code signing.



Note: As a workaround, start the UI version of Modo once, before running modo_cl on any system where you later intend to use the UI version.

File and Image I/O

- ID 337523 (56862) - Modo for SolidWorks Kit: Modo crashes when importing the same SolidWorks file twice in one Modo session. This bug only affects import using the kit, not direct imports (File > Import).



Note: As a workaround, before importing a SolidWorks file for the second time, exit and restart Modo.

- ID 221508 (50198) - Alembic scenes don't export some surface items, including static meshes and procedural shatter items.
- ID 226589 (49728) - Exporting selected layers (from the Item List context menu) to .fbx doesn't export instances, unless the original mesh is also exported.



Note: To resolve this, set the .fbx preference to Export Selection and use Export As...

- ID 220991 (47036) - Color management in .svg images is not currently supported. This is a side-effect of a bug fix where the largest allowable image size (64k x 64k) was always used when color correction was enabled.
- ID 220975 (46962) - Rendering .svg images used as stencil maps for displacement or for layer masking can be very slow.
- ID 346842 - Alembic import - Drag/drop doesn't import animation correctly.



Note: As a workaround, use File > Import.

Fur

- ID 288248 (35731) - Fur length textures can't be edited with the Stretch tool.



Note: Use different fur length drivers, such as hair guides or vector vertex maps.

Input Devices

- ID 226536 (51741) - macOS only: Modo sometimes becomes unresponsive when using the combination of a click-drag in a tree view (for example, when toggling the visibility of two successive items in the Shader Tree), followed immediately by a two-finger scroll gesture on some devices, including laptop trackpads and the Magic Mouse.



Note: As a workaround, change to a 3-button mouse (recommended to fully access all of Modo's features).

- ID 303287 (35856) - Linux only: Plugging in a Wacom tablet while Modo is running can cause undesired movement. This cannot be fixed, due to a limitation of the hardware driver.



Note: To avoid this, plug in the tablet before application startup or restart.

MeshFusion

- ID 316276 (56973) - If a Trim Fusion role is assigned to an object and then it is dragged and dropped onto a Primary, the drop menu does not contain the Trim boolean options.



Note: As a workaround, use either the Fusion Buttons (Tool palette - Set Mesh Role & Apply section) or Pie Menu (Apply SubtractionApply Intersection or) when initially adding Trims to each Fusion Item (Trims can contribute to multiple Fusion Items). If initially applied with either of those methods, all subsequent Drag & Drop options will be supported.

Modeling

- ID 226970 (32728) - Zooming out with a Space Navigator alters the Work Plane position.
- ID 408278 (60027) - Linear Falloff snaps to object size.



Note: As a workaround, use the right mouse button for an interactive initial linear handle.

Network Rendering

- ID 226363 (48325) - Scenes with image sequences rendered with Full Frames use the wrong image sequence number on slave machines.



Note: As a workaround, use File > Consolidate Scene, then render the scene using a shared network folder (Preferences option under Rendering > Network Rendering).

- ID 226337 (36986) - Slaves render hidden meshes. Since mesh hide state is not stored in the scene, when that scene is transferred to the slaves, the state is lost. The master respects the hidden state, however.



Note: As a workaround, if the intent is to avoid rendering, toggle the visibility for the item or render or open System > Preferences > Rendering and disable Use Network Render Nodes.

- ID 220955 (30318) - Network Rendering doesn't support Realfow particles.
- ID 226336 (25636) - Frame passes are not supported.
- Several Bugs - While it apparently worked in Modo 902, in some cases, Network Rendering was not implemented to support baking. Changes to Modo in the 10-series apparently broke what was working for some artists, so the functionality has been disabled.



Note: As a workaround, Modo 10 implemented the ability to Network Bake using Bake Items and an external render controller. For more information, please see the SDK Wiki.

Nodal Shading

- ID 221393 (50642) - Nodal shading does not support UDIMs.
- ID 385250 - Nodal Shading is slower in 13.0 with some modifiers.

Painting/Sculpting

- ID 288461 (41682) - Textures are not always updating in Preview/Render when painting on an image map.



Note: You can save and reload the image to force the update.

Particles

- ID 303192 (34925) - Re-opening scenes saved with large particle caches can cause problems.



Note: To avoid such issues, delete the cache before closing Modo, or export the particles to .csv cache files or Realflow .bin files. You can do this by attaching one of those nodes to the Particle Simulation item in the Schematic viewport, and clicking Cache Simulation.

Preview Render

- If a high poly mesh is not visible, the Preview baking output will be incorrect.



Note: As a workaround, reset Preview to fix the baking.

Procedurals

- ID 305303 (56318) - Procedural duplication of Mesh Ops in a Deform folder creates errant Mesh Ops list.
- ID 305302 (56317) - Duplication of Procedurals does not work with the Select By Previous Operation tool.



Note: As a workaround, manually edit the duplicate's Select By Previous Operation Mesh Ops.

- ID 266469 (54738) - A duplication of any item that is a Merge Meshes Source (For example, a Mesh Item, Procedural Item, or Fusion Item), any duplicates (duplicate or instance) are added to the Merge Meshes Ops List as a source.



Note: As a workaround, remove the unwanted additional Merge Mesh Sources (regardless of the type of source) in the Mesh Ops List using the X icon in that list next to each Merge Meshes source.

- ID 221355 (52149) - Curve Extrude mesh operation: The Path Segment Generator's Align to Normal option doesn't work when using a Bezier with zero-length tangents.



Note: As a workaround, rotate the polygons to point toward the +Z before extruding or make sure there are no zero-length tangents.

- ID 289810 (46512) - When rigged, Rock items and other procedurals do not display correctly in GL. This is a limitation of the feature and will not be fixed.



Note: You can use Preview or RayGL to visualize the variations from rigging.

- ID 388978 - Paving does not work when a Guide curve runs through a paving hole

References

- ID 294394 (44492) - If a scene that already contains references is referenced, the shading of the original references may not persist.



Note: As a workaround, limit scenes with shading to one level of reference.

- ID 220957 (41119) - Reloading a reference after replacing it with the same file can cause Modo to crash.
- ID 309252 (56620) - Modo crashes when closing a scene containing a referenced scene after attempting to revert a reference override.



Note: As a workaround, first close and reopen the scene before attempting to revert the reference.

Rigging

- ID 287584 (27244) - Duplicating joints in a bound mesh retains influences from the original joint chain.
- ID 404238 - Bezier Curves don't work correctly with the Curve Falloff.

Scripting

- ID 242545 (53458) - Right-clicking or running a script in the Script Editor can lock up input to Modo.



Note: As a workaround, click in the top window of the Script Editor, use the main menus, or change to another application, then switch back to Modo.

Shader Tree

- ID 299187 (37858) - In the Shader Tree, choosing a group from Add Layer > Image Map > (use clip browser) fails.



Note: To work around this issue, in the Clip Browser, choose a single image instead of the group, and then change to the image group using the Texture Layer's Properties tab.

- ID 288141 (30947) - Layer masking displacement does not work unless you drag and drop the masking layer onto the displacement layer.
- ID 372282 (57874) - Custom Materials that define their own smoothing properties (such as the Skin material), no longer smooth the mesh correctly.

Unreal and Unity Materials

- ID 294747 (50701) - Unreal material Ambient Occlusion does not bake correctly in Modo.
- ID 295862 (50700) - There is no way to visualize the Unreal SubSurface Color effect in Modo.
- ID 221477 (50451) - On some graphics cards, Unity material may cause flickering in the Advanced viewport when used with bump maps and shadows.

UI

- ID 281374 (55759) - Transforming objects can cause the Items Properties panel to flicker.
- ID 277244 (55571) - Resizing the dopesheet in Zen crashes Modo 11.1, but not in Modo 11.0.

- ID 273139 (55185) - Text in the viewport icon buttons is not visible in the Advanced viewport on some Mac OS/AMD configurations.



Note: As a workaround, upgrade Mac OS to 10.13.

- ID 226492 (44496) - macOS only: Disabling Affect System Color Dialog in Preferences > Rendering > Color Management, and using the system color picker caused colors to darken with each use of the color picker.



Note: This is due to an OS X issue, which requires the color profile in both the monitor settings and color picker to be set to sRGB IEC61966-2.1.

- ID 224169 (44896) - Dragging and dropping an image from disk into the Clips list doesn't work.



Note: If the Clips list is empty, drop the image onto the bar at the top, otherwise drop it above or below other images in the list.

- ID 288714 (43162) (Windows only) -Setting a custom text size affects Modo's text drawing.



Note: As a workaround, go to the compatibility settings by right-clicking the Modo shortcut or executable, and turn off font-scaling for the application.

- ID 333249 (57715) - Selecting items in the viewport does not always update the Properties form.



Note: As a workaround, click the alt key.

- ID 388937 - macOS only: UI form field highlights can appear grey.
- ID 395884 - Mac only - Double-clicking bottom right corner or edge of popover doesn't resize back the popover correctly

UVing

- ID 440824 (60620) - Modo crashes when I click "Apply Overall" in the Texel Density Palette...



Note: As a workaround, deselect any Mesh item that does not have the specified (or currently selected) UV map.

Viewports

- ID 310930 (56706) - Unity and Unreal materials are not displayed correctly when first loaded into the Advanced viewport.



Note: As a workaround, enable and then disable the visibility of the Shader Tree textures.

- RGBA textures only draw correctly in the Advanced viewport. In the Default viewport, any unsupported texture effect on an image map is drawn as diffuse color when the layer is selected in the Shader Tree.
- ID 281365 (55816) - Wireframes are washed out on transparent surfaces in the Advanced viewport.



Note: As a workaround, avoid transparency when modeling or doing work where wireframes are needed. Alternatively, use the Default viewport.

- Windows only: Using Raptr can cause GL driver crashes in Modo.
- ID 338374 (58003) - Game Navigation mode (camera rotation) does not work in a floating 3D view (palette or separate window).



Note: As a workaround, use Game Navigation mode only in docked 3D views (views that are part of a Layout).

- ID 338599 (57955) - Clicking on the VR layout tab may crash when using a system with a Radeon WX-series graphics card. This is due to a driver bug and should be fixed by a AMD in a future driver release.
- ID 289738 (49473) - Projections are incorrect if the projecting camera is set to Vertical film fit mode and the width is less than the height.
- ID 289020 (43771) - Camera projections from non-render cameras show distortion in GL and baking.



Note: To avoid this, make sure that the projection camera has a film width-to-height ratio that matches the main render camera.

- ID 408416 - Gradient (texture layer) renders incorrectly in the Advanced Viewport.



Note: As a workaround, use Preview.

- ID 420733 - Ghost Mode Transparency set to 0% isn't fully transparent.

VR

- ID 218386 - VR is now supported on Linux, but has only been tested and verified working using SteamVR on Ubuntu 18.04.