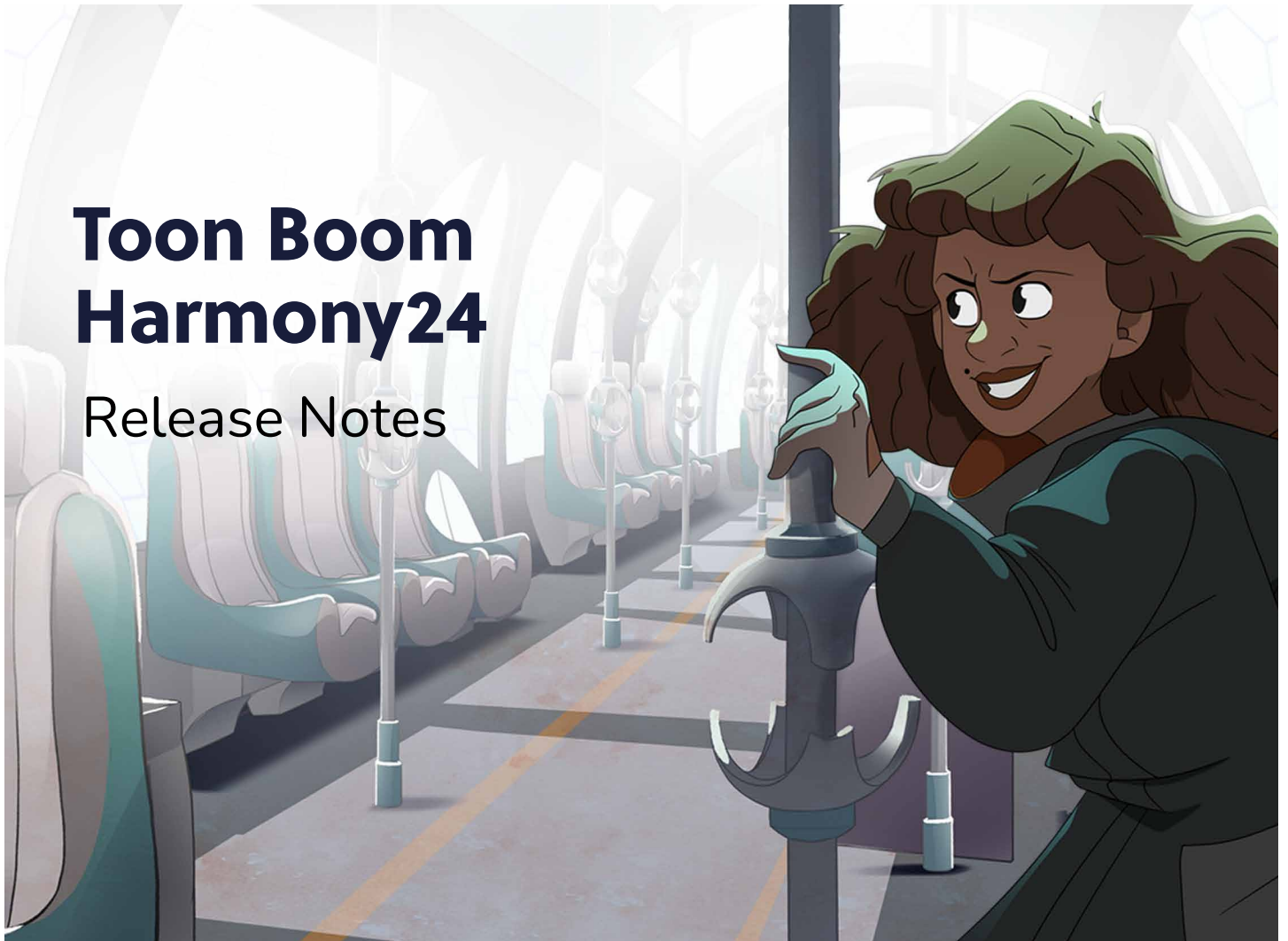


Harmony 24

Toon Boom Harmony24 Release Notes



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Harmony 24.0.2 Release Notes

Harmony 24.0.2, build 23443 (2024-12-19)

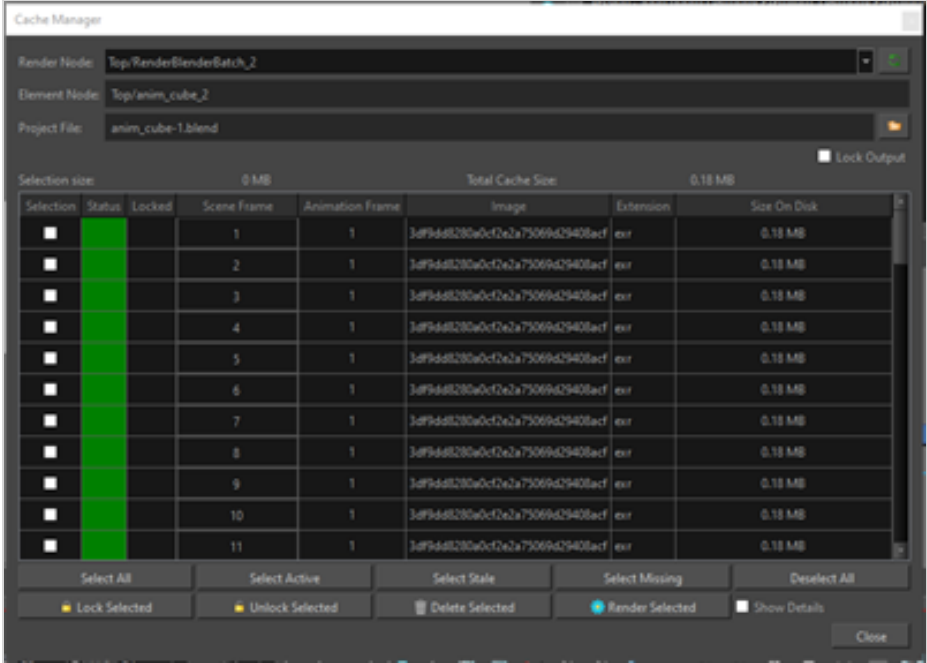
New Features and Improvements

General


Feature	Description
Paste Behaviour Preference	<p>A new preference was added to the Drawing tab of the Preferences to control the behavior of paste operations. The following options are available:</p> <ul style="list-style-type: none"> • Normal Paste: Always paste the drawing object at its original location. • Paste in Centre if Outside: Paste the copied drawing objects in the centre of the view if it is outside of the visible area. (Default value) • Always Paste in Centre: Always paste the drawing object in the centre of the view.

External Rendering

Feature	Description
Cache Manager (PRM only)	<p>The Cache Manager is a new utility that allows you to manage the rendered images located in the cache when the RenderMayaBatch and RenderBlenderBatch nodes are used. When a RenderMayaBatch or RenderBlenderBatch node is selected, all available cache entries for that node will display in the Cache Manager.</p>



This utility displays a list of the cached renders of 3D models rendered using external rendering software. It provides the ability to lock and delete cached images on disk. The Cache Manager also allows you to see the size of the cached images and the total size of the folder containing all the cached items.

To open the Cache Manager, click the  icon in the External Rendering toolbar.

3D

- The 3D Models folder in the Library view now displays the full name of 3D models. *HAR-10212 (PRM only)*

WebCC

- It is now possible to configure the default import and export options by editing the 'importExport.json'. The file is located at the following location on the WebCC server:
 - **Linux:** /usr/local/ToonBoomAnimation/harmonyPremium_24/cloud/server/importExport.json
 - **macOS:** /Applications/Toon Boom Harmony 24 Premium/Harmony 24 Premium.app/Contents/tba/cloud/server/importExport.json
 - **Windows:** C:\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony 24 Premium\cloud\server\importExport.json

A custom path for the importExport.json can be defined using the following option when starting WebCC: -importExportOpts [path] *HAR-7701 (ADV and PRM only)*

Scripting

- Added the ability to query a list of all accessible node types using `node.getNodeTypeList` *HAR-10223* (PRM only)
- The "5 days licence expiration" dialog no longer opens when running scripts from the command line. *HAR-10188*
- `selection::selectedNodes()` and `selection::selectedNode(int i)` are now sorted in the order of selection. *HAR-10384*
- The `MovieImport.doImport()` function on Windows no longer requires QuickTime to be installed. *HAR-9906*

Python

- Added the ability to query a list of all accessible node types using `OMH::HarmonyApplication::session_context::node_type_list` *HAR-10223* (PRM only)
- `OMC::Application::convert_from_pyside` and `OMC::Application::convert_to_pyside` have been added to convert between PythonQt and PySide6 wrappers. *HAR-9997*
- `OMH::NodeList::find` and `OMH::SelectionNodeList::find` methods have been added that search for a node with a specialized search object. *HAR-10060*
- It is now possible to open a scene from the database in read only mode when using the Python API. The optional `readOnly` parameter in `HarmonyModule::open_project_database` opens the scene in read only when set to true. *HAR-9158* (ADV and PRM only)
- When attempting to create a Display node with a name that already exists, the name will now be auto-incremented instead of failing. *HAR-9067* (PRM only)
- The node selection handler now supports adding nodes directly from a path string. *HAR-10056*

External Rendering

- `RenderMayaBatch` and `RenderBlenderBatch` nodes can now access individual layers when rendering multilayer EXR files. Layers can be accessed via a text field in the node's layer properties. If the rendered EXR contains cryptomattes, they can be accessed by connecting a `CryptoMatte Isolate` node under it. *HAR-10021* (PRM only)
- Added 'Use Best Resolution' to the `RenderMayaBatch` and `RenderBlenderBatch` nodes. This option prevents the re-rendering of frames when the frame is already cached at a higher resolution. *HAR-10025* (PRM only)

Fixes

The following issues are fixed for this release of Harmony onward.

General

- When the Cable Cutter tool is active, pressing the middle mouse button in the Node view can cause the tool to become permanently active. *HAR-10130* (PRM only)

- The Tint Panel's colour preview displays inaccurate colours in the Camera and Drawing views when the colour space is not set to sRGB. *HAR-9794 (ADV and PRM only)*
- Some MasterControllers made with the Function Wizard in older versions of Harmony do not load in Harmony 24. *HAR-10155 (PRM only)*
- Onion skinning can get stuck in advanced mode when the "Flat Tool Toolbar" preference is used. *HAR-10076 (ADV and PRM only)*
- PNGs in the application's resources cause sRGB ICC profile errors to be printed in the console/terminal when the software is launched. *HAR-9840*
- The path displayed at the bottom of the Node view is not properly refreshed when going up one level and exit a symbol. *HAR-9674 (PRM only)*
- Deleting an audio track displays an unnecessary confirmation dialog. *HAR-8114*
- Creating a new resolution preset, while working off the database, changes the default resolution for all database levels. *HAR-9865 (ADV and PRM only)*
- Deleting sound from the Sound Element Editor causes Harmony to crash. *HAR-10285*
- The Colour Eyedropper tool's colour selection is offset by one pixel when used on bitmap drawings. *HAR-10318 (ADV and PRM only)*
- Harmony is unable to read layers other than the composite layer from deepEXR files. *HAR-10474 (PRM only)*
- Harmony may crash when deleting a colour while the Tint Panel is opened. *HAR-10510*
- Harmony crashes when using the "Duplicate Drawing" command when multiple frames of a Symbol or from a morphed drawing are selected. *HAR-10370*
- Harmony crashes while rendering if a drawing marked to be written to a cryptomatte layer moves into the camera frame while also being connected to a cutter node. *HAR-10554 (PRM only)*
- Harmony crashes on systems that don't support the Vulkan API 1.1 or later. *HAR-10114*
- Drawings are missing after undoing an 'Unsync Layers' command on a synced drawing layer. *HAR-9167 (ADV and PRM only)*

Drawing

- Using the Edit Pencil Lines Properties tool causes the pencil line texture to reset to the default position. *HAR-10142 (ADV and PRM only)*
- Edit Pencil Lines Properties tool applies a 'Thickness Multiplier' to the Line texture when the 'Thickness Multiplier' option is not selected. *HAR-10140 (ADV and PRM only)*
- The "Merge Pencil Lines" command sometimes fails to merge pencil lines together. *HAR-10373 (ADV and PRM only)*

- Pencil textures are not scaled when pasting pencil lines between drawing layers that have different scale values. *HAR-10481 (ADV and PRM only)*
- Pencil texture is not scaled when scaling a line using the Select tool with the Scale Pencil Line Thickness option enabled. *HAR-10482 (ADV and PRM only)*

Effects/Comp

- Harmony may crash when a very heavy blur effect is rendered using OpenCL on Windows. *HAR-10101*
- Rendered images may have corruptions when rendering blurs if "Graphics Card Acceleration" enabled in the preferences and that the scene processing bit depth is set to 32-bit. *HAR-10335*

Layers

- The colour space in the drawing element layer is not grayed out when the "Read Toon Boom Drawings Using sRGB Colour Space" option is enabled in the scene settings. *HAR-9942 (ADV only)*

3D

- Geos and bones are locked and cannot be moved after undoing an exposure change from the Xsheet that changes the exposure of the 3D model. *HAR-9946 (PRM only)*
- 3D model's thumbnails are poorly framed in the Library view. *HAR-10333 (PRM only)*
- Opening scenes with 3D models that have at least one joint with a missing parent causes Harmony to crash. *HAR-10377 (PRM only)*
- Cameras imported from FBX files into Harmony are rotated 90 degrees. *HAR-10386 (PRM only)*

Nodes

- "Dynamic with Moving Holds" mode of the Animate-Pencil-Texture node is not persistent and changes when the file is reloaded. *HAR-10144 (PRM only)*
- Dynamic Attributes the Colour-Override, ScriptModule, MasterController, Field-Chart and Blur-Radial-Zoom nodes are lost when copy-pasting them reopening the scene. *HAR-10210 (PRM only)*
- Port Filters render incorrectly when Matte Mode and Inverted are set and that all the mattes are selected. *HAR-10001 (PRM only)*
- Attempting to move a parent peg immediately after creation, pulls a cable from its in-port instead. *HAR-10080 (PRM only)*
- The 'Apply to Effects' Port Filtering option behaves inconsistently between Softrender and OpenGL. *HAR-9986 (PRM only)*
- Port Filters are duplicated when moving the cable to a Multi-Port-In node. *HAR-9879 (PRM only)*
- The 'Inverted Matte' and 'Inverted Filter' Port Filtering options have unexpected behaviours. *HAR-9786 (PRM only)*
- Pressing the Delete key to delete a port filter deletes the node if it's selected. *HAR-9976 (PRM only)*

- The colour space in the drawing element nodes is not grayed out when the “Read Toon Boom Drawings Using sRGB Colour Space” option is enabled in the scene settings. *HAR-9942 (PRM only)*

Import / Export

- Adobe Illustrator files are not correctly distributed to layers when imported. *HAR-10094*
- The Write node fails to write a PDF if the path contains Unicode characters. *HAR-10297 (PRM only)*
- PSD files with a single background layer fail to import. *HAR-10229*
- PSD files with dots in their names fail to import when set to 'Keep Original Bitmap' and 'Individual Layers'. *HAR-8171*
- Some Pencil lines are scaled incorrectly when exported to a SVG. *HAR-10330*
- Importing a PSD file as individual layers fails when Harmony's language is set to Spanish. *HAR-10389*
- Export Layout Image and Export Layout from Selection commands don't work properly and cause layers to be misaligned or the wrong size. *HAR-10367 (ADV and PRM only)*
- Exporting a layout with the “Export Camera Frame” option selected, fails to render the camera frame if there is no camera node in the scene. *HAR-10412 (ADV and PRM only)*
- The "Import > Vector" command is missing from the File menu. *HAR-10472 (ESS and ADV only)*
- Importing an Illustrator or PDF file may cause Harmony to crash. *HAR-10163*

Deformers

- Undoing the creation of a Deformer after closing the Camera view causes Harmony to crash. *HAR-10086*
- Creating a Shape Aware Deformers using cage mode over an imported image with alpha incorrectly sets the resting position of some port to 0. *HAR-10190 (PRM only)*
- Undoing the creation of Shape Aware Deformers points while the deformer's layer properties are open will eventually cause Harmony to crash. *HAR-9960 (PRM only)*
- The Mesh Warp node renders with the wrong colours when using the Rec2020 linear colour space. *HAR-10122 (PRM only)*
- Harmony may crash after changing the number of rows or columns in a Mesh Warp node. *HAR-10461 (PRM only)*

Rendering

- Write nodes attached to a Scale-Output node only render black frames. *HAR-10187 (PRM only)*
- The colour of 3D models is incorrect in software renders when the working colour space is not set to sRGB. *HAR-9945 (PRM only)*
- Rendering the full length of a scene in the ProRes 422 format does not produce a video file in Linux and Windows. *HAR-7224*

- Drawings attached to effects nodes are not included in SWF renders, even when the effect is supported. *HAR-7841*
- Rendering to ProRes in Windows rounds down the horizontal resolution to the nearest multiple of 16 pixels, cropping the rendered images. *HAR-10525*
- Auto-patch node renders with the wrong colour if "Read Toon Boom Drawings Using sRGB Colour Space" is unchecked while using a Linear colour space. *HAR-9576* (PRM only)

WebCC

- Movies created with `WebCCExporter.exportMovieFromFiles()` have extra frames at the end. *HAR-10449* (ADV and PRM only)

Scripting

- `SubnodeData::setRotation` has to be run multiple times before the transformation is correctly applied. *HAR-10200* (PRM only)
- The `-readonly` argument does not work when running a JavaScript from the command line without the `-batch` option. *HAR-10334*
- The path returned by `MovieImport::image(i)` is missing a slash before the filename. *HAR-10409*
- `Model3D::root()` and `Model3D::graph()` fail and return empty values. *HAR-10204* (PRM only)
- `QUrl` is missing a large number of functions in its bindings. *HAR-10170*
- `ControlCentre.printToConsole()` causes scripts to fail when it is called more than once. *HAR-10394* (ADV and PRM only)
- `setTextAttr` and `getTextAttr` do not work with Dynamic Attributes on Colour Override nodes. *HAR-10211* (ADV and PRM only)

Python

- Home and End keys do not move the caret as expected in the Python Script Console. *HAR-10061* (ADV and PRM only)
- Harmony crashes when loading Python with mismatched libraries. *HAR-9466*
- `HarmonyRenderHandler::cancel()` always fails and returns an error. *HAR-10311*
- `Column::set_entry` fails when used on a 'DrawingTimingColumn'. *HAR-10236*
- `Node::ports_in` returns a 'InPortList' instead of a 'MultiInPortList', when on a 'MULTIPOINT_OUT' node. *HAR-10222*
- `OMC::ColumnList['columnName']` returns an error and not the expected column. *HAR-10235*
- Commands pasted from a rich-text source into the Python Script Console fail to echo to STDOUT. *HAR-9068* (ADV and PRM only)

- `OMC::Clipboard::paste_template_into_group` doesn't use the 'insertFrame' parameter. *HAR-9908*
- `OMH::HarmonyProject::save_as_new_version()` and `OMH::HarmonyProject::save_all()` do not update the title bar of the application. *HAR-9428*
- Exiting an external interpreter after loading a database project causes a looping timeout error in Windows. *HAR-10542* (ADV and PRM only)
- Autocompleting members of `OMC::Project` do not work. *HAR-10423* (ADV and PRM only)
- Harmony crashes if multiple Python versions are in the 'PATH' environment variable. *HAR-8632*
- When using the Python Console, referring to a group node and using autocomplete will result in the creation of Multi-Port-In and Multi-Port-Out nodes. *HAR-8611* (ADV and PRM only)

Linux

- WebCC's RabbitMQ fails to start on CentOS Stream 9 as it attempts to load old libraries. *HAR-10230* (ADV and PRM only)
- Missing python libraries prevent using Harmony with external Python interpreters. *HAR-10238* (ADV and PRM only)
- Loading Python on Rocky/Centos7 causes a crash in certain cases. *HAR-10241* (ADV and PRM only)
- Harmony services fail to start on CentOS Stream 9. *HAR-10227* (ADV and PRM only)
- Harmony crashes when adding game bones to a drawing. *HAR-9276* (ADV and PRM only)

External Rendering

- BlenderRenderBatch node renders fail when 'Use External Render Settings' is unchecked and the Blender output file is set to a format without an RGBA option. *HAR-10113* (PRM only)
- Improper hostname or DNS configuration can cause RenderBlenderBatch and RenderMayaBatch renders to fail. *HAR-10298* (PRM only)
- Rendering 3D models using either RenderMayaBatch or RenderBlenderBatch nodes may fail after the system goes to sleep or if the socket connection to the client is lost. *HAR-10310* (PRM only)
- Harmony may crash when rendering 3D models through Blender with the following error: "Error: cannot access member 'imageFile' of deleted QObject" *HAR-10533* (PRM only)
- RenderBlenderBatch and RenderMayaBatch renders fail when using a colour space that does not exist in Blender/Maya. *HAR-10556* (PRM only)
- RenderMayaBatch node never renders deep exrs when using external render settings. *HAR-10462* (PRM only)
- Baking to an external project fails when the file path contains dots. *HAR-10401* (PRM only)
- Z depth from Maya and Blender renders is lost when lowering the preview resolution. *HAR-9928* (PRM only)

- When baking a RenderBlenderBatch or RenderMayaBatch node to an external project with an incorrect file extension, no file is created and no error is reported. *HAR-9841 (PRM only)*
- Baking a RenderMayaBatch or RenderBlenderBatch node may fail if the external project already contains keyframes. *HAR-9996 (PRM only)*
- The 'Bake to External Project' script always results in a file with a single frame. *HAR-10277 (PRM only)*

Timeline

- Changing the scene length from the Timeline view extends and overwrites exposures. *HAR-10347*

Harmony 24.0.1 Release Notes

Harmony 24.0.1, build 23019 (2024-07-19)

Improvements

3D

- Bones in armatures of 3D models are now displayed pointing to their children rather than using the orientation of their joint. A new preference named “Display Armatures as a Joint Representation” is available on the General tab of the preferences and can be disabled to use the previous display mode.
- Enlarged the picking area of the rotation handles when using the Transform tool for the 3D rotation.

Python

- The default options for the Python Copy and Paste functions have been adjusted for clarity and ease of use:
 - `harmony.CopyOptions()`: The default range is now the current frame length, instead of 0 to 0.
 - `harmony.PasteOptions()`: The default range is now the current frame length, instead of 0 to 0.
 - `harmony.CopyOptions()`: Extended with a similar `start_frame_src` and `num_frame_src` that `PasteOptions` uses
 - `Clipboard.copy` should provide an overload of type: `copy (const QStringList &nodePaths, const OMC::CopyOptions *copyOptions=null)` that uses the `startFrame` and `numFrames` from the `copyOptions`.
 - When a range is provided as both method arguments and `copyOptions` arguments, the method arguments overrides it and takes priority.
 - If a non `CopyOptions` or `PasteOptions` object type is used when that type is expected as an argument, an error is now returned.

JavaScript

- The `ColorOverride` class has been extended to include the following functions:
 - `setOverrideColorId`
 - `getOverrideColorId`
 - `setOverrideColorName`
 - `getOverrideColorName`
 - `addSelectedColor`
 - `removeSelectedColor`
 - `setSelectedColorID`

- `getSelectedColorID`
- `setTraverseMatte`
- `getTraverseMatte`
- `setSelectedColorMode`
- `getSelectedColorMode`
- `fromXML`
- `toXML`

Fixes

The following issues are fixed in this release of Harmony and later.

General

- In the properties window, pressing tab no longer moves from one attribute to another. *HAR-9627*
- Harmony may crash during software renders of blur effects on old generation AMD processors if GPU Graphic Card Acceleration is enabled. *HAR-10079*
- The Function Wizard fails when attempting to create a Master Controller using the “Enable/Disable Node” operation. *HAR-9924*
- OpenGL layering is incorrect when using a 2D Composite with 3d elements. *HAR-9636*

Drawing

- Deselecting using the Select tool by holding Shift+Alt crashes when used over unselected grouped strokes. *HAR-9903*
- There is a small delay when using the drawing tools with a mouse. *HAR-9999*

Effects/Comp

- The turbulence effect is applied to nodes that are not directly connected to it when viewed in the Perspective View. *HAR-9952*

3D

- 3D models rendered through Maya, using the MayaRenderBatch node, have a slight offset the farther they are from the centre of the camera. *HAR-10166*
- Inconsistent joint orientation values in Maya cause MayaRenderBatch to render transformations incorrectly. *HAR-9983*
- Harmony crashes when importing a 3D model when the video card does not support Vulkan 1.1 or higher. *HAR-9837*

- 3DS files are rotated 90 degrees when imported with Vulkan 3D Rendering enabled. *HAR-10004*
- “Bake Nodes” command in the External Rendering toolbar creates too many undos. *HAR-10051*
- Lights do not render properly through Maya/Blender batch nodes when an asset is scaled *HAR-10003*
- Textures from 3D models stored in TIFF format are not read when using Vulkan. *HAR-9517*
- Bones that have the same name cause improper positioning of geometry in Harmony. *HAR-9937*
- Bone position is reset to 0 when the bone is marked as Armature Root in the 3D file. *HAR-10050*
- Cutters are not applied to 3D Models when Vulkan 3D Rendering and Passthrough for All Effects preferences are enabled. *HAR-9788*
- Harmony crashes when disconnecting the input port of a RenderMayaBatch node during a software render. *HAR-10115*

Nodes

- Selecting a port on a node to add a name or a filter is impossible when using a tablet stylus. *HAR-10072*
- Harmony crashes when adding a Particle System example in a group while there is a node selected outside the group. *HAR-10072*

Import / Export

- SVG files with closed shapes may not import correctly. *HAR-10073*
- Some SVG files cause Harmony to crash when imported. *HAR-10070*

WebCC

- When an element is deleted and a new element with the same is created, WebCC deletes the new elements folder. *HAR-10134*

Scripting

- Running `pasteAndOffsetTemplate` several times in a row causes Harmony to crash. *HAR-9375*
- `exportMovie()`, `exportToQuicktime()` and `exportToProRes()` do not throw appropriate exceptions when run with an invalid display node. *HAR-9714*

Python

- Class setter methods are ignored when called for the following value types: *HAR-9761*
 - `PasteActionOptions`
 - `PasteOptions`
 - `CopyOptions`

- Matrix
- Point2d
- Point3d
- Vector2d
- Vector3d
- Rect2D
- Rect2DI
- Transformation
- AllocatedRect2D
- AllocatedRect2DI
- Colour

Linux

- Adding and manipulating game bones on Linux causes Harmony to crash. *HAR-9276*
- Navigating the Xsheet with keyboard shortcuts with a multi-monitor setup is slower than in previous versions on Linux. *HAR-9528*

Harmony 24 Release Notes

Here is the list of changes in Harmony 24 build 24.0.0.22883.

Drawing Tools

Symmetry Drawing Guides

Similarly to the perspective guides, the new symmetry guides are created and managed in the [Guides](#) view. The symmetry guides are available for the Pencil, Brush, Stencil Brush, Stamp, Eraser and the shape tools, except for Polyline. One of these tools must be selected in order for the symmetry guides to display.

The symmetry guides split the view and allow for strokes on one side of the guide to be replicated on the other side with a live preview.

The following types of symmetry guides are available in the + dropdown menu.

- Vertical Symmetry
- Horizontal Symmetry
- Dual Axis Symmetry

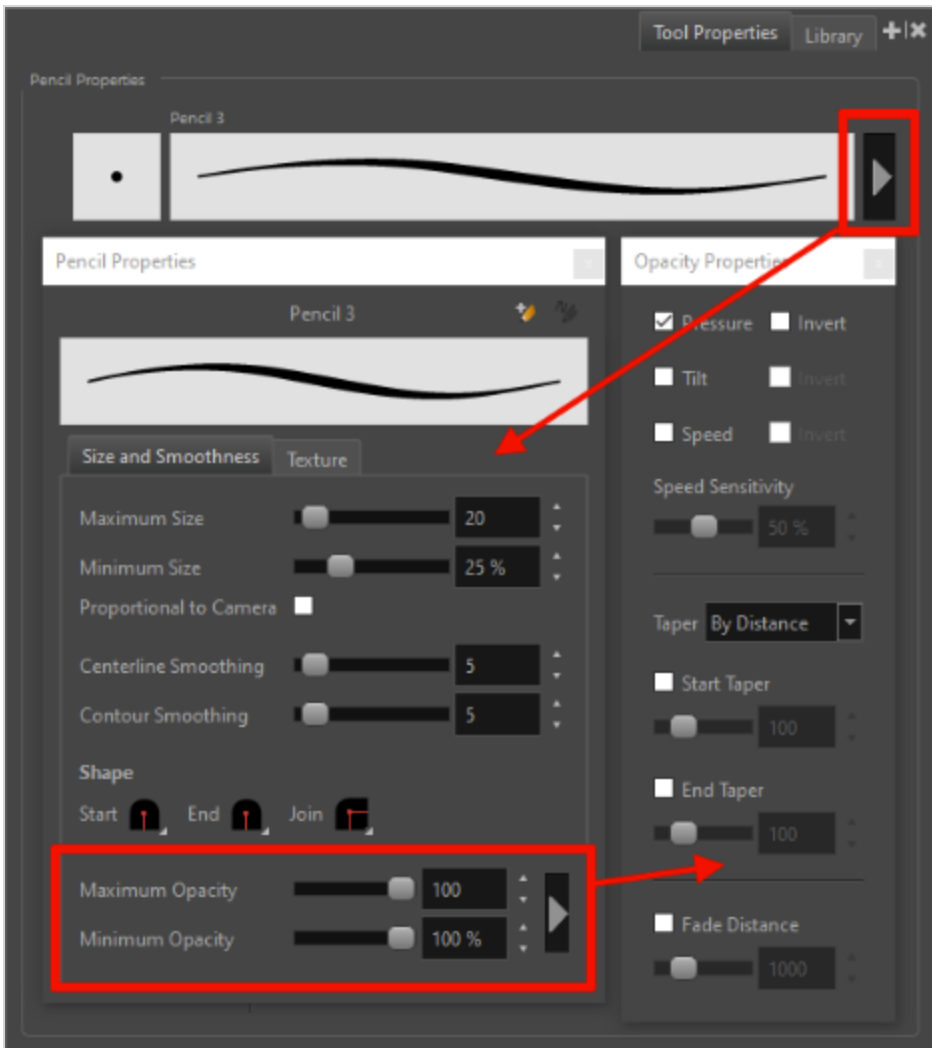
Select one of the guides from the list to display it in the Stage or Camera view.

To move the guide, hover over the center pivot to activate the move cursor. Click and hold while positioning the guide. Click down and hold while positioning the guide. To rotate the guide, hover over one of the guides to activate the rotate cursor. Click and hold while rotating the guide. Rotating closer to the center pivot will be more sensitive. The rotational angle is displayed in the upper left corner of the view.

A symmetry guide and perspective guide can be used together.

Variable Opacity using the Pencil Tool

The new Opacity Properties provide a more natural feel when drawing and greater control over the look of pencil lines when using a pressure sensitive pen tablet.

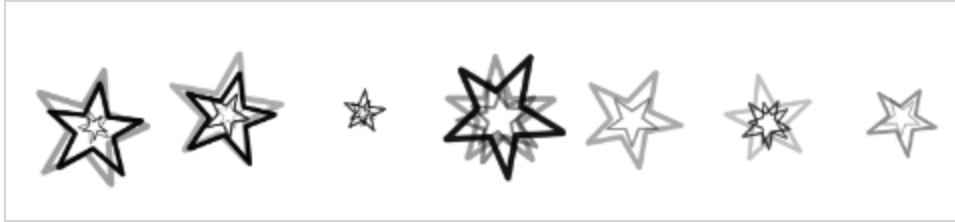


- **Maximum Size:** Defines the maximum opacity of the stroke.
- **Minimum Size:** Defines the minimum opacity of the stroke in relation to and as a percentage of the maximum size.
- The opacity can be controlled further by clicking on the arrow button to open the Opacity Properties.
- **Pressure:** Allows you to use pen pressure to decrease and increase opacity.
- **Tilt:** Allows you to tilt the pen closer to the tablet for less opacity. You can check the box to invert this behaviour.
- **Speed:** Allows you to reduce the opacity of the stroke by drawing at a faster speed. You can check the box to invert this behaviour.
- **Speed Sensitivity:** This is used to control how fast the stroke must be drawn to reach the minimum value.
- **Taper:** Allows you to reduce the opacity at the start and end of each stroke. The value can be expressed using Distance or Percentage.
- **Fade Distance:** Allows you to fade the opacity value over a given distance.

New Brush Properties

New properties have been added to the vector and bitmap Brush and Stencil Brush Properties allowing randomized distribution of brush stamps along the length and width of the brush stroke. The new properties are available for the Tip and Dual Tip in the extended brush properties.

- **Count** (from 1 to 20): Controls the number of stamps that are composited to each step along the brush stroke.



- **Random Count** (from 0% to 100%): Varies the number of stamps at each step.
 - If the count value is 4, and the random count of 50%, the count will be chosen at random between the range [2, 6].
 - If the count value is 4, and the random count is 100%, the count will be chosen at random between the range [0, 8].
- **Random Offset X** (from 0% to 300%): Adds a random offset for each stamp, lengthwise and parallel to the stroke.
- **Random Offset Y** (from 0% to 300%): Adds a random offset for each stamp, perpendicular to the stroke.



Edit Pencil Line Properties

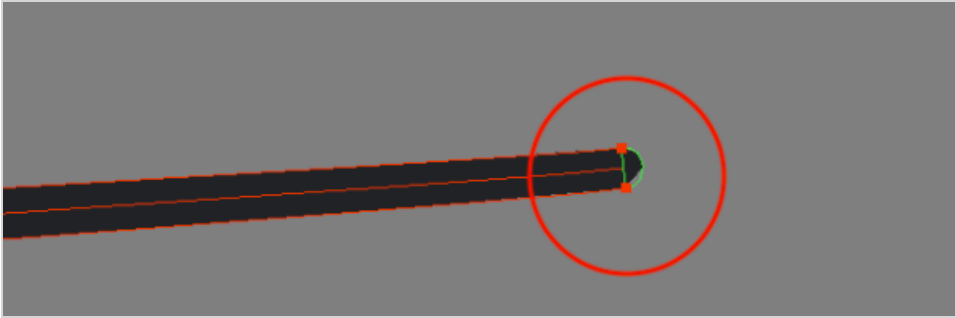
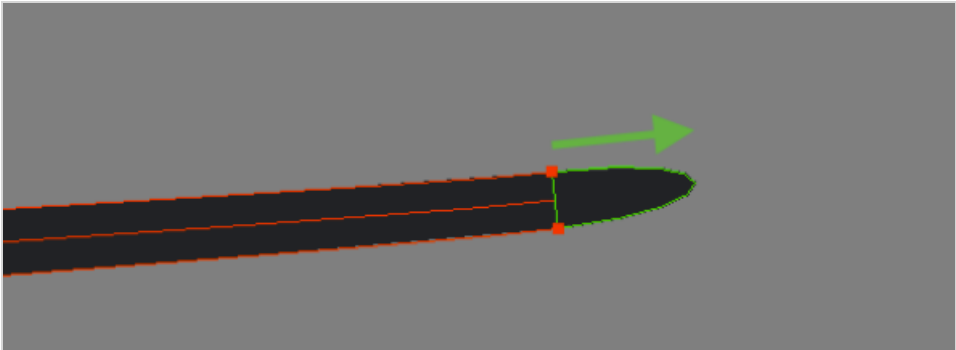
The new **Edit Pencil Line Properties** command (which used to be an external plugin named Stylize Pencil Line) is now available in the Drawing menu. This command opens a window that can be used to change the line width and texture assigned to pencil lines from the selected layers.


The changes can be applied to the pencil lines on the current drawing or all the drawings from the selected nodes/layers. It also has the option to alter pencil lines of specific colours.

The command Edit Pencil Line Properties is available from the Drawing menu when one or more drawing layers are selected.

The Edit Pencil Line Properties has the following options:

Presets: Presets can be used to save and load options.

Presets	Description
Texture	<p>Apply the selected texture to the pencil lines.</p> <p>The <REMOVE TEXTURE> can be used to remove the textures from the pencil lines.</p> <p><KEEP TEXTURE AS IS> will not change the assigned texture if any.</p>
Thickness Multiplier	<p>Changes the thickness of the pencil lines by multiplying the pencil line width using this value. For example, if the current Maximum Size of a pencil line is 2 and that a value of 3 is set to the Thickness Multiplier, the final Maximum Size will be 6.</p>
Apply Multiplier to Tips	<p>Preserve the aspect of line ends by applying the thickness multiplier to the tips.</p>
Additional Top Multiplier	<p>This value can be used to apply a different scaling factor to the tips in order to make them longer or shorter.</p> <p>Original Line:</p>  <p>After applying a Tip Scale of 5:</p> 
Line Thickness	<p>When this mode is selected, the width of all the lines will be set to this specified value.</p>
Apply to All Colours	<p>This option is not available if all the pencil lines have the same colour. When enabled, the changes are applied to all the pencil lines from the selected drawing nodes/layers no matter their colour. When unchecked, colours can be selected from the list on the right. Changes will only be applied to the pencil lines that use one of the selected colours.</p>

Presets	Description
Apply to All Drawings	This option will cause the changes to be applied to all the drawings in the selected nodes/layers.
Preview Drawing	<p>This drop-down can be used to select which Drawing node/layer will be used to preview how the values in the dialog will affect the drawing.</p> <div data-bbox="545 499 1490 667" style="border: 1px solid #c8e6c9; padding: 10px;"> <p> NOTE The drawing is presented as a “fit to screen”. The drawing size may differ from the original scene, but the ratio between the pencil line and the drawing is accurate.</p> </div>

The changes from the Stylize Pencil Lines can be applied to a single drawing, a range of drawings or all the drawings in the selected layers, even those that are not exposed.

Animation

Shape Aware Deformation

A new type of deformer has been added to Harmony 24 to provide higher quality and more predictable deformations. As its name implies, the Shape Aware Deformation takes into account the shape of the object when determining the area of influence for each control point. It has three types of manipulators available to deform drawings: points, bones and cages. All three types of manipulators can be used simultaneously on the same drawing.

Like other deformers, Shape Aware Deformers are created using the Rigging tool. Select a drawing in the Camera view, select the Rigging Tool and turn on the Shape Aware Deformation Mode on the Tool Properties view. Click over the drawing where you wish to add the deformation points.

Additionally, points can be linked together to create bones or cages.

Support For Baking All Types of Deformation

In previous versions only Bone and Curve deformations could be baked when using the Animation -> Deformation -> Convert Deformed Drawing to Drawings command. This command now works with Weighted Deformers, Mesh Warp, Free Form Deformers and Shape Aware Deformers.

Master Controllers Keyframes

The preference "Set Keyframes on all Functions with the Transform Tool" now also affects the Master Controller. When the preference is selected a keyframe will be created for all the monitored attributes of the Master Controller even when there is no change in values.

Transformation Selector Available When Selecting Deform Group

The Transformation Selector list is now available when selecting either the Drawing node or the Deformation group connected to the drawing node.

Element Column with Standalone License

It is now possible to change which Column a Drawing layer/node or a Transformation Switch is using when a standalone license of Harmony is used (a license without the database token).

3D

Faster loading, display and manipulation of 3D models

The technology used to load and display 3D models was completely overhauled using Vulkan Scene Graph to provide faster loading, display and manipulation of 3D models within Harmony. Large models can now be visualized and manipulated without any performance issues.

For now, Vulkan scene graph is disabled by default. To use the Vulkan scene graph, the “Enable Vulkan 3D Rendering” must be enabled from the General tab of the preferences. If the graphics card does not support Vulkan it is recommended to leave the preference disabled.

Improved performance when using Maya for external rendering

Rendering of 3D models using external applications such as Maya is now faster and more efficient when working in Harmony. The following improvements were made:

- Harmony now launches an instance of Maya and keeps it alive for the duration of the session, sending render requests to Maya without restarting it everytime.
- Rendered images from maya are cached in a folder (maya-renders) inside the element folder, which allows Harmony to reused the rendered frame until a change that affects the model in Harmony.

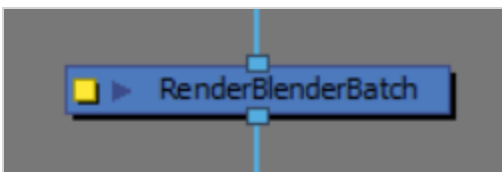
Please refer to the current documentation for 3D integration to setup the render paths:

<https://docs.toonboom.com/help/harmony-24/premium/3d-integration/set-3d-renderer-path.html>

And how to copy original models in the scene: <https://docs.toonboom.com/help/harmony-24/premium/3d-integration/prepare-proj>

Using Blender as an external renderer

Support for Blender as an external renderer was added to Harmony 24 using the new **RenderBlenderBatch** node. This node works in a similar way as the RenderMayaBatch node.



Please refer to the current documentation for 3D integration to setup the render paths:

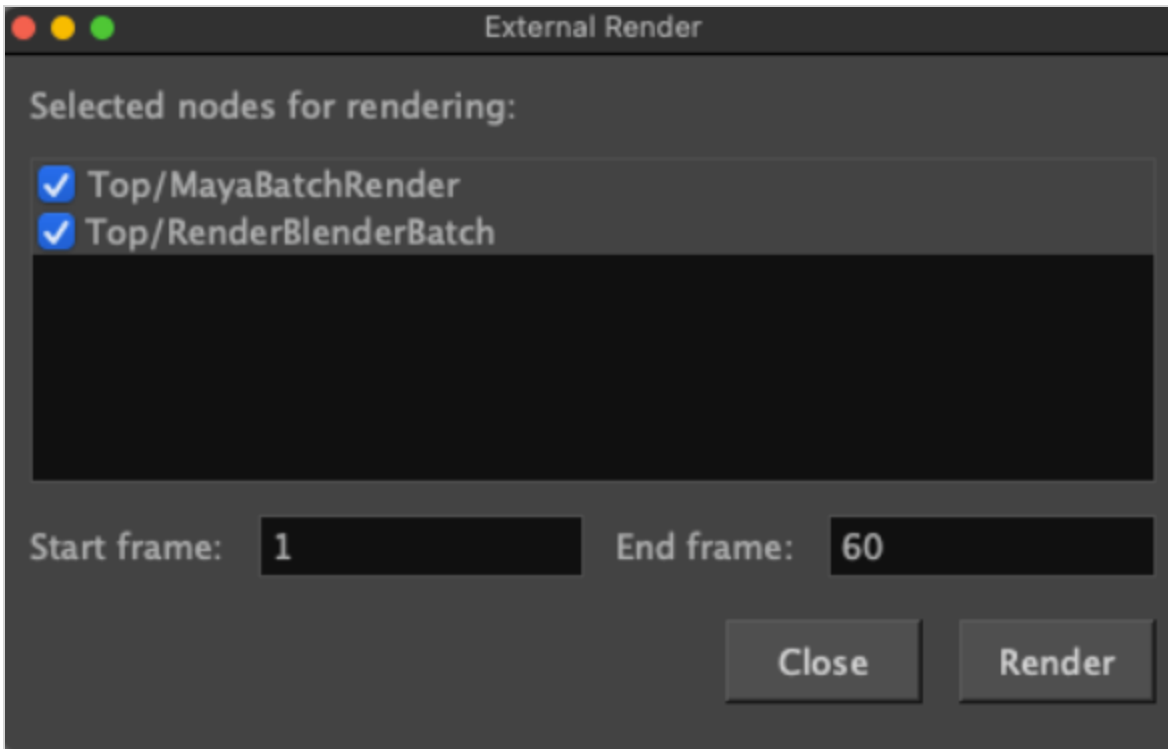
<https://docs.toonboom.com/help/harmony-22/premium/3d-integration/set-3d-renderer-path.html>

And how to copy original models in the scene: <https://docs.toonboom.com/help/harmony-22/premium/3d-integration/prepare-project-directory.html>

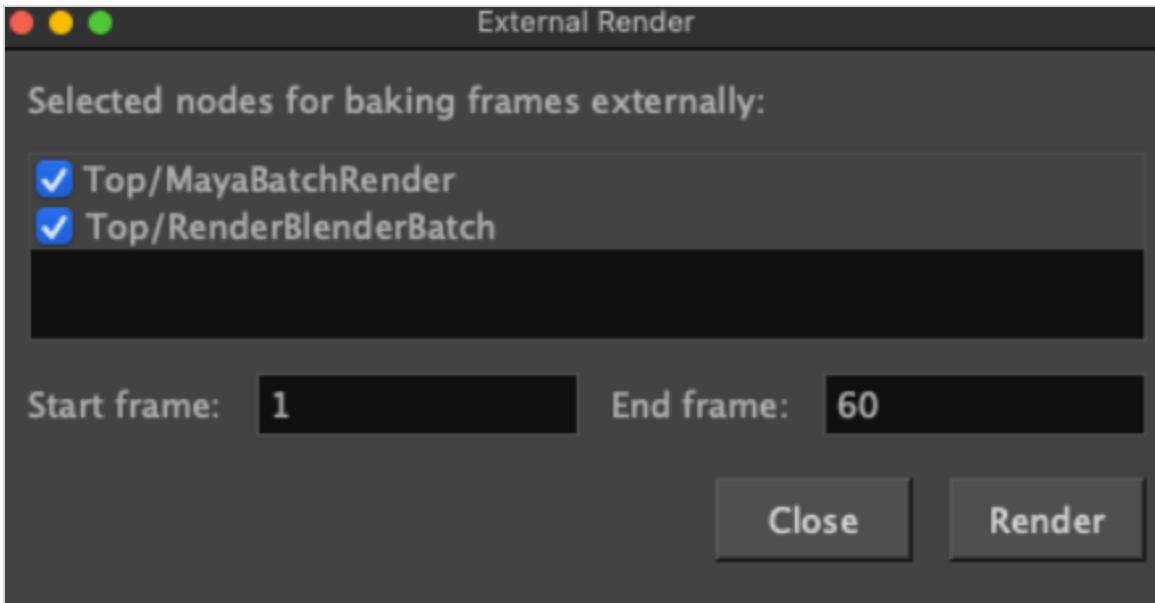
New External Rendering Toolbar

The new “External Rendering” toolbar has been added to help manage renders from external 3D Applications.

Render Nodes: This button opens a dialog which lists the selected nodes and allows rendering Maya and Blender render nodes to their respective cache.



Bake Nodes: This renders the selected nodes, imports the rendered frames in the scene and connects the associated element nodes in the node graph.



Bake to external Project: Non functional for now.

Cancel Renders: Non functional for now.

Improvements to Drawing Tools on 3D Planes

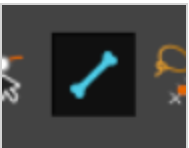
Improvements to the drawing tools allow them to work more predictably on a 3D plane that is rotated up to 60 degrees from the camera view plane.

The tool cursor will automatically change to a "Forbidden cursor" to provide feedback and disallow activity whenever it goes into a region that will introduce instability and poor results.

Posing and animating characters built with deformation rigs

Characters built with bone armatures can now be posed and animated in Harmony by manipulating their bones. Bone armature must be compatible with FBX.

To see and manipulate bones, enable the Bone Selection Mode in the Transform tool properties.



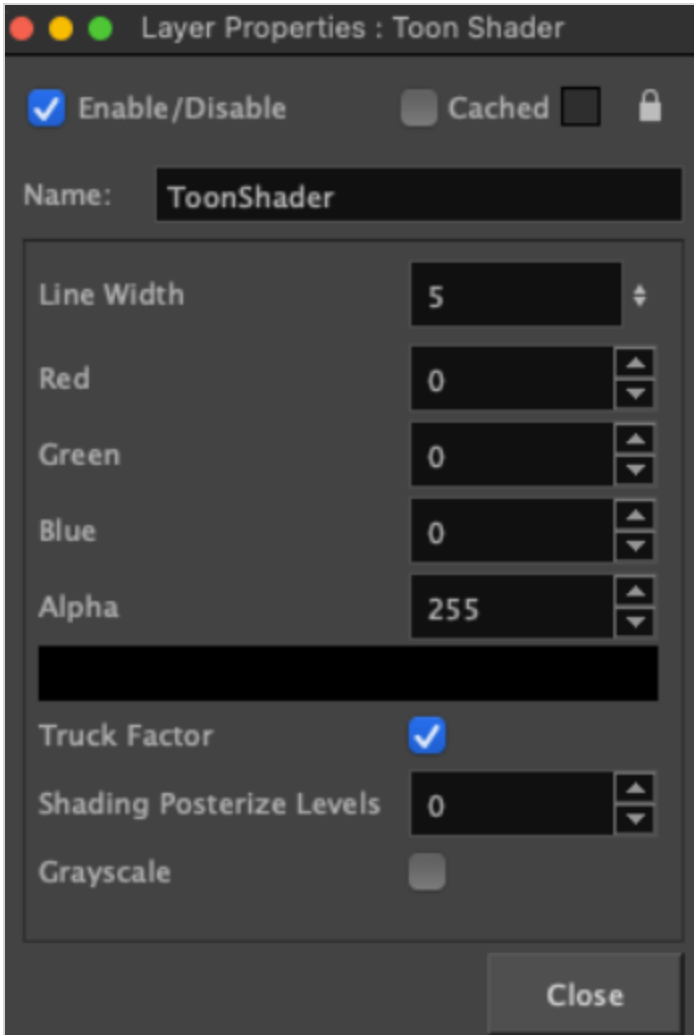
To select bones with the Transform tool, hold the CTRL (command) key and click the bone. Use the manipulator that appears to rotate, scale or offset the bone.

Bones can also be selected directly in the 3D Graph view.

Use a subnode animation node under the FBX's node to animate the values of the bones.

Toon Shader Effect Node

The new Toon-Shader node can be used to provide a simple Toon Shader render of 3D models that blends in with the style of 2D animation. It draws a line around each of the geometries and can posterize the colours to provide a cel shaded look.



Line Width: Defines the line width of the contour line. This value is scaled to match the corresponding line width of the drawing tools on a default layer at the default camera position.

Red, Green, Blue and Alpha: Defines the colour of the contour line, with RGBA (8 bit) values.

Truck Factor: When enabled, the line weight is applied in relation to the distance of the drawing layer from the camera.

With the Truck Factor on, the line weight will change relative to the view position and the render plane's position – the line should appear as if it is drawn on the plane of the object's input matrix. If the object is moved away from the viewed position, the line appears smaller.

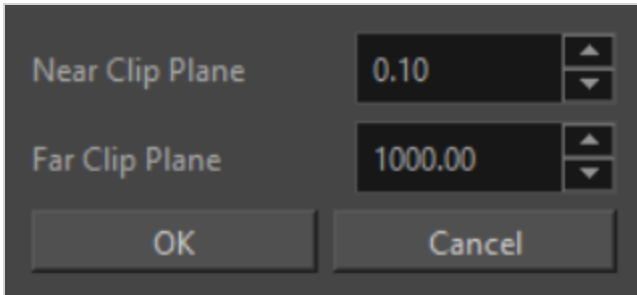
With the truck-factor off, the line weight will remain consistent relative to the rendering camera. It should appear as if it is being rendered on the device/viewport. If the object is moved away from the rendering camera, the line does not change in thickness.

Posterize: Applies a posterization effect, limiting the output of colours in the render to the given value. If the value is 0, no posterization is applied.

Greyscale: Converts the output to grayscale, with perceived luminance weighting.

Perspective View Clipping Planes

In the Perspective view View menu the new Clipping Planes dialog allows the near and far clipping plane distances to be changed interactively.

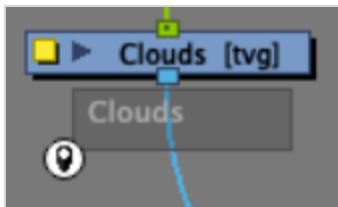


Effects and Compositing

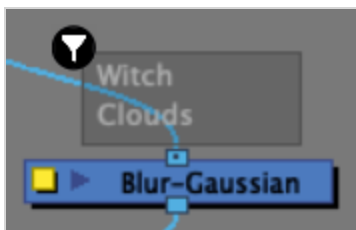
Port Naming and Filtering in the Node View

To simplify Node connections in the Node view, Out Ports on nodes can now be tagged which allows using filters on In Ports downstream in order to request the image coming from those named ports, instead of pulling a cable to access the image.

1. To name an out port, right-click on the node that is to be filtered and select “Port Names > Add Named Out Port” from the menu, then type the desired name.



2. To apply a filter to a downstream node, right-click on the node or the specific in port and select “Port Names > Add Filter to In Ports”, then select or type the name of the port you want to target.



Only the image information coming from the ports added to the list will be received by the node. All other images will be filtered out.

The following addition modes are available when by clicking the icon of the in port filter:

Matte mode: Renders the image in a way that cuts it against all of the other image content that would appear above it.

Inverted: Inverts the filter to match everything but the provided name.

Apply to Matte Port: Generally, the filter is removed through the matte port of a node. This mode will force mattes to match the filter name as well.

Apply to Effects: When disabled, effects above are rendered normally on the requested image. When enabled, effects above will be ignored and will not be rendered.

Reading Cryptomatte IDs from EXRs images

Cryptomattes IDs can be read from an EXR file using the new CryptoMatte node. Once connected under a node reading an EXR file that contains Cryptomattes IDs, the list of all the ID mattes will appear as a list in the Available CryptoMatte IDs section of the CryptoMatte node. ID mattes can be added to the Selected CryptoMatte IDs section using the arrow key, or by using the Eyedropper from the node and selecting the desired matte from the image in the Camera view.

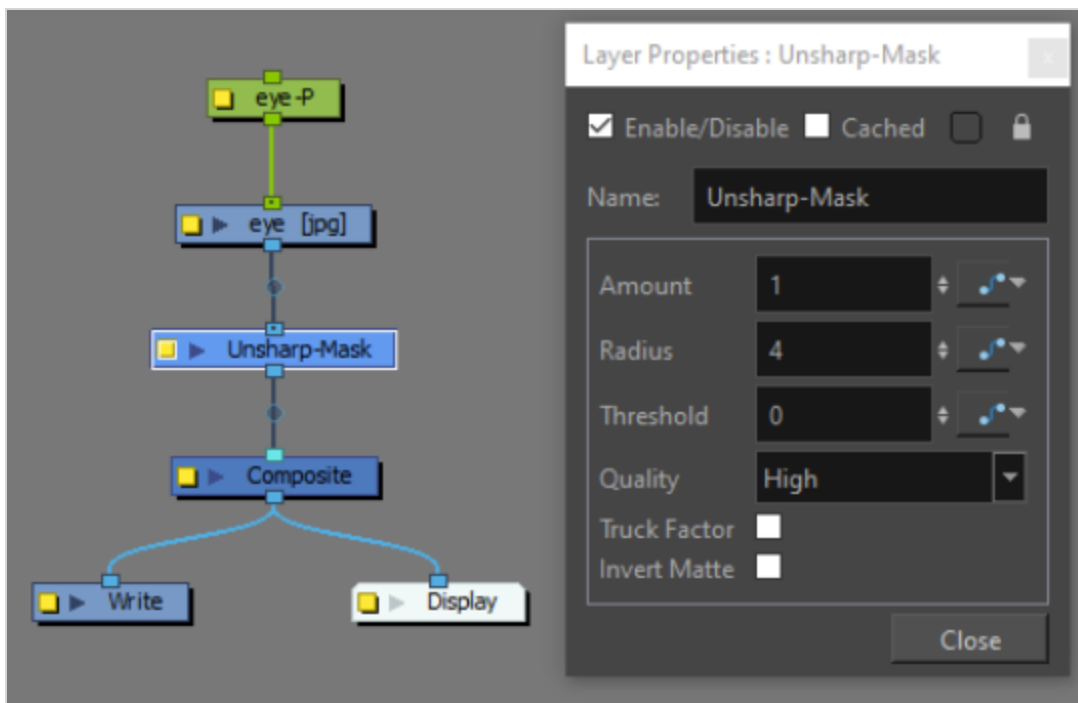
Writing Cryptomatte IDs to EXRs images

CryptoMatte IDs can be written in EXR files by using the CryptoMatte Write node. CryptoMatte named passes are generated based on the named output ports of the nodes that are above in the node graph. This module behaves in the same manner as a Multi-Layer Write node, which allows for multiple named inputs to be added as input of the node. The rightmost port is always used as the overall composite of the resulting EXR file, and subsequent port attachments will be used as custom named-ports in the EXR's output. The CryptoMatte passes generated using the named ports above the CryptoMatte write node will only be generated through the node's rightmost port.

Unsharp Mask Effect Node

The Unsharp Mask name comes from a traditional darkroom technique used to create contrast and sharpen the edges within an image by using a blurred version of the source. The effect in Harmony behaves and creates similar results to the Unsharp Mask filter in Photoshop.

You can find a description of the unsharp masking technique and the node properties on Wikipedia as they are applied in Harmony.



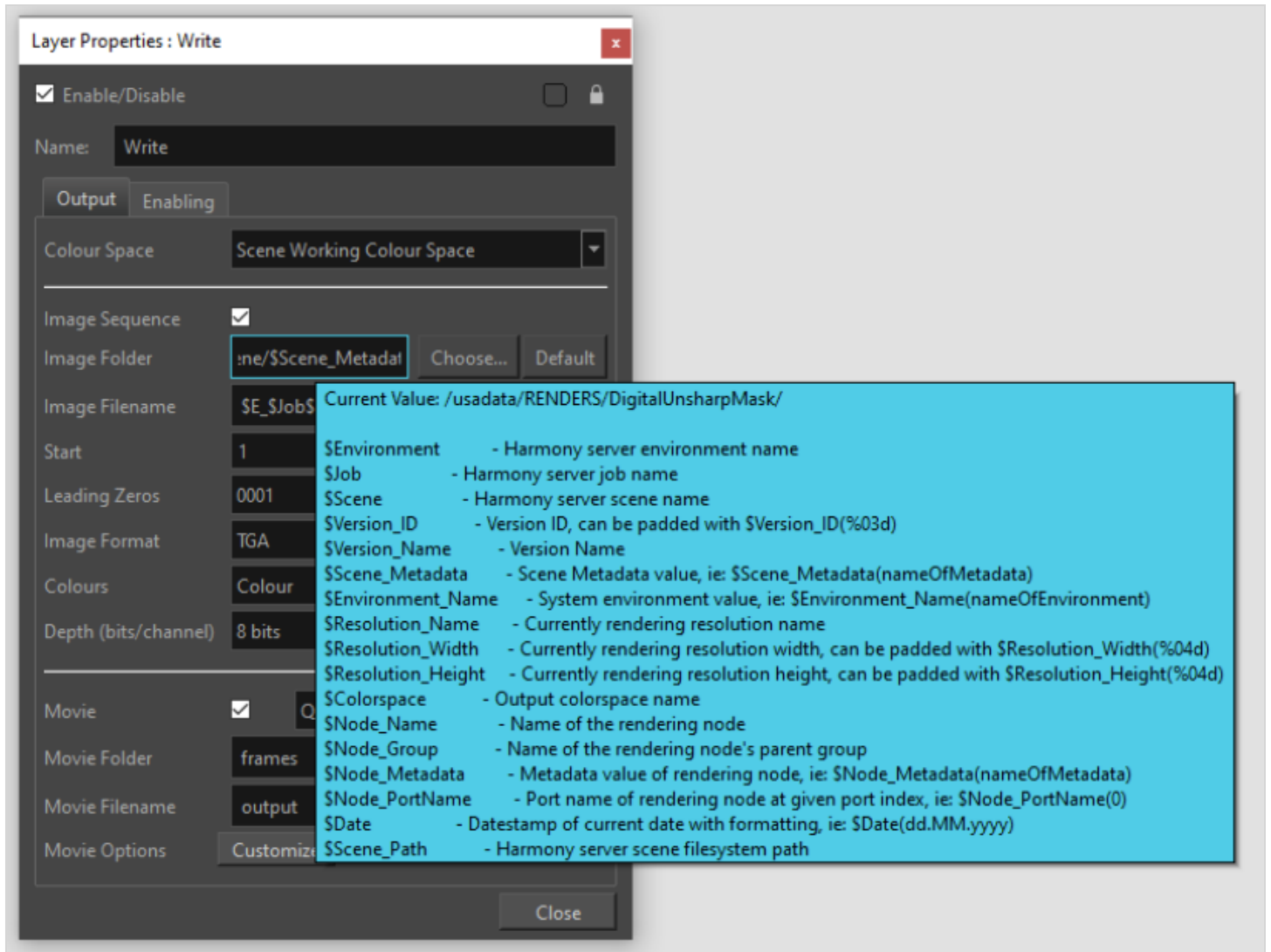
Channel Swap Depth Channel

The Channel Swap node now allows using the Depth information as input values for colour channels. As the values from the Depth channel represent position on the Z axis, the values need to be adjusted to a range that fits between 0 and 1 using either a Colour Levels or Colour Curves effect node.

This effect only works when using 32-bit processing bit depth.

Write Variables to Set Paths and Filenames

The Image Folder and Image Filename, Movie Folder and Movie Filename fields in the Write node can now use variables to set custom paths and filenames when rendering. Hover over the fields to pop up a tooltip with the list of available variables.



Variables	Description
\$Environment	Harmony server environment name
\$Job	Harmony server job name
\$Scene	Harmony server scene name
\$Version_ID	Version ID, can be padded with \$Version_ID(%03d)
\$Version_Name	Version Name
\$Scene__Metadata	Scene Metadata value, i.e: \$Scene_Metadata(nameOfMetdata).

\$Environment_Name	System environment value, ie: \$Environment_Name(nameOfEnvironment).
\$Resolution_Name	Currently rendering resolution name.
\$Resolution_Width	Currently rendering resolution width, can be padded with \$Resolution_Width(%04d)
\$Resolution_Height	Currently rendering resolution height, can be padded with \$Resolution_Height(%04d)
\$Colorspace	Output colorspace name
\$Node_Name	Name of the rendering node
\$Node_Group	Name of the rendering node's parent group
\$Node_Metadata	Metadata value of rendering node, ie: \$Node_Metadata(nameOfMetadata)
\$Node_PortName	Port name of rendering node at given port index, ie: \$Node_PortName(0)
\$Date	Datestamp of current date with formatting, ie: \$Date(dd.MM.yyyy).
\$Scene_Path	Harmony server scene filesystem path.

In most cases, if the variable is provided in all upper-case or all lower-case, the resulting value will match, i.e. a Scene named "Test", requesting the variable \$SCENE will be "TEST", and \$scene will be "test".

In the case of variables with options (Scene_Metadata, Environment_Name, Node_Metadata and Node_PortName), if the option requested doesn't exist, a fallback option can be provided in brackets, i.e. \$Environment_Name (DoesntExist,Fallback) will result in "Fallback" being used when the DoesntExist isn't defined in the system's environment.

Database and Pipeline Integration

Update to OpenColorIO 2.2.0

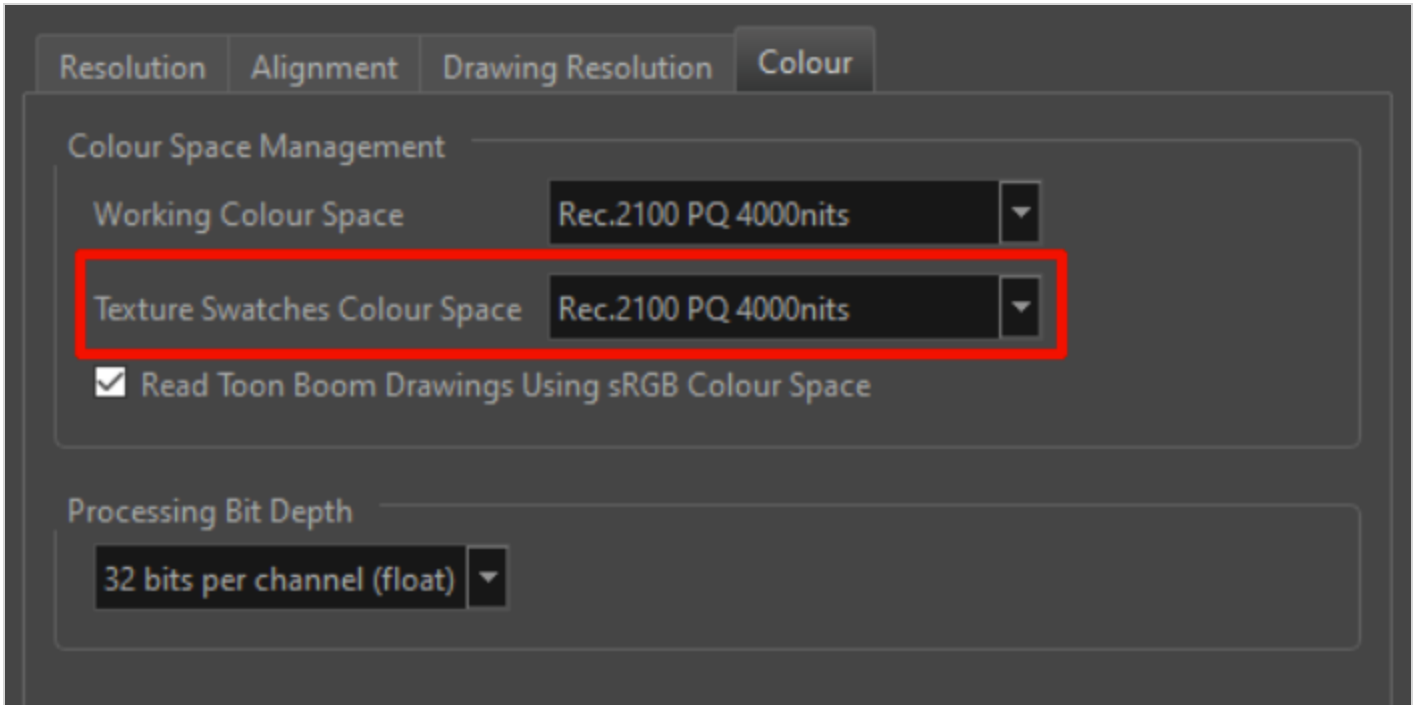
The updated version of OpenColorIO in Harmony 24 provides faster conversions between colour spaces and out-of-the-box support for ACES, 4000 nits and other HiDPI colour profiles in the scene, drawing layers, bitmap images, previews in the Camera view and rendered images.

The Display Colour Space preference in the Camera tab of the Preferences dialog has been removed. You should now rely on the colour space selector in the status bar of the Camera OpenGL view.

Support HDR colour textures for TVG

Harmony now supports importing 16-bit and 32-bit-float textures in the palette or when vectorizing an image as a texture in a drawing (Colour As Texture).

A new scene setting was added to select which colour space is to be used to read textures from the palette before converting them to the scene's working colour space.



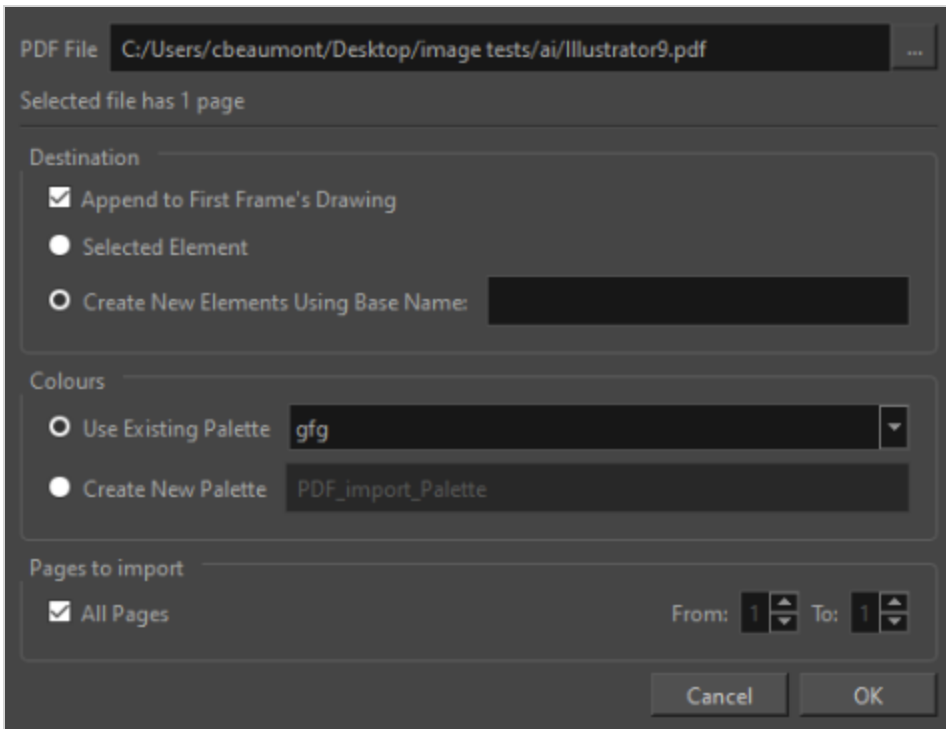
Importing Multi-layer EXR Files

You can now import a multi-layer EXR file into Harmony using the File -> Import -> Images dialog. This behaves in a similar way as when importing layers from a PSD file. When you import an EXR you are prompted to choose to import as a single layer or multiple layers.

Import Vector Dialog

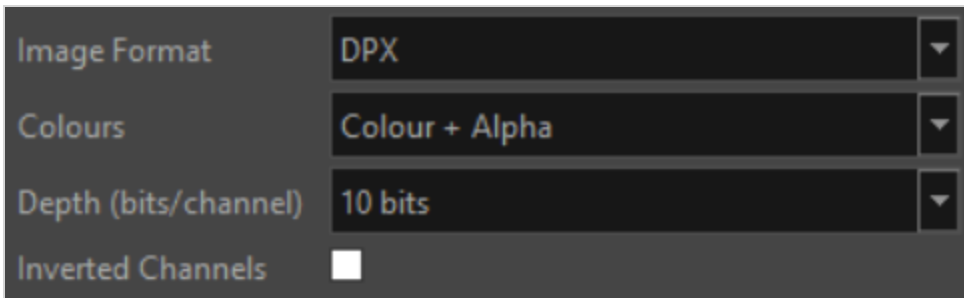
Importing PDF and AI files in the Library view is no longer available, instead the import options have been moved to the new File > Import > Vector File... dialog.

The SVG file type has also been added to the import dialog.



DPX Alpha Channel Support

The DPX image format in the Write node and in File > Export > Export Layout Image dialog now has alpha channel support.



Import as new version option when importing scenes

To avoid overwriting existing scene versions when a scene has been modified offline, an option was added to Control center and WebCC. Importing a scene when this option is enabled, will create new versions of the scene when importing modified versions of the scene in the database.

In Control Center, the option is named “Import as new version” and is available in the Import Scene window.

To use this option with WebCC, the WebCC service must be launched with the “-importNewVersion” option.

General

Support for CentOS Stream 9

Harmony 24 now supports CentOS Stream 9.

Toon Boom Harmony 24.0.2 Release Notes

Some libraries may be required to be installed such as `yum install -y jbigkit-libs.x86_64`

Fixes

Drawing Tools

- Missing refresh in the Camera view and Tool Properties when nudging points with the Pencil Editor. *HAR-8829*
- Creating a new color with a drawing tool selected does not change color for other drawing tools. *HAR-9132*
- Commands to Flip and Rotate don't transform the selection from the position of the select tool's pivot. *HAR-8757*
- Copy & pasting will change the drawing tip end of pencil lines when the parent peg has a transformation. *HAR-9434*
- Deformations applied to small brush lines result in straight lines instead of nice curves in soft render. *HAR-6579*

Effects and Compositing

- Particles are not rendered at the proper size when the FOV is not set to vertical. *HAR-9325*
- Onion skins are not shaded when a combination of cutters and passthrough composite nodes are used if "Enable passthrough for all effects" is enabled. *HAR-9583*
- Onion Skins are not rendered properly with some scenes. *HAR-8863*
- Copy-paste loses the transformation names on Transformation switches. *HAR-9313*
- "Group Selection with Composite" does not keep the cables in the same order. *HAR-9329*

Timeline

- Shortcut for Toggle Solo Mode in the Timeline doesn't work. *HAR-6827*
- Harmony may hang if the Stop frame is changed during playback. *HAR-8994*
- Image Switch layers can not be Tagged. *HAR-6516*

Library

- Can't navigate through a Windows Shortcut when browsing to select a folder as a library on Windows. *HAR-8807*
- Dropping a bitmap from the Library does not use Harmony's transparency preferences. *HAR-9252*

Import PSD

- PSD files cannot be imported as Individual Layers if Transparency Type preference is set to Straight. *HAR-9314*

Rendering

- Bitmap Image Quality (small bitmap) resets to default value when changing the position of an image. *HAR-9027*
- BMP with transparency/alpha (BMP4) are not written with alpha. *HAR-9201*
- Scenes with textures are slower to render when rendering to smaller resolutions. *HAR-7194*

WebCC

- WebCC cannot import a package that contains more than 35 scenes. *HAR-9477*

Xsheet

- [Mac] Column headers' text is hard to see in the Xsheet view and invisible in the light theme. *HAR-8318*

Database

- Database scenes that have a custom path cannot be copied using Control Center. *HAR-6386*
- Version 2 locks for drawings are not listed properly by dblock. *HAR-7884*