# Harmony21

# Toon Boom Harmony21

## Release Notes

# Legal Notices

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## Publication Date

10-03-2023

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# Table of Contents

# Toon Boom Harmony 21.1.1

Harmony 21.1.1, build 21622 (2023-06-13)

> ⚠️ **IMPORTANT**
>
> If your studio uses a license server, you will need to upgrade your license server to Harmony 21.1 or Storyboard Pro 20.1.
>
> Even though licenses from Harmony 21 can be used to run Harmony 21.1, the server running the license server needs to be upgraded to Harmony 21.1 to support client workstations running Harmony 21.1. Licenses from servers using earlier versions of Harmony cannot be used to run Harmony 21.1.

## Improvements

The following improvements are in this release of Harmony and later.

### Scripting

- Since updating to Qt 6 for Harmony 21.1.0 some Qt classes that were part of the QtScriptBinding packaged in previous versions of Harmony were either deprecated, replaced or were not included in Harmony 21.1.0. All the missing Qt classes are now packaged with Harmony 21.1.1. *HAR-8463*

- Scene version description can now be queried and set using `scene.Description` and `scene.setDescription` from the Harmony scripting interface. The description can also be set when importing a scene through Control Center using **ImportData.impDescription**. The description text is limited to 200 UTF-8 characters. *HAR-8792*

- The `scene.closeSceneAndOpen` JavaScript function has a new isReadOnly parameter which allows opening a scene in read-only mode. For example using **scene.closeSceneAndOpen( "Env"**, **"Job"**, **"Scene01"**, **"1"**, **true**); will close the current scene and open Scene01 in read-only mode. This can only be used when a scene is opened in Harmony from the database. *HAR-9042*

- The TB_MayaBatchRenderModule.js script has been modified to support renders using the 3Delight render plugin for Maya. *HAR-9148*

### Utilities

- The utransform utility now has the ability to print and clear metadata from a TVG using the **-print_meta_data** and **-clear_meta_data** options. *HAR-8421*

## Fixes

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

## General

- Copying multiple synced layers from one instance of a character to another may cause new drawings to go missing. *HAR-8899*

- The Transform tool bounding box is at the wrong position when using bitmap drawings with weighted or freeform deformers. *HAR-7787*

- Transform tool bounding box is at the wrong position when a Deformer is used with an Element node that has an offset. *HAR-8464*

- Harmony freezes when trying to read a TVG that has metadata. *HAR-8409*

- [macOS] When running in Japanese the Licence Wizard may crash when installing the licensing service. *HAR-8694*

## Drawing Tools and Workflow

- The Stroke tool's Draw Stroke as Straight Lines and Connect Line Ends options don't work. *HAR-8416*

- Harmony may crash when rotating a drawing using Ctrl+7 (command+7 on macOS) while the select tool is active. *HAR-9118*

- Rare crash when using the Stroke tool. *HAR-9123*

- Random crashes in the Pencil Editor tool. *HAR-9126*

- The Drawing view sometimes doesn't refresh when changing the selected drawing in the Drawing view Desk using the F and G shortcuts. *HAR-9073*

- Preference "Light Table: Shade in Camera View" is not saved. *HAR-9075*

- [Linux] The Colour Picker eyedropper tool always shows RGB values 0, 48, 57. *HAR-8778*

- Zoom and rotate keyboard shortcuts can be used while drawing. *HAR-9077*

- The Contour Editor creates loops when snapping adjacent vertices. *HAR-9131*

## Reference View

- Layers cannot be dragged from the Timeline to Reference (Model) View. *HAR-8323*

- Shortcut to change to the Select tool does not work in the Reference View. *HAR-9094*

- Drawings in the Reference View don't update when colours are changed using the Colour Picker. *HAR-9076*

## Xsheet

- Rare and random crashes in Xsheet UI. *HAR-9125*

## Timeline

- When the 'Snap Keyframe' preference is enabled, copying and pasting a keyframe in the Timeline may cause a crash. *HAR-9199*

- A layer set to Outline Mode in the Timeline always displays black in the Camera view. *HAR-8573*

## Nodes and Node View

- Harmony may crash when typing in the Node View's Quick insert. *HAR-8850*

- The Auto-Patch node may cause a crash when rendering and changing frames if thumbnails are displayed in the Node View. *HAR-9255*

- Elements and drawings are duplicated when cutting and pasting element nodes in the Node View. *HAR-9078*

## Master Controllers

- Adding or deleting rows and columns does not work from the Master Controller Grid Wizard. *HAR-8564*

## Import / Export

- PSD files saved with Adobe Photoshop 2021 or later are blank once imported. *HAR-8835*

- Harmony crashes when exporting a layout image to a PSD file. *HAR-8512*

- [Windows] PNG image files cannot be written to folders that have non-english characters in their name. *HAR-8902*

- Renaming a palette does not flag the palette list as modified, causing the palette not to be saved. *HAR-9179*

- The Multi Layer Write node may cause adjacent drawing substitutions to composite in the same frame when exporting the Render Write Nodes. *HAR-8228*

## UI

- [Linux] Focus On Mouse Enter doesn't always work. *HAR-9095*

- Focus on Mouse Enter does not always work when the mouse is quickly moved over to an OpenGL view. *HAR-8218*

- Korean characters are not being typed in correctly. *HAR-9080*

## Performance

- Top and Side views take a long time to refresh while thumbnails are being rendered. *HAR-8760*

## Rendering and Pipeline Integration

- Workstations that don't have a GPU may not have the OpenCL libraries installed and will fail loading plugins that use OpenCL for GPU rendering, such as blurs. *HAR-8693*

- Harmony may become unresponsive for a while when rendering asset snapshots for Toon Boom Producer. *HAR-8817*

- [macOS] Harmony is unable to save scenes on filesystems that do not support hard links such as LucidLink cloud NAS. *HAR-8806*

- The Hold-Timing node causes OpenGL refresh issues and a possible crash. *HAR-9161*

- The "Tile Horizontal" or "Tile Vertical" options of element nodes do not tile properly in OpenGL. *HAR-8524*

- When overwriting an existing movie file fails because it is opened or locked while batch rendering, Harmony will write the movie with a unique name using the date and time. *HAR-9133*

## Database / Control Center

- Control Center doesn't update the filesystem when using the Move command to move the scene to a custom path. *HAR-6371*

- Palettes are locked during batch renders if colours are being recovered. *HAR-8536*

- When 'Update Database Scene' fails the error reporting is uninformative and sometimes wrong. *HAR-8843*

- Harmony randomly crashes when running specific scene setup scripts. *HAR-8838*

- Using the 'Update Database Scene' command can corrupt the scene in the database if the scene was changed since it was exported offline. To address this issue, a new dictionary file named export.dict has been added to Harmony 21.1.1. The export.dict file will have to be manually copied to the /USA_DB/dicts/ folder in existing Harmony databases. New databases created using Harmony 21.1.1 have the new dictionary file. *HAR-8858*

- Link Server does not start on Linux if X Window System is not running. *HAR-8563*

- Importing scenes in batch mode crashes Control Center if the scene already exists. *HAR-8503*

- WebCC stops responding to database requests if inactive for 48 hours. *HAR-9114*

- The Control Center doesn't save the 'Get rights to modify all assets' setting for environments. *HAR-9074*

## Scripting

- **QByteArray** cannot be constructed with a string as its constructor's argument. *HAR-8497*

- Invisible plus (+) and minus (-) buttons in **TB_ExportToEaselJS**, **TB_ExportToSpriteSheets** and **TB_SelectionPreset**. *HAR-8500*

# Toon Boom Harmony 21.1

> ⚠️ **IMPORTANT**
>
> If your studio uses a license server, you will need to upgrade your license server to Harmony 21.1 or Storyboard Pro 20.1.
>
> Even though licenses from Harmony 21 can be used to run Harmony 21.1, the server running the license server needs to be upgraded to Harmony 21.1 to support client workstations running Harmony 21.1. License from servers using earlier versions of Harmony cannot be used to run Harmony 21.1.

Here is the list of changes in Harmony 21.1, build 21.1.0.18394 (2022-05-04):

| Feature | Description |
| --- | --- |
| Apple silicon support | The macOS version of Storyboard Pro is now compiled as a Universal 2 binary that runs natively on either Intel processor and ARM64-based Apple silicon Macs. |
| Retina and HiPDI screen support | Retina and HiDPI screens are now fully supported. The content of the Stage and Camera views are now displayed at each screen's native resolution. |
| JavaScript Python Plugin | The JavaScript Python bridge, used by PythonManager and PyObjectWrapper, has been updated to Python 3. If you have python scripts using the bridge, they must be updated to Python 3. The Python bridge now requires Python 3.9 or later to be installed. |
| JavaScript Qt API | The Qt API used by Harmony has been updated from version 4 to version 6. Qt classes and function names have been updated to use Qt6 naming. |

## Fixes

The following issues have been fixed in this release of Harmony:

### General

- Shift+B to navigate down the hierarchy blocks when reaching a Transformation Switch node. *HAR-7886*

- Loading a keyboard shortcut set makes default shortcuts stop working. *HAR-8025*

- The Remove Unused Palettes dialog lists palettes that are used in the scene and allows deleting them. *HAR-7889*

- Scene locks are not always released when closing Harmony. *HAR-8092*

## Drawing Tools

- Strokes are offset when drawing if a constraint node and a peg apply are used on the drawing element. *HAR-8048*

- *Textures in brush lines repeat near the stroke's edges if a pencil line was displayed during the session. HAR-7985*

## Camera View

- Kinematic-output does not work when there is an auto-fold, auto-muscle or fold node in the chain. *HAR-7935*

- Onion skins don't work with deformers. *HAR-7856*

- IK Tool does not work properly. *HAR-7968*

- Influence regions on deformers cannot be modified. *HAR-7879*

- The last segment of an envelope deformer does not deform properly when rotating. *HAR-8220*

- Colour Scale effect is not visible in OpenGL when connected directly under an element node. *HAR-7993*

- Colour Overrides and Colour Selectors effects are applied to drawings connected to Animated Matte Generator in the OpenGL views. *HAR-7766*

- Pencil texture disappears in OpenGL when modifying a colour pot. *HAR-8065*

- Scenes with many deformers may cause a crash when Camera View Performance Report is enabled in the preferences. *HAR-8181*

- Show Drawing Outline does not work when using the Shift and Trace tool. *HAR-8040*

## Library

- Thumbnails are displayed with the wrong aspect ratio in Library folders. *HAR-8071*

## Node View

- *Dragging a node cable to the left of an existing group port while holding ALT does not create a new port. HAR-7626*

- *Selecting nodes in the Node view using CTRL+A/command+A is critically slow since version 20. HAR-8223*

## Rendering

- Random drawings missing in renders when using multiple rendering threads. *HAR-8225*

- Poor quality when rendering movies using OpenH264. *HAR-7877*

- Weighted Deform sometimes produces incorrect results when rendering in batch. *HAR-8139*

- Harmony crashes when rendering OpenEXR files using a Multi-Write node. *HAR-8039*

- The Directional Blur effect can be very slow when used with empty images. *HAR-7990*

## Control Center and WebCC

- Importing multiple scenes in the same operation is critically slow. *HAR-8020*

- Modifications to statuses are not saved in WebCC. *HAR-8081*

- Render Queue does not update the proper job when a WebCC preview render is already in the Queue. *HAR-7704*

## Scripting

- Colour modifications done using `Color.setColorData` are not saved. *HAR-7998*

## Known Issues

- When there's not enough room for all the buttons in a toolbar, the extension that can be opened to access the buttons is hidden when it opens over an OpenGL view. *HAR-8186*

- Exporting to H.264 format is not available using the OpenH264 library on Apple silicon Macs. *HAR-8188*

- When using Harmony on Big Sur, Harmony may crash when saving a colour in macOS's native colour picker. *HAR-8032*

- On macOS Mojave, GateKeeper prevents launching Harmony unless the quarantine extended attribute is removed from the application bundle. The quarantine extended attribute can be removed using the following command in the Terminal:

```
sudo xattr -dr com.apple.quarantine "/Applications/Toon Boom Harmony 21.1 Premium"
```

# Toon Boom Harmony 21.0.5

Harmony 21.0.5, build 21829 (2023-08-04)

> **NOTE**
>
> This version of Harmony does not natively support the new Apple silicon processors (M1 and later). On systems using these new processors, this version of Harmony runs through Apple's Rosetta 2. This may cause compatibility issues when running on the new ARM-based macOS systems. For full compatibility with the new Apple silicon systems, use Harmony 21.1 or later.

> **NOTE**
>
> The Python plugin, which allows Python 2.7 scripts to be run from Harmony, no longer loads by default on macOS Big Sur and Monterey. You can force the Python plugin to load by enabling the FORCE_LOAD_PYTHON_SCRIPT hidden preference.

The following is a list of improvements and fixes in this release of Harmony and later.

## Improvements

### Scripting

- The **TB_MayaBatchRenderModule.js** script has been modified to support renders using the 3Delight render plugin for Maya. *HAR-9148*

## Fixes

### General

- "Unable to read" tvg file message appears when opening a scene that contains drawings that have been created on a system that has a license that dates back over 10 years. *HAR-9358*

### Rendering and Pipeline Integration

- When overwriting an existing movie file fails because it is opened or locked while batch rendering, Harmony will write the movie with a unique name using the date and time. *HAR-9133*

- The Hold-Timing node causes OpenGL refresh issues and a possible crash. *HAR-9161*

- Harmony may crash when rendering a gaussian blur that has its Repeating Edge Pixels option enabled. *HAR-9304*

## Timeline

- When the Snap Keyframe preference is enabled, copying and pasting a keyframe in the Timeline may cause a crash. *HAR-9199*

## Nodes and Node View

- The Auto-Patch node may cause a crash when rendering and changing frames if thumbnails are displayed in the Node View. *HAR-9255*

# Toon Boom Harmony 21.0.4

> **NOTE**
>
> This version of Harmony does not natively support the new Apple silicon processors (M1 and later). On systems using these new processors, this version of Harmony runs through Apple's Rosetta 2. This may cause compatibility issues when running on the new ARM-based macOS systems. For full compatibility with the new Apple silicon systems, use Harmony 21.1 or later.

> **NOTE**
>
> The Python plugin, which allows Python 2.7 scripts to be run from Harmony, no longer loads by default on macOS Big Sur and Monterey. You can force the Python plugin to load by enabling the FORCE_LOAD_ PYTHON_SCRIPT hidden preference.

Here is the list of improvements and fixes in Harmony 21.0.4, build 21148 (2023-03-21).

## Improvements

### Utilities

- The utransform utility now has the ability to print and clear metadata from a TVG using the `-print_meta_data` and `-clear_meta_data` options. *HAR-8421*

### Scripting

- Scene version description can now be queried and set using `scene.Description` and `scene.setDescription` from the Harmony scripting interface. The description can also be set when importing a scene through Control Center using `ImportData.impDescription`. The description text is limited to 200 UTF-8 characters. *HAR-8792*

- The `scene.closeSceneAndOpen` JavaScript function has a new *isReadOnly* parameter which allows opening a scene in read-only mode. For example using `scene.closeSceneAndOpen( "Env", "Job", "Scene01", "1", true);` will close the current scene and open Scene01 in read-only mode. This can only be used when a scene is opened in Harmony from the database. *HAR-9042*

## Fixes

### General

- Duplicated drawings may be lost when saving a scene if synched layers have the same base name. *HAR-8887*

- Copying multiple synced layers from one instance of a character to another may cause new drawings to go missing. *HAR-8899*

- Harmony may crash when typing in the Node View's Quick insert. *HAR-8850*

- The Transform tool bounding box is at the wrong position when using bitmap drawings with weighted or freeform deformers. *HAR-7787*

- Harmony freezes when trying to read a TVG that has metadata. *HAR-8409*

## Rendering and Pipeline Integration

- Harmony may crash with a memory corruption while rendering a scene in batch if a large number of rendering threads are used. *HAR-7875*

- Small or simple drawings are sometimes missing from rendered frames when rendering using multiple threads on fast processors. *HAR-9012*

- Workstations that don't have a GPU may not have the OpenCL libraries installed and will fail loading plugins that use OpenCL for GPU rendering, such as blurs. *HAR-8693*

- Harmony may become unresponsive for a while when rendering asset snapshots for Toon Boom Producer. *HAR-8817*

- [macOS] Harmony is unable to save scenes on filesystems that do not support hard links such as LucidLink cloud NAS. *HAR-8806*

## Database / Control Center

- Palettes are locked during batch renders if colours are being recovered. *HAR-8536*

- When 'Update Database Scene' fails the error reporting is uninformative and sometimes wrong. *HAR-8843*

- Locks can be taken on the root folder, preventing locks to any other folders in the database. *HAR-8556*

- Rendering through Control Center's scripting interface does not use the scene's default camera if it is not specified by name.  *HAR-8403*

- [Windows] WebCC does not start on a new Windows installation due to missing MSVCR120.dll in path. *HAR-8873*

- Harmony randomly crashes when running specific scene setup scripts. *HAR-8838*

- Using the "Update Database Scene" command can corrupt the scene in the database if the scene was changed since it was exported offline. To address this issue, a new dictionary file named export.dict has been added to Harmony 21.0.4. The export.dict file will have to be manually copied to the /USA_DB/dicts/ folder in existing Harmony databases. New databases created using Harmony 21.0.4 have the new dictionary file. HAR-8858

## Import / Export

- PSD files saved with Adobe Photoshop 2021 or later are blank once imported. HAR-8835

- [Windows] PNG image files cannot be written to folders that have non-english characters in their name. *HAR-8902*

## Performance

- Top and Side views take a long time to refresh while thumbnails are being rendered. *HAR-8760*

## Scripting

- `addNodeToSelectionNode,` `addNodesToSelectionNode` and `removeNodeFromSelection` in the selection class do not work with backdrops correctly. *HAR-8391*

# Toon Boom Harmony 21.0.3

This version of Harmony does not natively support the new Apple silicon processors (M1 and later). On systems using these new processors, this version of Harmony runs through Apple's Rosetta 2. This may cause compatibility issues when running on the new ARM-based macOS systems. For full compatibility with the new Apple silicon systems, use Harmony 21.1.

> **NOTE**
>
> The Python plugin, which allows Python 2.7 scripts to be run from Harmony, no longer loads by default on macOS Big Sur and Monterey. You can force the Python plugin to load by enabling the FORCE_LOAD_ PYTHON_SCRIPT hidden preference.

Here is the list of changes and fixes in Harmony 21.0.3, build 18334 (2022-04-14).

## Fixes and Changes

### General

- Kinematic Output nodes do not work when there is an auto-fold, auto-muscle or fold node in the chain. *HAR-7935*

- Onion skins don't work with deformers. *HAR-7856*

- IK Tool does not work properly. *HAR-7968*

- Influence regions on deformers cannot be modified. *HAR-7879*

- Loading a keyboard shortcut set makes default shortcuts stop working. *HAR-7865*

- The Remove Unused Palettes dialog lists palettes that are used in the scene and allows deleting them. *HAR-7889*

- Scene locks are not always released when closing Harmony. *HAR-8092*

- Shift+B to navigate down the hierarchy is blocked by Transformation-Switch nodes. *HAR-7886*

- Pencil textures disappear in OpenGL when modifying a colour pot. *HAR-8204*

### Camera View

- The last segment of an envelope deformer does not deform properly when rotating using the Show Manipulator option from the Deformation toolbar. *HAR-8220*

- Colour-Scale effect is not visible in OpenGL when connected directly under an element node. *HAR-7993*

- Colour changes from Colour Override and Colour Selectors are applied to drawings connected to Animated-Matte-Generator nodes in OpenGL renders. *HAR-7766*

## Drawing Tools

- Strokes are offset when drawing if a constraint type node and an Apply-Peg-Transformation node are used on the drawing element. *HAR-8048*

- Textures in brush lines repeat near the stroke's edges if a pencil line was displayed during the session. *HAR-7985*

## Control Center

- Importing multiple scenes in the same operation is critically slow. *HAR-8020*

- Hard links and symbolic links options do not work when importing scenes if the database is configured using a shortcuts.conf file. Files are copied instead of linked. *HAR-8018*

## Node View

- Dragging a node cable to the left of an existing group port while holding ALT does not create a new port. *HAR-7626*

- Selecting nodes in the Node view using CTRL+A/command+A is critically slow since version 20. *HAR-8223*

## Rendering

- Random drawings missing in renders when using multiple rendering threads. *HAR-8225*

- Poor quality when rendering movies using OpenH264. *HAR-7877*

- Weighted Deform nodes sometimes produce incorrect results when rendering in batch. *HAR-8139*

## Scripting

- Colour modifications done using `Color.setColorData` are not saved. *HAR-8112*

## Utilities

- Brush textures are ignored when copying a TVG to an art layer using utransform's Art Layer options. *HAR-7809*

- New keepTexture option available in Pix2vec's 4 colour vectorization *(-4colours)* to preserve brush textures. *HAR-7918*

# Toon Boom Harmony 21.0.1

Here is the list of changes in Harmony 21.0.1, build 21.0.1.17727 (2021-11-17):

- Fixes and Changes

This patch release of Harmony 21 addresses known compatibility issues with macOS Monterey (12.0.1).

Harmony does not natively support the new Apple silicon processors (M1 and later). On systems using these new processors, Harmony runs through Apple's Rosetta 2. This may cause compatibility issues when running on the new ARM-based macOS systems.

> **NOTE**
>
> The Python plugin, which allows Python 2.7 scripts to be run from Harmony, no longer loads by default on macOS Big Sur and Monterey. You can force the Python plugin to load by enabling the FORCE_LOAD_ PYTHON_SCRIPT hidden preference.

## General

- Harmony crashes when creating or opening a scene on macOS Monterey. *HAR-7677*

- Elements cannot be deleted using the Element Manager if used in more than one version of the scene. *HAR-7722*

- Harmony does not delete columns when deleting the nodes if "Delete Drawing Files and Element Folders" is unchecked. *HAR-7712*

- Custom shortcuts don't work if changed in more than one shortcut set. *HAR-7717*

- Volume objects disappear from the Normal Map and Shading Map nodes when Harmony is running in Japanese or Chinese. *HAR-7631*

- "Default Pass Through Composite" preference is missing when Harmony is running in Japanese or Chinese. *HAR-7829*

- Frames are held and skipped when importing movies with 23.976 frame rate. *HAR-7709*

## Drawing Tools

- Drawings on bitmap layers do not follow interactively when editing them using the select or cutter tool in the Camera view. *HAR-7716*

- Snapping a stroke drawn with the Polyline tool to an existing pencil line resets its width. *HAR-7837*

## Camera View

- The Transform tool's pivot resets its position when pressing the space bar to switch to the Hand tool. *HAR-7682*

- Animated Matte Generator is offset in OpenGL when there's a colour card on the composite. *HAR-7714*

- Cached images from Pre-render Cache nodes should not be used in OpenGL. *HAR-7738*

- The Camera view does not update automatically after rendering cached frames from the Pre-Rendered Cache node. *HAR-7739*

- Lens Flare effect renders as opaque white shapes in OpenGL. *HAR-7635*

- Deformer manipulators don't follow the mouse when the camera is rotated in 3D space. *HAR-6917*

## 3D

- The wrong layer is selected when selecting with the Transform tool in the Camera view when there is a 3D model on a 2D composite. *HAR-7681*

- Selecting a 3D model by making a lasso or marquee selection does not work. *HAR-7678*

- Z-fighting in camera view or perspective view when rotating in 3D. *HAR-7693*

## Rendering

- Random black frames in movies when rendering scenes with static images. *HAR-7676*

- RGB values can be off by 1 when rendering in PNG 8-Bit image format. *HAR-7764*

- Deformations are ignored in software render when there is an Apply-Image-Transformation node below. *HAR-7782*

- Applying transformations to textures using a Colour Override node does not work. *HAR-7760*

- The Gaussian Blur effect should only mirror pixels that are outside the camera frame when the "Repeat Edge Pixels" option is enabled. *HAR-7623*

- Toggling the "Repeat Edge Pixels" option in the Gaussian Blur effect node does not update the Render preview immediately. *HAR-7622*

- Harmony crashes when exporting a scene with audio in H.264 or Apple ProRes format on macOS 10.13 (High Sierra). *HAR-7654*

- Invalid images are written when certain effects nodes receive an empty cel from the node above. *HAR-7718*

- Exported SWF files are empty. *HAR-7834*

- Harmony on Windows may crash when rendering a specific drawing drawn with brush textures. *HAR-7413*

## Symbols

- The Transform tool manipulator only appears around one instance if the same symbol is used multiple times. *HAR-7729*

- Transformations from a parent on a symbol only considers the first keyframe in OpenGL. *HAR-7719*

- The Transform tool manipulator of symbols is only accurate if the frame exposed in the timeline is the same as the one in the symbol. *HAR-7720*

- Only one instance of a symbol appears in OpenGL when the symbols are connected to cutter nodes. *HAR-7724*

- Symbols cannot be selected by clicking them in the Camera view. *HAR-7652*

- The top level of a scene does not update automatically in OpenGL when making changes in the node graph inside a symbol. HAR-7750

- Editing a symbol resets the current frame of the scene to 1. *HAR-7679*

- Transformations on symbols are not applied to all frames in OpenGL. *HAR-7651*

## Control Center

- Importing scenes that are in database format do not work properly when using Control Center in batch mode. *HAR-7817*
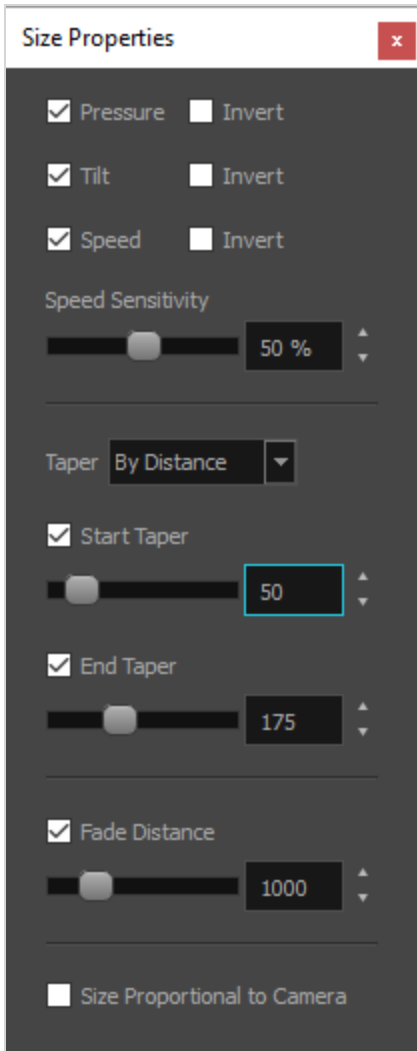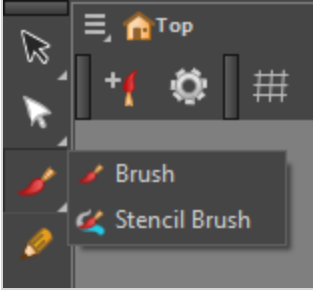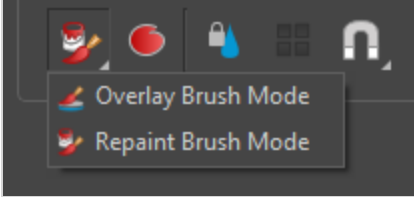
# Toon Boom Harmony 21

Here is the list of changes in Harmony 21, build 21.0.0.17367 (2020-09-01):
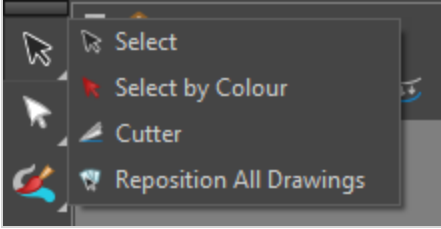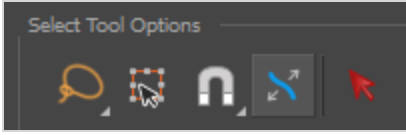
- [Drawing Tools](#)

- *[Timeline](#)* on page 23

- [Animation](#)

- [Camera and Compositing](#)

- [Rendering and Pipeline Integration](#)

- [Performance](#)

- [Game Pipeline](#)

- [Library](#)

- [WebCC](#)

- [Scripting](#)

- [Search Filter Improvements](#)

- [Fixes](#)

    - [Drawing Tools](#)

    - [Animation Tools](#)

    - [Timeline](#)

    - [Node view and Compositing](#)

    - [Master Controllers](#)

    - [Library](#)

    - [3D](#)

    - [Control Center](#)

    - [Scripting](#)

    - [Others](#)

## Drawing Tools

| Feature | Description |
|---------|-------------|
| New Brush Tool Parameters | To give you more control over the look and feel of the brush tool, new options are available to dynamically control the size, flow, opacity and brush tip angle when using a drawing tablet. |

| Feature | Description |
|---|---|
| | **Size, Flow and Opacity** |
| | • Pen tilt and drawing speed can now be used as inputs to change the Size, Flow and Opacity properties of brushes, making it possible to control the size and the opacity of brushes independently while drawing. You are not limited to using the pressure for both. |
| | • Fading and tapering parameters can also be used to increase or decrease the value of these properties based on the length of strokes. The additional properties are in a new window found by clicking the arrow next to those properties. A combination of multiple inputs can be used to control a single property. |
| | <br>**Brush Tip Orientation** |
| | • The orientation of the brush tip can now be dynamically controlled using more than just the Wacom Art pen twist. A new drop-down list, in which you can select between Constant, Heading, Azimuth and Twist, is now available next to the Angle |

| Feature | Description |
|---|---|
| | Function property. |
| Stencil Brush Tool | A new Stencil Brush tool is now available in Harmony. Located in a drop-down menu under the Brush tool in the Tools toolbar.<br><br><br><br>The Stencil Brush Tool has a Repaint Brush Mode and an Overlay Brush Mode. The two modes are available from the Stencil Brush Tool Properties, in a drop-down menu under the brush presets.<br><br><br><br>In Repaint Brush Mode, the existing artwork is replaced and repainted, ignoring empty zones.<br><br>In Overlay Brush Mode, the existing artwork is used as a mask to generate new brush strokes which are added on top, leaving the existing artwork untouched.<br><br>A selection of multiple layers can be used when Overlay Brush Mode is active. With multiple layers selected, the union of the artwork in all of the selected layers is used as the mask while the topmost layer, the active layer, will be where the new strokes are created. |
| Single Line and Multiple Lines Cutting Modes | The Cutter tool now has two gesture cutting modes available in the Tool Properties view.<br><br>• Single Line Cutting Gesture: This mode trims the first line segment cut by a single straight gesture.<br><br>• Multiple Lines Cutting Gesture: This new mode trims multiple line segments cut by the same gesture. |
| Select by Colour Tool | The Select by Colour tool, which was only available as a mode in the Select tool's properties in previous versions, is now directly accessible from the Tools toolbar and the Drawing Tools menu for faster workflow. |

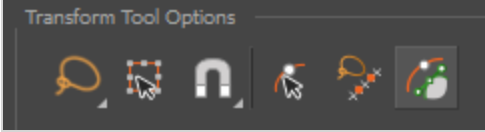| Feature | Description |
|---|---|
| | The ability to create a keyboard shortcut for this tool has also been added under the Drawing Mode category. |
| Deselecting Multiple Strokes | It is now possible to deselect multiple strokes from the selection when using the Select tool by holding down the SHIFT+ALT keys (SHIFT+OPTION on macOS). This allows you to quickly remove multiple strokes from a selection without having to click each of them individually. |
| Scale Pencil Line Thickness | A new option named Scale Pencil Line Thickness has been added to the Select Tool Properties.<br><br>When enabled, the thickness of lines created with the Pencil tool or any of the shape tools will scale when using the Select tool to transform them. |

## Timeline

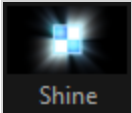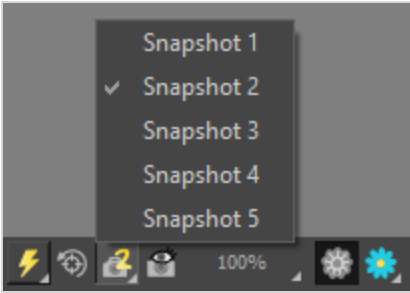| Feature | Description |
|---|---|
| Extend Exposure for Scene Duration | A new option named Extend Exposure for Scene Duration has been added to the Add Drawing Layer dialog. This new option allows you to quickly create and extend a new drawing exposure in a single step when adding a new drawing layer. |
| Reorder Sound Layers | It's now possible to reorder sound layers by dragging and dropping them within the sound layer section of the Timeline. |
| Locking Sound Layers | A lock button is now available on sound layers in the Timeline to prevent accidental timing modifications to audio tracks. |
| Renaming Sound Layers | Sound layers can now be renamed directly from the Timeline, by double-clicking on the |

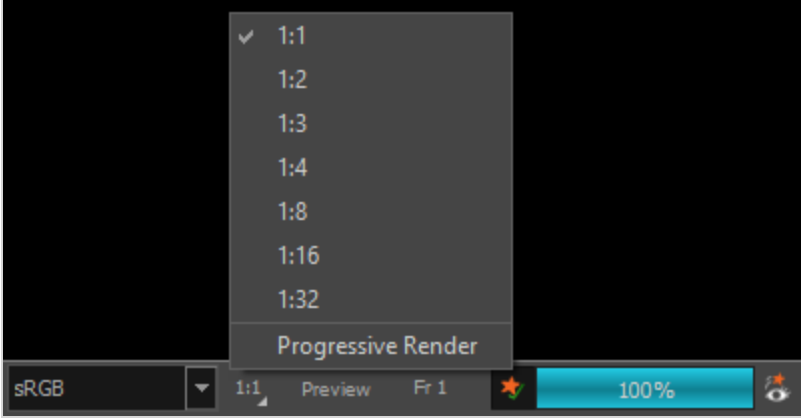| Feature | Description |
|---------|-------------|
| | name. |

## Animation

| Feature | Description |
|---------|-------------|
| Mixed Manipulation Mode | The new Mixed Manipulation Mode button available in the Transform tool properties, allows the manipulation of multiple selections and combinations of Curve Deformers, Free Form Deformers, Drawings and Pegs together using the Transform Tool.<br><br><br><br>When the Mixed Manipulation Mode button is enabled in the Transform Tool Properties, the bounding box manipulator allows to perform scale, move, rotate and skew operations on all the selected elements together. |
| Rigid Point Deform Node | The new Rigid Point Deform node is a type of weighted deformer that uses the position of pegs to apply transformations. It prioritizes rigid transformations over deformations to preserve drawing integrity.<br><br>Used in conjunction with the Weighted Deform node, it is particularly useful for tracking and deforming textures on characters and animated surfaces. |
| Capture Motion Tool  | A new tool called the Capture Motion tool can be used to record the position and motion of the mouse and apply it as an animated path to Drawing and Peg layers. This provides an easy way of creating animated paths for drawing and peg layers. The tool is available in the Advanced Animation toolbar as well as in the Animation Tools menu. |
| Deformer Manipulator Improvements | The deformer manipulator that can be enabled using the Show Manipulator button in the Deformation toolbar has the following improvements:<br><br><br><br>• It is now possible to skew a selection of deformer points by clicking and dragging on the edges of the manipulator box. Selecting all the points and skewing them produces the same result as when skewing a parent peg. |

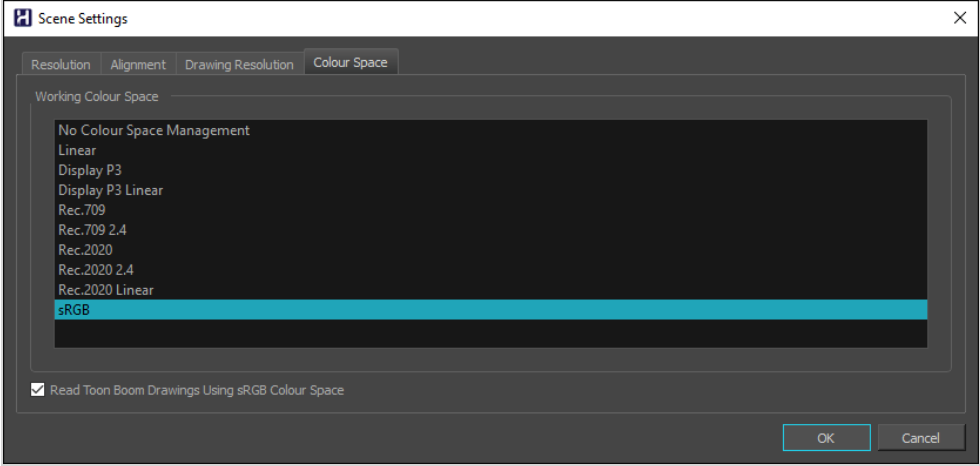| Feature | Description |
|---|---|
| | • New handles are available on the sides of the manipulator box to scale a selection of deformer points on a single axis.<br><br>• Holding the Shift key while scaling using a corner handle will scale the deformer proportionally.<br><br>• The deformer manipulator's position no longer resets after each rotation.<br><br>• The deformer manipulator's pivot will now follow when moving points. |
| Show Deformation Mesh | It is now possible to display the deformation mesh of a deformer using the new Show Deformer Mesh option.<br><br><br><br>The Show Deformation Mesh button can be added to the Deformation toolbar using the Toolbar Manager by right-clicking on the Deformation toolbar and selecting Customize from the menu. |
| Nudging Deformer Points using the rigging tool | The Rigging Tool now allows nudging deformer points using the arrow keys. This allows for precise positioning of points while creating deformers. |

## Camera and Compositing

| Feature | Description |
|---|---|
| Shine Effect Node | The new Shine effect node in Harmony 21 can be used to create effects such as shining light from behind an object or rays shining through the clouds.<br><br>Without having to build a complex node network, the Shine node replicates the placement of a light source behind an object and projects light rays around the given object. This new node is available in the Blur category of the Node Library.<br><br> |
| New Timing Nodes | New effects nodes that allow retiming and changing the order of frames are now available in Harmony. The following nodes are available in the Timing category of the Node Library.<br><br>The Hold Timing and Hold Transformation Timing nodes are used to define held frames and are useful for putting content on twos. |

| Feature | Description |
|---|---|
| | The Loop and Loop Transformation nodes can be used to define a range of frames to repeat in loop or ping pong mode.<br><br>The Retime and Retime Transformation nodes are used to offset image or transformations by a given amount of frames and can be used to shuffle frames in any order. |
| Proportion Grid Overlay | A Proportion Grid can now be displayed in Harmony's Camera view, to help with balance and proportions of scenes.<br><br><br><br>The Proportion Grid can be enabled from the Camera view's status bar and follows the camera frame as it moves. The grid is divided by three on each axis by default to create a rule of thirds grid. The number of divisions can be changed from the Camera tab of the Preferences. |
| Camera View Snapshots | The Take Snapshot button in the Camera View status bar now has a drop-down menu with five available slots to store snapshots.<br><br><br><br>Custom keyboard shortcuts can be set for each slot from the Camera category of the shortcuts. |
| Preview Resolution Ratio | The preview resolution can now be changed from a drop-down menu in the Camera view's status bar, providing a quick way of changing the resolution used for software render previews. |

| Feature | Description |
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| Progressive Render Preview | The new Progressive Render option, available in the Preview Resolution menu, allows generating fast low resolution previews before displaying renders using the selected preview resolution. |

## Rendering and Pipeline Integration

| Feature | Description |
|---|---|
| Apple ProRes exports on Windows and Linux | Apple ProRes 4444 and 422 codecs are now available on Windows, Linux and macOS as export formats. The new QuickTime ProRes formats are available in the Write node, as well as in the Export to Video and Export OpenGL Frames dialog.<br><br>On macOS, the Apple ProRes options from previous versions are still available for compatibility with scenes created in those versions. These export formats are labelled with "Legacy" in parentheses. |
| Writing 16-bit TIFF | Harmony now allows writing TIFF files in 16-bit per channel and also provides the option to use LZW compression for this format. |
| Export Format Selection | The list of available image formats when rendering is now easier to use. Format, colours and bit depth are now listed as separate options rather than in a single list. |
| Colour Management for OpenGL Rendering | In order to provide consistent colours between OpenGL previews and software renders, a new option named Read Toon Boom Drawings using sRGB Colour Space has been added to the Colour Space tab of the Scene Settings dialog. When this option is selected, colours from Toon Boom drawings are converted from sRGB to the project working colour space before being composited. |

| Feature | Description |
|---|---|
| |  |
| | This allows Harmony's Camera view to use the same colour space, which can be selected from the list at the bottom of the Camera view, when displaying drawings in OpenGL and Render modes. The Display Colour Space option that was available on the Camera tab of the preference is not required anymore and has been removed. |
| | This also allows using a different colour space for each camera view in the workspace, which is useful when using monitors with different colour spaces. |
| | The Read Toon Boom Drawings using sRGB Colour Space option is selected by default for any new scene created in Harmony 21. When a scene created in a previous version is opened, this option remains unchecked, to ensure colours in the scene render as they did in previous versions of Harmony. |
| Assign Image Colour Space on Import | An option has been added to the Import Images dialog to assign a colour space when importing an image using the Keep as Original Bitmap option. The colour space selected in the New Layer Colour Space list will define the colour space set for new layers. |
| Convert Image Colour Space on Import | An option has been added to the Import Images dialog to convert an image's colour space when importing an image using the Import as Toon Boom Bitmap option. The image will be converted from the selected colour space in the Source Colour Space list, to sRGB. |

## Performance

| Feature | Description |
|---|---|
| OpenGL Rendering Optimizations | The performance of the Camera view has been improved by making OpenGL rendering in this view multithreaded. This allows Harmony to use multiple CPU cores to simultaneously perform render operations of multiple drawings and effects. Scenes with high numbers of drawing layers benefit the most from the multithreaded OpenGL rendering. Performance |

| Feature | Description |
|---|---|
|  | improvements are noticeable when manipulating artwork using the Transform tool or when panning and zooming the camera view in those types of scenes. |
| Transform Tool Optimizations | Transform Tool overall responsiveness and performance when selecting, editing and interacting in the scene has been improved, specifically with heavier scenes that have many nodes (common to rig-based projects). |
| Interactive Camera View Cache | The new Interactive Camera View Cache preference, available in the OpenGL tab of the Preferences, is now enabled by default. |
|  | This improves the performance of tools in the Camera view by reducing the number of refresh required when using those tools. |
| Weighted Deformers Optimizations | The weighted deformer now renders faster and manipulates faster in heavy scenes that contain detailed drawings and textures. |

## Game Pipeline

| Feature | Description |
|---|---|
| Skinning View | The new Skinning View in Harmony allows you to manage and edit the skins you create for your assets used in your game. It is especially useful when you want to switch to different costumes or props on a character while continuing to use the same animation. |
|  | This Skinning view replaces the Game Skinning toolbar and shortcuts in the Gaming category that were available in previous versions of Harmony. |
| Scene Markers View | Scene markers are an essential part of the gaming pipeline. The new Scene Markers view allows you to create, manage and edit all your scene markers from a single place. |
| Export to Sprite Sheet | The option Export Sprites Individually has been added to the Export to Sprite Sheet window. When enabled, each drawing is exported separately instead of on one sprite sheet, allowing the game engine to create the sprite sheets or sprite atlases during import. |

## Library

| Feature | Description |
|---|---|
| Library View Thumbnails | The Library view Thumbnail display mode has been improved with the addition of a slider, |

| Feature | Description |
|---|---|
|  | placed on the bottom right of the view, that can be used to change the thumbnail sizes.<br><br>Filenames are now written below the thumbnails to allow them to align in a grid fashion. |
| Higher Resolution Thumbnails | Higher resolution thumbnails are now used to display the drawing substitutions in the Library and the Drawing Substitution view as well as thumbnails of drawing when opening a template as a folder. |

## WebCC

| Feature | Description |
|---|---|
| Customizable Export Options for WebCC | New parameters are now available to customize the options available when using the Export Offline dialog, simplifying the export process and preventing errors.<br><br>Use the following parameters when launching the WebCC service to disable export options in the Export Offline dialog:<br><br>-noEnvLibraryExport: disables the Environment Library export option during.<br><br>-noJobLibraryExport: disables the Job Library export option.<br><br>-noEnvPaletteExport: disables the Environment Palette export option.<br><br>-noJobPaletteExport: disables the Job Palette export option. |

## Scripting

| Feature | Description |
|---|---|
| New Scripts | The following scripts are now packaged and available in Harmony:<br><br>• TB_FindAndReplaceNodeName.js: Used to find and replace node names in a Harmony scene. The script traverses the node network, finds snippets or full names and replaces those sections with the desired replacement text. Useful for renaming character rigs, prefixing characters, or correcting common naming convention issues.<br><br>• TB_FindAndReplacePaletteColourName.js: Used to find and replace colour names in a Harmony scene. The script traverses the palettes, finds snippets or full names and replaces those sections with the desired replacement text.<br><br>• TB_CopyPastePivot.js: Allows for pivot information of a selection to be copied to the clipboard and applied to a different selection by pasting it. |

| Feature | Description |
|---|---|
| | • TB_CopyPivot function to store the position of the selected node's pivot. Select another peg and use the TB_PastePivot function to paste the pivot information. |
| Center Timeline on a Specific Frame | `Timeline.centerOnFrame(frameNum)` has been added to the Timeline scripting api. This function will get the position of a frame and centre the Timeline view on that frame. |
| SessionChangeNotifier | New `SessionChangeNotifier` JavaScript class that can be used to connect a function to any available signal from this class. Once a function is connected to a signal, the code will be executed when the specific event is triggered, until the parent object is destroyed. |
| Added Signals to SceneChangeNotifier | `nodeMetadataChanged()` and `sceneMarkersChanged()` signals have been added to the `SceneChangeNotifier` class. |

## Search Filter Improvements

Improvements have been made to the search filters in the Node View and Node Library.

The Node View Find and Insert search results are now ordered to quickly find the nodes you want to insert by showing best matches at the top rather than alphabetically. For example, typing "Peg" now lists results in the following order:

1. Peg

2. Apply-Peg-Transformation

The Node Library search filter has been improved to show nodes that match all the words that are typed, even when the match is partial. In addition, the option Search Node Description, that can be used to search through the description of nodes, has been.



The improved search filters now have an X button that appears in the search field when a filter is applied. Clicking this button or pressing the Esc key can be used to quickly clear the search filter.

## Fixes

The following issues have been fixed in this release of Harmony:

### Drawing Tools

- The Pencil tool loses its texture when creating a new drawing layer. *HAR-7060*

- Brush texture is lost when changing the colour of drawings using Permanent Selection and Apply to all Frames. *HAR-7072*

- Small parts may disappear when using the Perspective tool in Lattice mode. *HAR-7159*

## Animation Tools

- The Transform tool doesn't work correctly when the parent peg is selected if there is a deformation switch beneath. *HAR-6927*

- Master Controllers should honour the "Set Keyframes on all Functions with the Transform Tool" preference. *HAR-6552*

- Using the transform tool or moving up the hierarchy using B does not select the peg connected to the target port of the Transform Gate. *HAR-7101*

- Auto Muscle does not work properly when the angle is more than 90 degrees. *HAR-7259*

- Harmony may crash when manipulating the Fold node in the Camera view. *HAR-7395*

- Cannot manipulate Light Position connect to a Cast Shadow node from the Top and Side views. *HAR-6423*

## Timeline

- Crash when copying keyframes using the mouse on Windows 10 systems with NVIDIA Quadro video cards. *HAR-7491*

- Crash when dropping a selection of layers containing a Free Form Deformer over a Drawing layer. *HAR-7550*

- Colour Cards are added as a parent when a Drawing layer is selected. *HAR-7273*

- Map Lip-Sync applies the timing to the wrong layer. *HAR-7330*

## Node view and Compositing

- Selecting only the backdrop in the Node view with ALT+Click does not work. *HAR-6790*

- Harmony freezes when rendering certain scenes containing Weighted Deform nodes. *HAR-6646*

- White areas of bitmaps turn grey when lowering the opacity from the Layer Properties. *HAR-6694*

- Rendered image in Camera view appears blurry when zoom level is at 200%. *HAR-7056*

## Master Controllers

- Slider and Point2D widgets are not updated immediately when modifying their attributes from the layer properties view. *HAR-6880*, *HAR-6883*

## Library

- Double-clicking a template in the Library regenerates its thumbnails. *HAR-4332*

- Folders in the Library view collapse when creating a new folder. *HAR-6959*

## 3D

- `TB_MayaToXml.py` only exports the first 25 frames. *HAR-6577*

- Framing is wrong when importing camera information from Maya. *HAR-6578*

- FBX files with shared embedded textures take a long time to load. *HAR-6945*

- Scenes with Alembic files that use RGB colour sets may crash. *HAR-7503*

- Crash when importing a Collada file that does not have normals. *HAR-7042*

## Control Center

- The Control Center –`import_scene` command line argument does not work anymore. *HAR-7225*

- Palettes at the job and environment levels are not imported when importing an offline scene. *HAR-7565*

## Scripting

- `exportPenstyleToString` function in the PenstyleManager class does not work. *HAR-6695*

- `TB_EditLineThicknessOvertime.js` script creates too many entries in the undo list. *HAR-7168*

- `scene.setDefaultResolution` overrides the scene's projection value. *HAR-7157*

## Others

- The Lock in Time button in the function editor does not work correctly with 3D Paths. *HAR-6697*

- Remove Unused Files does always delete palette files from disk. *HAR-7090*

- Keyboard shortcuts may stop working after clicking Cancel in the Shortcuts window. *HAR-5632*

- Cannot type characters that require the right Alt key in some views on Windows. *HAR-6854*

- Restore All Defaults in the Colours preferences restores all the preferences when clicking OK. *HAR-7235*

- The Create Empty Drawing shortcut only works from the Timeline and Xsheet. *HAR-6558*

- Cannot import Apple ProRes movies on Windows. *HAR-7133*

- Keyboard Shortcuts are imported to the wrong preset if the same name is used. *HAR-7569*

- The selected Alignment Rule is ignored when importing a PSD as Individual Layers. *HAR-7616*