BEHOLDR MANUAL

Version 5.0.0

User Manual for BeholdR, the Unity3D editor extension providing Post Processes right in the Scene View

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Introduction

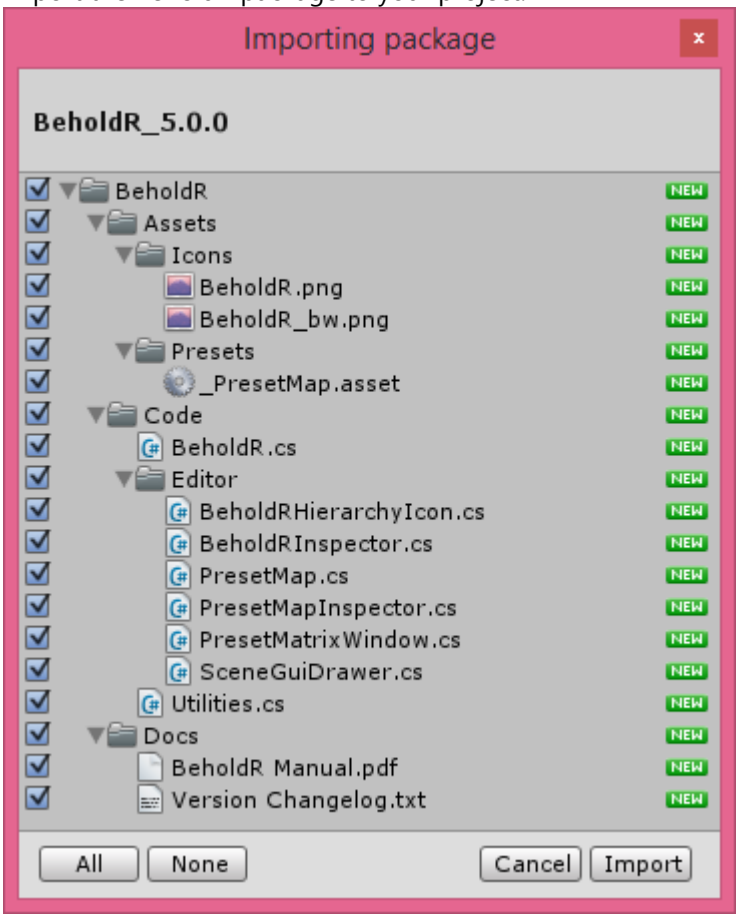
Thank you for purchasing and using our tool, BeholdR!
The BeholdR Unity® Editor extension was designed to streamline the level and game design process by allowing you to see HDR and Post Process effects in the editor's Scene View, eliminating the need to switch to the Game View in order to see what the final result will look like.

Usage Guide

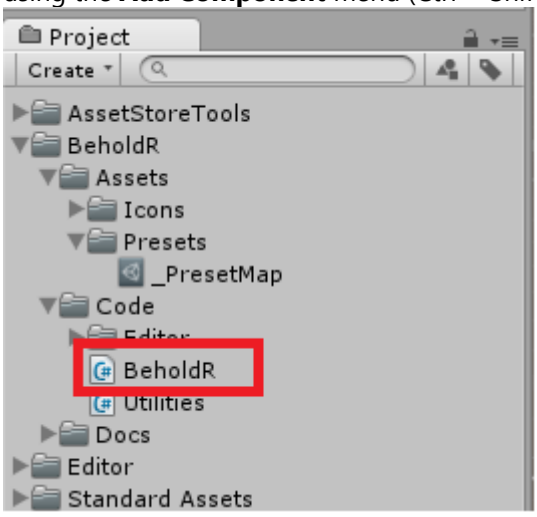
Getting Started With BeholdR

In order to enable HDR and Post Process effects in the Scene View, Simply:

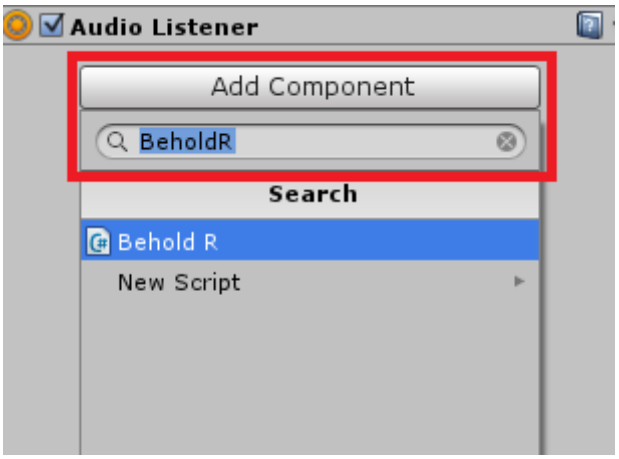
1. Import the BeholdR package to your project.



2. Add a BeholdR component to a Camera object by dragging the BeholdR script from the Project Window or by using the **Add Component** menu (Ctrl + Shift + A shortcut).

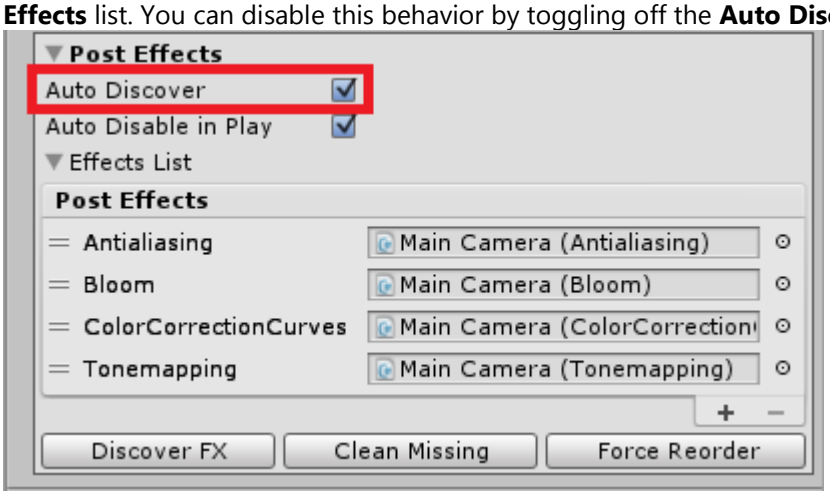


or

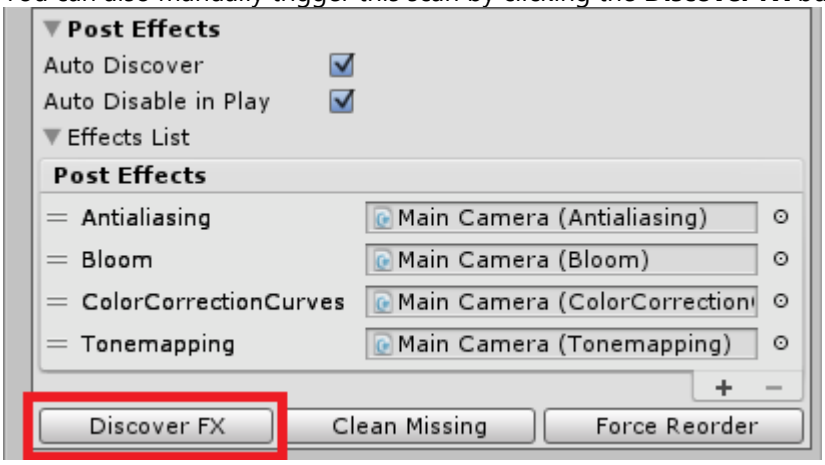


Post Effects

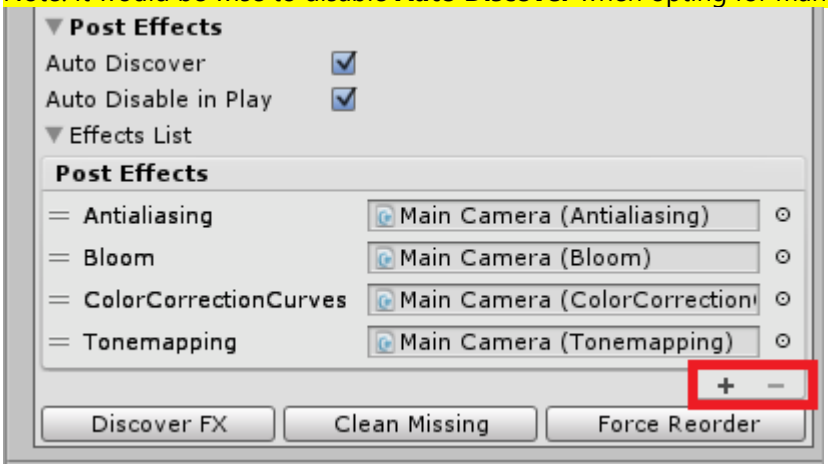
- By default, BeholdR will attempt to discover Post Effects on the camera and automatically add them to the **Post Effects** list. You can disable this behavior by toggling off the **Auto Discover** option.



- You can also manually trigger this scan by clicking the **Discover FX** button.



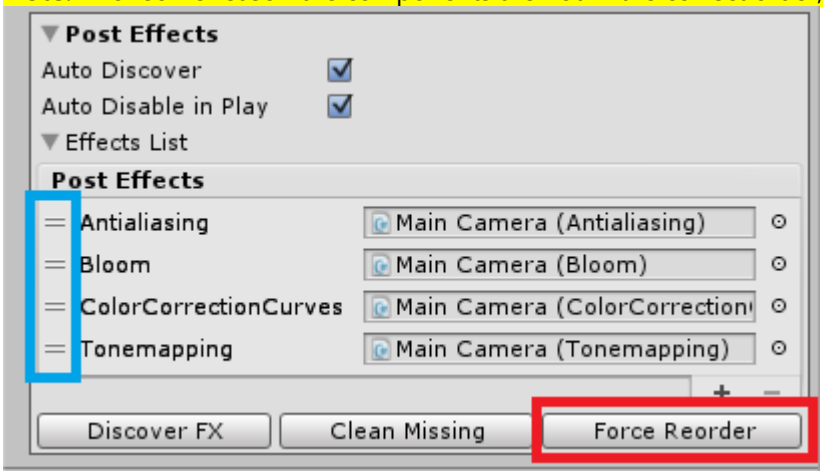
- You can manually add and remove Post Process effects you'd like to enable in the Scene View by using the + and - buttons on the **Post Effects** list on BeholdR.
Note: It would be wise to disable **Auto Discover** when opting for manual control.



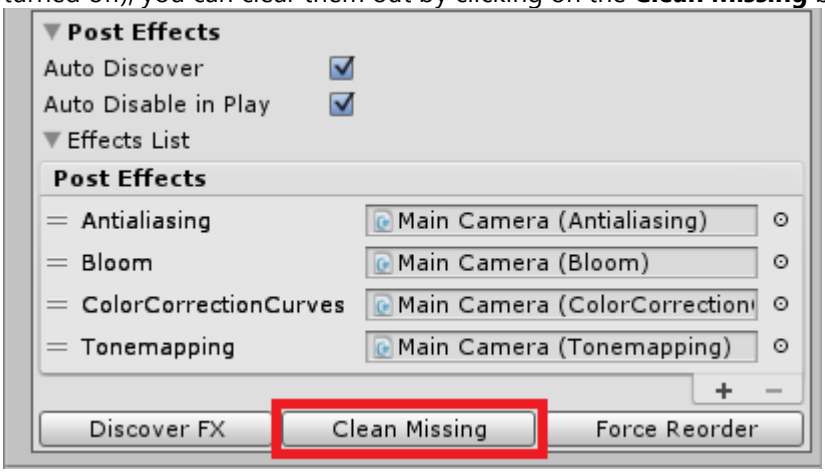
- The order of the components in the Post Effects list is the order they will be applied to the Scene Camera. Therefore, we're now using a Reorderable List so you can change the order of the Post Effects simply by dragging them in the list to the desired position. Note that BeholdR will also reorder the components on the game camera,

to mirror the changes perfectly.

Note: If for some reason the components are not in the correct order, click the **Force Reorder** button.



- In case there are Missing references in the Post Effects list (this is more likely to occur when **Auto Discover** is turned off), you can clear them out by clicking on the **Clean Missing** button.

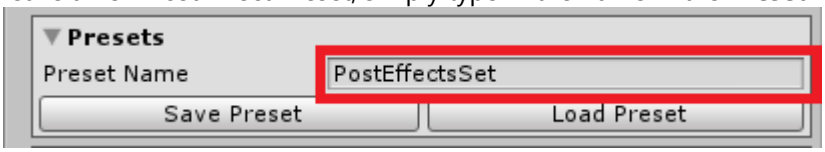


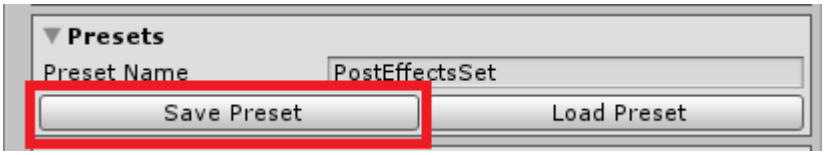
- Done. Your Post Process effects should now be synchronized to the Scene View. You can edit their parameters in the inspector and the change will reflect in the Scene View immediately.

Post Effect Presets

BeholdR supports saving and loading of Post Effect stack presets so you can quickly save, copy, and share post effect stacks in your project and with your team.

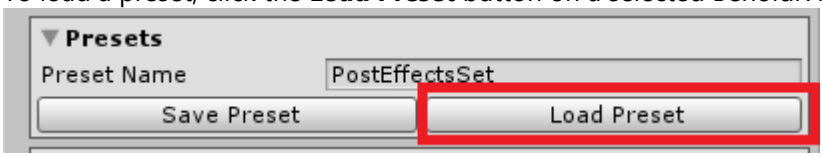
To save a new Post Effect Preset, simply type in the name in the **Preset Name** field, and hit the **Save Preset** button.

1. 

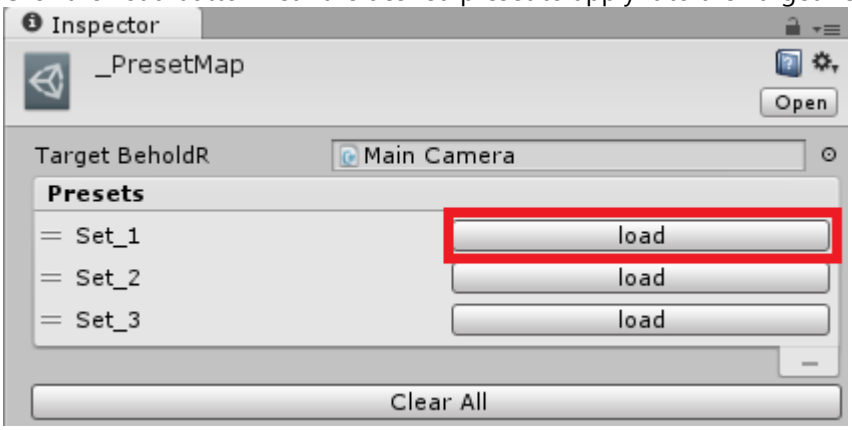
2. 

This will save a new preset with that name in the ../BeholdR/Assets/Presets/ folder and add it to the _PresetMap asset, from which it can later be loaded back.
Important! Do not delete the _PresetMap asset or you won't be able to load the presets you created.

To load a preset, click the **Load Preset** button on a selected BeholdR instance.



This will switch over to the **Preset Map** list, with the BeholdR component pre-selected as the **Target BeholdR**, the BeholdR component into which the preset will be loaded.
Click the Load button near the desired preset to apply it to the Target BeholdR component.



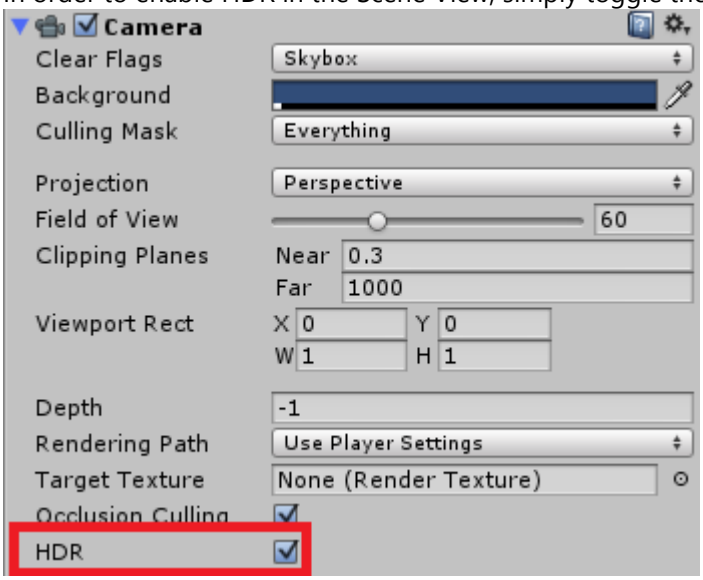
The **Preset Map** allows you to quickly load different presets and visualize the different looks you've set up until you're satisfied and ready to continue working.

HDR & Tonemapping

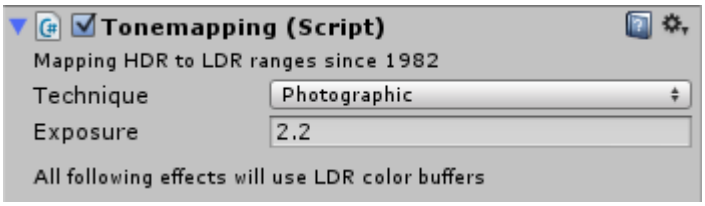
Unity 5 by default applies HDR and Tonemapping to the Scene View if the camera is marked as HDR and it has a Tonemapping component.
Note that each of these featured will work independently from each other; you can have one, both, or none at all.

Also of important note is that these features **do not require BeholdR to work** - these are now an integral part of the Unity engine and will work even without BeholdR.
As such, BeholdR will not synchronize these settings to the Scene View as Unity already does that.

- In order to enable HDR in the Scene View, simply toggle the HDR flag on the Camera component.

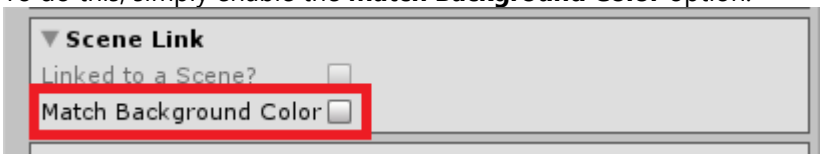


- In order to enable Tonemapping in the Scene View, simply add a Tonemapping component to the Camera, and make sure it is enabled. Unity will synchronize any changes made to the Tonemapping component to the Scene View.



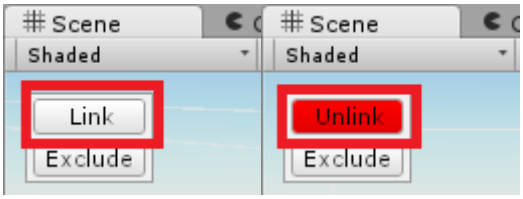
Scene View Background Color

BeholdR can also synchronize the Scene View's background color to that of the camera, simulating the Game View even more accurately.
To do this, simply enable the **Match Background Color** option.



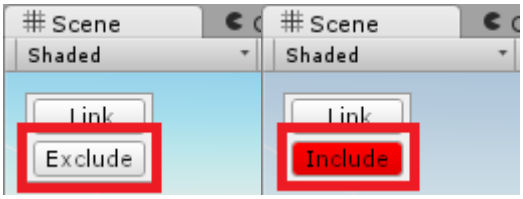
Controlling the Game Camera with the Scene View

BeholdR allows you to match the position and rotation of the camera it's on to the Scene View's camera, providing an easy way to position the Game camera. This behavior can be toggled by clicking the Link/Unlink button on the Scene View itself:



Excluding Individual Views

You can now exclude or include individual views in BeholdR, allowing you to use certain views as 'clean' references without any Post Effects applied.
This state can be toggled on and off at any time by clicking the Exclude / Include button in the Scene View's GUI controls.



Hierarchy Icon/Button

BeholdR now has an icon in the Hierarchy panel, visualizing which cameras have a BeholdR attached to them, and which of them is enabled.
This icon doubles as a button that toggles the **enabled** state of the BeholdR component, allowing switching quickly between BeholdR configurations, and turning the BeholdR component on or off without having to select the camera first.

Using Multiple BeholdR Instances

You can add as many BeholdR components to as many Cameras as you want, but only one BeholdR component can be enabled at any given time in order to prevent conflicts.
However, you don't have to do anything - enabling one BeholdR instance will automatically disable all the others.

Removing BeholdR

You can disable each of the synchronized Post Process components on the Camera object individually, and the change will be reflected in the Scene view.
Alternatively, you can Disable BeholdR itself in order to turn off all the Post Process effects at once.

Removing the BeholdR from the Camera object will automatically remove all the Post Process effects from the Scene view.

Change-set:

v5.0.0
- Dropped support for Unity 4.x
- Tonemapping effect always set to be the last effect in the chain
- Added the option to disable BeholdR on a per-view basis
- Suppress BeholdR if the Scene View is not in Shaded mode
- Save Post Effects Stack Preset
- Load Post Effects Stack Preset
- Undo Load Preset
- Preset Matrix window for quick comparison between presets
    - Button to add missing components from preset
    - Button to remove existing components from preset
    - Added support for enum field type
    - Don't display editor field for Hidden shaders
- Fixed Preset Map not serialized between editor sessions
- Using Beholder Namespace
- Fixed BeholdR Inspector section header drawing
- Fixed Tonemapping collision with internal Scene View tonemapping in Unity 5
- Fixed Scene Views not updating after sorting the Post Effects list
- Moved SceneGuiDrawer to be an editor class
- Fixed Post Effects list width stretching the Inspector
- Fixed performance issue where an expensive LINQ query was constructed each frame
- Fixed error on build due to references to Editor Classes and namespaces
- Reorder the Post Effects list to reorder the components on the BeholdR game object
- Stopped using absolute asset paths for icon loading
- Fixed bug where saving a preset would disable BeholdR
- Fixed reorder not happening after adding a new Post Effect
- Fixed a NullReferenceException when clicking the "Force Reorder" button

v4.0.4
- Fixed ColorCorrectionCurves and ColorCorrectionLookup not updating in Unity 5

v4.0.3
- Fixed build errors
- Improved performance of the SyncComponents method
- Improved appearance of the BeholdR Inspector
- Code organization and cleanup

v4.0.2
- Fixed code compatibility with Unity 5
- Fixed double tonemapping since Unity 5 adds it internally
- Fixed Stack Overflow when cleaning missing post effects from the scene camera

v4.0.1
- Fixed NullReferenceException error that occurs the first time BeholdR is imported
- Removed redundant variable that was causing a warning to show up in the Console

v4.0.0
- Updated auto-discovery with base types PostEffectsBase and ImageEffectBase
- Updated auto-discovery with OnRenderImage method
- Improved version check
- Fold-able Inspector sections
- Match scene background color to camera
- Added hierarchy icon/button for quick activation and identifying currently active instance

v3.3.0
- Removed redundant code
- Made GuiDrawer a Singleton

Added extension method to GameObject that allows getting a component by specifying its type

v3.2.1

Fixed compatibility with Unity 4.0.0
Removed unused fields on BeholdR class
Fixed warnings after build

v3.2.0

Added option to attempt to discover post effects addition/removal automatically
Added button to automatically add Image Effects
Fixed conflicts with Scene View Filtering (search & LOD preview) which caused Unity to crash
Fixed compile error with projects that do not contain post processes or image effects
Link button displays correctly for the linked Scene View and changes color to indicate a link is active
Auto Discovery is set by editor pref to save between components/sessions
Auto Disable is set by editor pref to save between components/sessions
Fixed specific problem with ColorCorrectionLut losing reference to the LUT texture
Updated Manual

v3.1.0

Added web-based version check and notification
Updated manual
More code documentation
Fixed performance drop when checking inspectors for LODGroup component visibility
Fixed null reference exception when trying to clean null post effects

v3.0.1

Fixed GUI controls positioning when a Camera Preview is present
Suppressing BeholdR component synchronization while an inspector for a LODGroup component is visible

v3.0.0

Improved GUI controls rendering
New Inspector GUI
Removed custom icon and scene title

v2.1.2

Fixed bug where could not build the project with the script attached to a camera

v2.1.1

Repaint scene view when clicking on sync button

v2.1.0

Added custom icon and title to scene view when BeholdR is active
Added anchor option to Sync button

v2.0.0

Fixed strongly typed component reference
Added option to match camera position & rotation to scene camera

v1.9.0

Fixed compatibility with Unity 4.0.0

v1.8.1

Organized code a little

v1.8.0

Fixed errors when trying to synchronize native scene camera components
Fixed scene cameras not updating when overriding a post effect list entry

v1.7.0

Fixed compatibility issue with ColorCorrectionCurves where changing the curves won't update the scene

v1.6.0

Fixed post effects not removed from multiple scene views

v1.5.0

Added support for multiple scene views

v1.4.0

Added button to clean empty list elements

v1.3.0

Fixed null reference on switching editor layout
Fixed not being able to manually increase Post Effects list size
Fixed stack overflow after removing an element from the list that was manually expanded
Fixed not being able to close the scene view window

v1.1.0

Added support for projects that don't include image effects

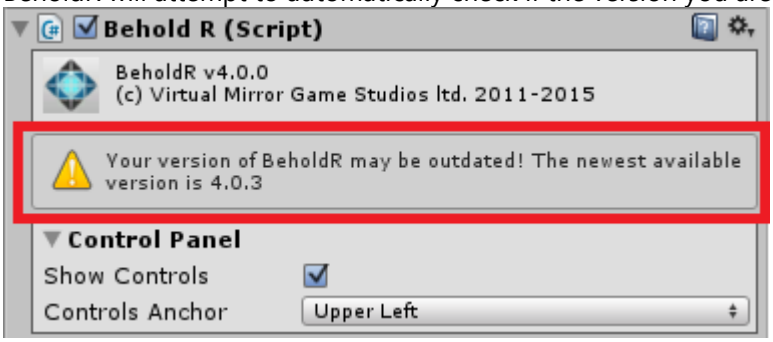
v1.0.0

-Initial version-
Copy post processes from camera to scene camera

Support & Troubleshooting

Version Check

BeholdR will attempt to automatically check if the version you are using is the most updated.



If BeholdR determines that it is outdated, a warning notification will appear. To download the newest version, open the **Asset Store** window and go to the **Downloads** tab, find the BeholdR entry, and click the **Update** button.

This feature requires Internet connection.

Error handling

If for some reason the scene camera is not synchronized with the BeholdR component, for example still showing post processes even after removing the BeholdR component, try to add a BeholdR component again, and disable/enable it. Another option is to try and switch editor layout, so the scene views will refresh with new cameras.

Compatibility issues

Some post processes don't update themselves properly, such as the ColorCorrectionCurve post process.
We've tested and fixed compatibility issues with the default Unity post processes, but if you encounter this issue with a custom post process, you'll need to apply a fix manually.
Place your fix code in the EnsurePostProcessUpdates method of the BeholdR script.

Known Issues

- There is a known issue with ColorCorrectionLookup causing strange colors and sometimes black/white covers over the Scene View. We've observed this issue in the Game View as well and are investigating into it.
- There is a known issue with ScreenSpaceAmbientOcclusion not rendering correctly in the scene view, causing black diagonal lines to appear on every flat surface.
  Note that this behavior was observed with the new SSAO component provided with Unity 5.

Contact information

If you wish to contact us about anything, please send an email to
support@virtual-mirror.com