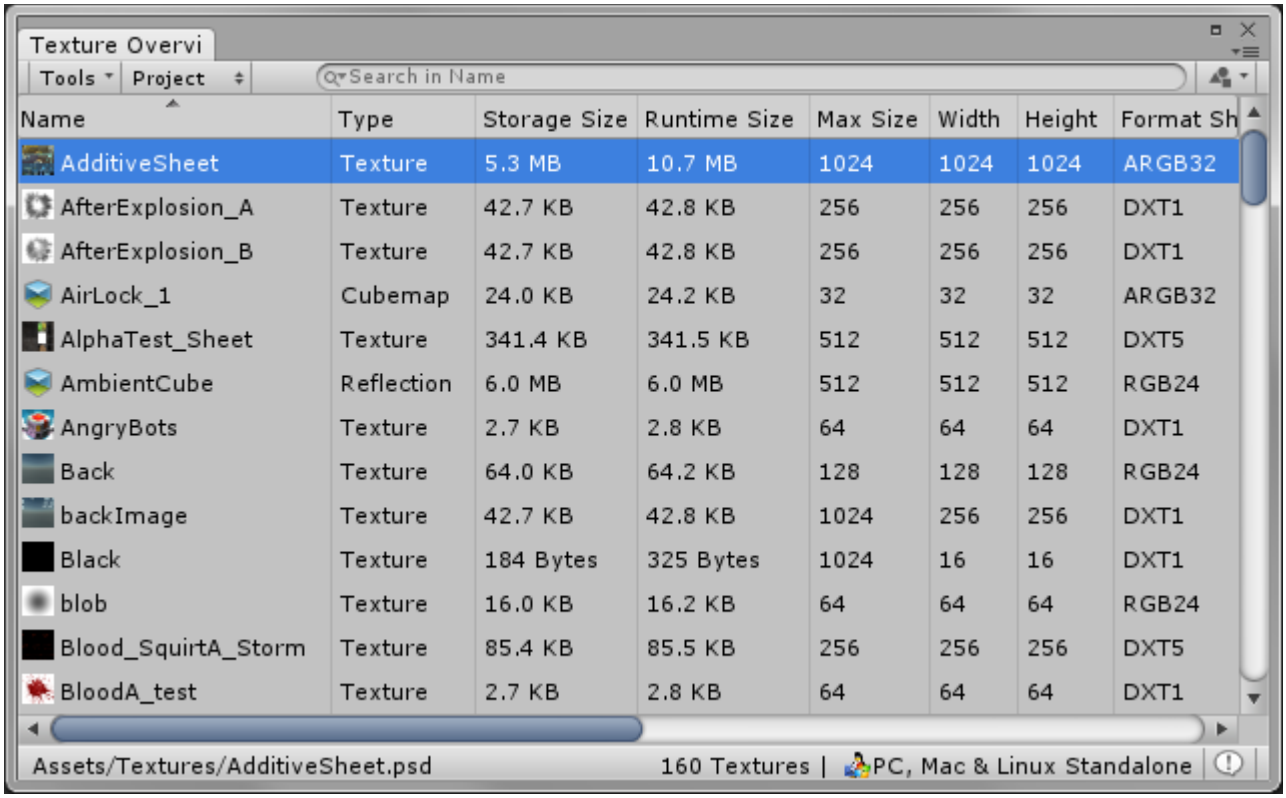
Texture Overview
for Unity (4.3 – 5.x)

Table of Contents

1 Introduction

Texture Overview is an editor extension for Unity 4.3 or higher, incl. Unity 5. It works with Unity personal and professional versions.

The plug-in provides an excellent overview of all textures in the project, the current scene, a specific folder or any selected asset. It can be used to identify how much memory textures consume, which makes it a very useful optimization tool, or to verify texture settings very easily.



2 Features

- Lists all textures in your project, current scene, a folder, an asset bundle manifest or of any selected asset
- Sorts textures by Storage Size, Runtime Size, Format, Sprite Packing Tag, etc. Very easy to see which textures consume the most memory.
- Filters textures by type (Sprite, Normalmap, Cubemap, GUI, etc), name and path
- Finds materials and prefabs that use a particular texture
- Exports content as CSV to generate fancy graphs about memory usage in spreadsheet applications.
- Used in projects that contain several thousands of textures .

3 What users say about Texture Overview

The following quotes are copied from the asset stores' Texture Overview review section (here and here).

> *The plugin is fast and easy to install, unobtrusive, and provides very useful information about textures. Its great to get a quick look at only the textures in your scene arranged by memory usage, to get a really good idea of where your memory is going. Its good for optimizing because you can see textures that might not be worth their size, or certain props that are dragging in more texture than their worth visually.*

> *The project works well and is intuitive. It helped me identify memory hog textures and put them in their place. The support from Peter is solid; he is committed to his assets.*

> *Great at giving you a summary view of all your textures with just the right information to aid in optimization. Well worth the money.*

4 Installation

Before importing the TextureOverview package, make sure your project does not have any compile errors.

Files in the „TextureOverview“ package import to "Assets/Editor/TextureOverview" by default. Once you imported the package, you can find "Texture Overview" in the main menu under the "Window" popup.

In case you want it to be located under a different popup, you can change the location in "Assets/Editor/TextureOverview/ TextureOverviewMenuItem.cs". Simply change the line `[MenuItem("Window/Texture Overview")]` to whatever fit your needs.

4.1 Source Code

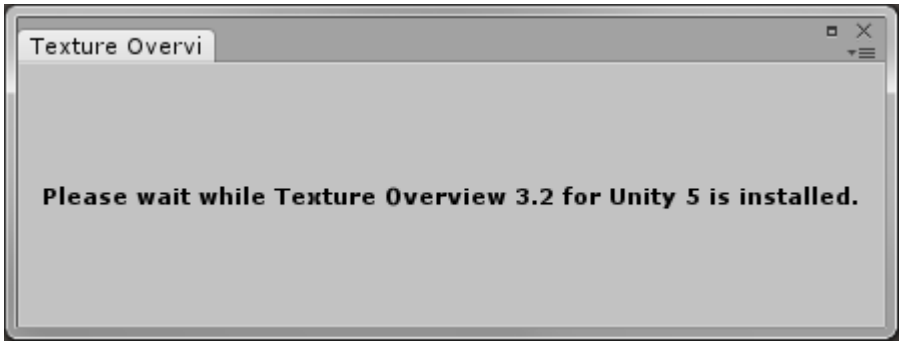
If you purchased “Texture Overview Pro”, the package also contains the full C# source code to build Texture Overview. The source code is stored in a separate zip archive found in the installation directory. If you use the default installation directory, it is: "Assets/Editor/TextureOverview/TextureOverviewSource.zip".

The source code can be built using Microsoft Visual Studio or Mono Develop. I tested it with VS 2012 Express and MonoDevelop that comes with Unity. You can find instructions how to build the project in “readme.txt”, which is part of “TextureOverviewSource.zip”.

Do not unzip the source code to any directory under the “Assets” folder of your project, as this will conflict with the prebuilt DLL version.

5 The first start

Starting Texture Overview after you imported it from the Asset Store, will first display a “Installation window”, which is responsible to install the correct plugin version for your Unity installation. The installation usually takes a few seconds only and does not need any user interaction.



After the installation has been completed, Texture Overview automatically opens, starts to read texture settings from your project and stores them in a persistent Cache File. Reading texture settings might take a while, depending on the number of textures in your project (from a few seconds to several minutes).

However, the next time you open the plugin, it will be much faster (instant)!

5.1 Cache File (the technical part)

Texture Overview automatically creates a file called “TextureOverview.cache” in the projects “Library” directory.

“TextureOverview.cache” should not be added to revision control (Subversion, Perforce, Git, Mercurial, etc). This file is very specific to the state of the Unity project on your computer only.

The .cache file contains texture settings that have been read by Texture Overview. Caching this information allows Texture Overview to start much faster when you open it another time, since the plugin does not need to read all the texture settings over and over again, which is an expensive operation.

Instead, it only needs to check if textures have been modified since the last start of the plugin. If textures have not changed, Texture Overview can use settings from the cache file, which is fast. If a texture did change, Texture Overview will read the new settings and update its cache file, which is slower.

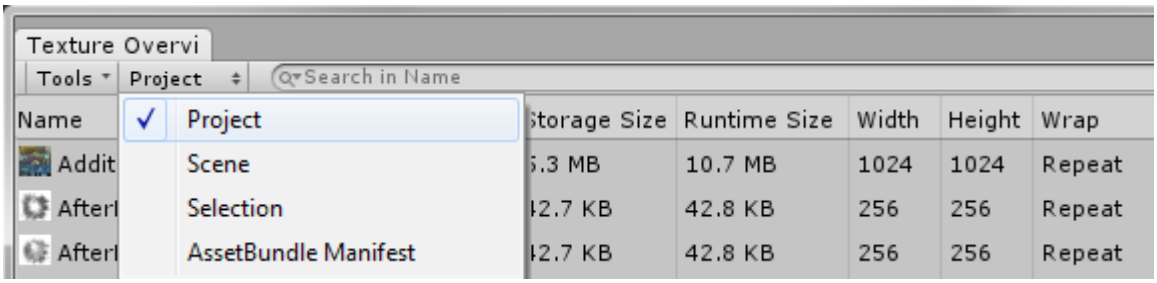
Texture settings usually need to be updated when when the texture has been modified, its import settings are changed or when the target platform is switched in Unity.

6 Usage

Texture Overview displays texture settings of the active build platform as an elegant table view. Most columns represent a setting you also find in the Unity Texture Inspector and Unity Texture Preview window.

6.1 Toolbar

Texture Overview displays textures either from the Project, Scene or Selection. Use the drop-down menu as shown in the picture below to select the mode.



6.1.1 Project

Displays all textures located in the project.

6.1.2 Scene

Displays textures that are referenced by game objects in the currently open scene(s).

6.1.3 Selection

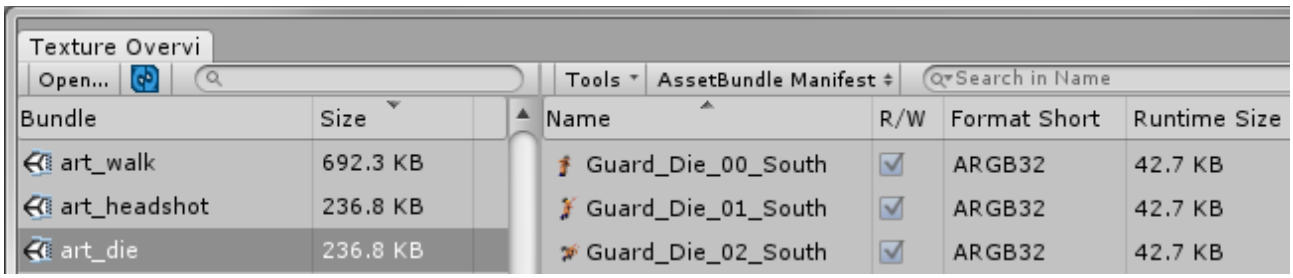
Displays textures that are used by the selected asset in the Unity project window or from the selected GameObject in the Hierachy window.

6.1.4 AssetBundle Manifest

Displays textures that are referenced by an asset bundle manifest file. Unitys BuildPipeline outputs a manifest file for each asset bundle it generates. Such manifest file contains which assets have been explicitly added to an asset bundle. Asset dependencies are not resolved.

Please note that Texture Overview does not load the actual asset bundle. It uses the .manifest file to detect which assets are stored in a bundle. It displays texture settings of textures located in your project, not the ones stored in that asset bundle.

Choosing the “AssetBundle Manifest” mode shows a new panel at the left side of the Texture Overview window. The “Open...” button can be used to select the directory where *.manifest files are stored.



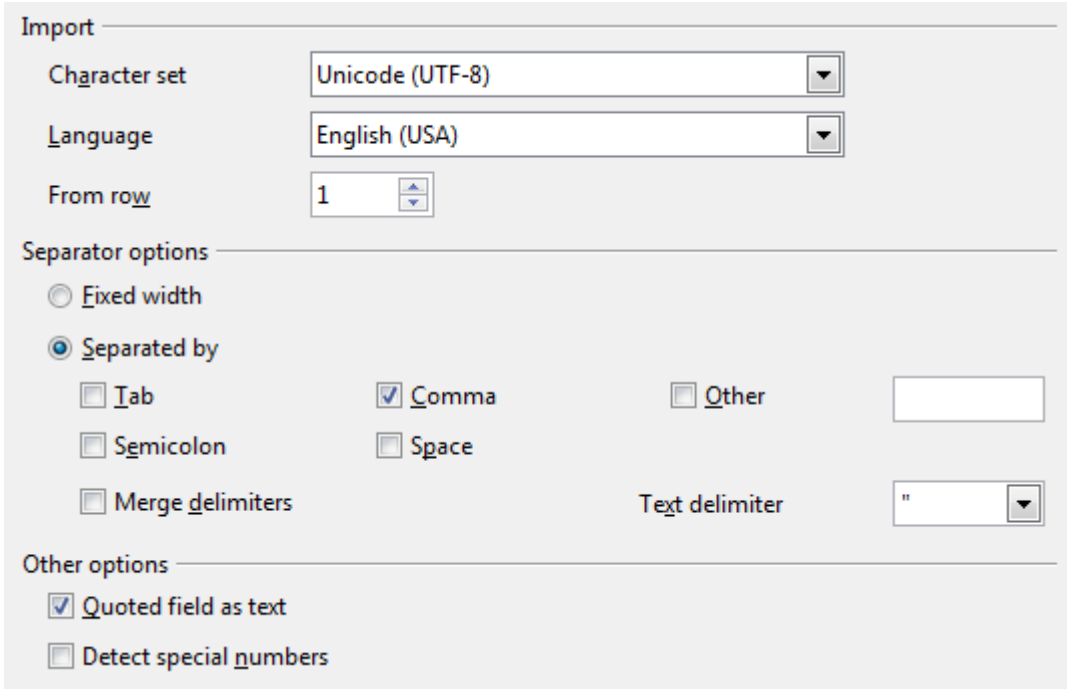
Texture Overview scans the selected directory and displays each *.manifest file it could find in the list. If a file with either no file extension or .unity3d file extension is located next to the .manifest file (which is usually the actual asset bundle), its size is used to display in Texture Overview.

6.2 Tools

6.2.1 Export CSV

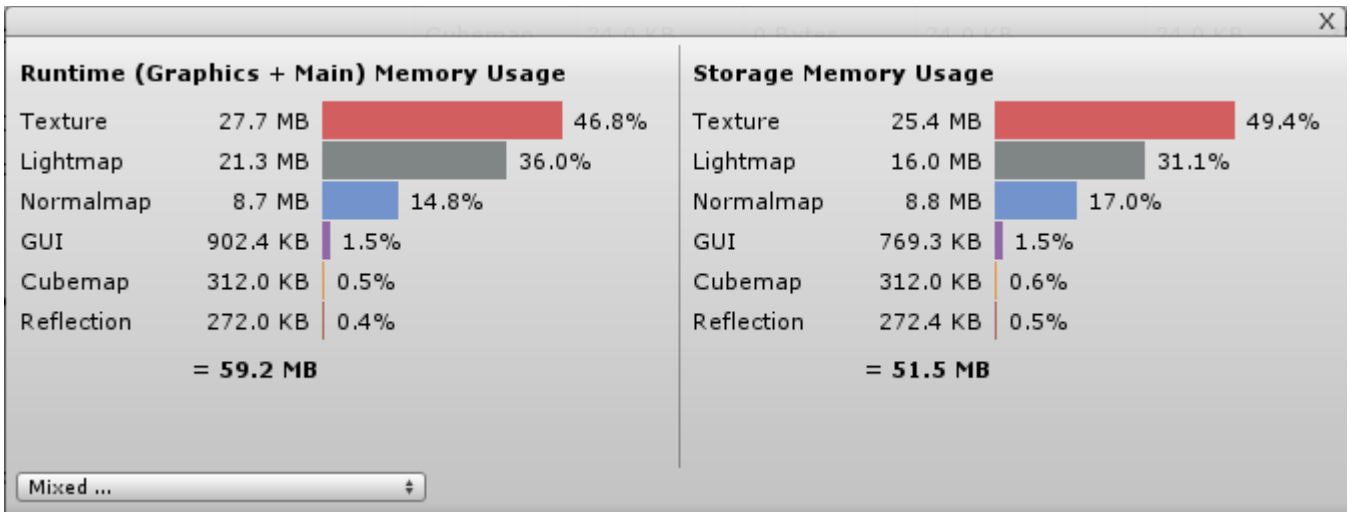
Export the list content as CSV (comma separated, text put in quotes). The exported CSV file can be used in spreadsheet applications to generate fancy graphs about memory usage for example.

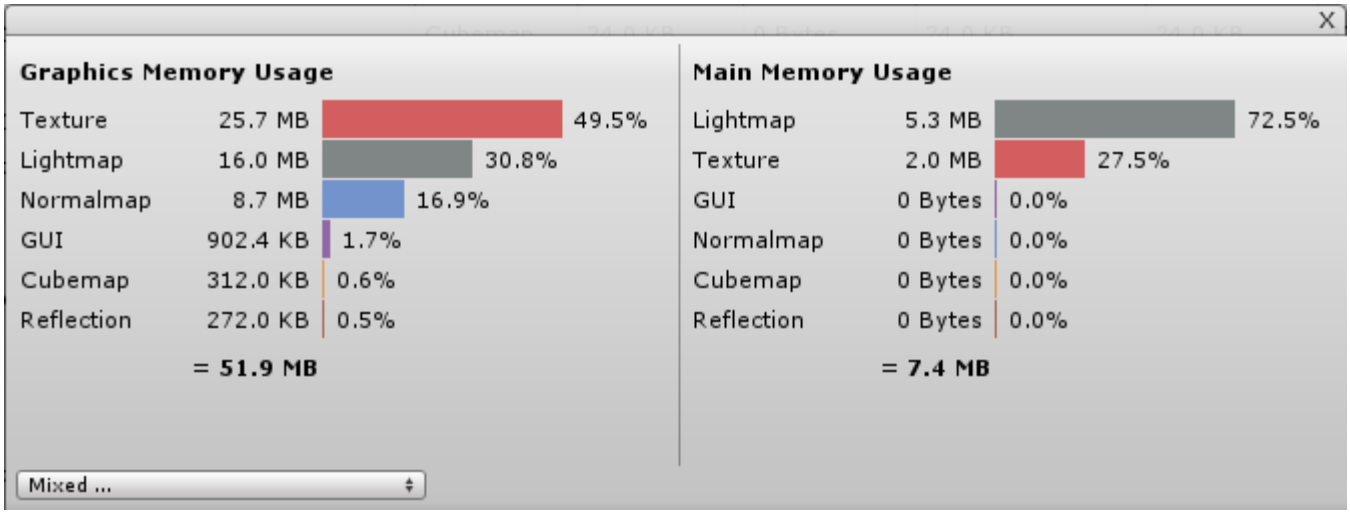
If you use Open Office to view the CSV file, these are the CSV import settings:



6.2.2 Memory Usage

Displays an overlay window that shows the runtime, storage as well as graphics and main memory usage of textures currently displayed in the list.





As you filter textures in the list, you see the statistics to change accordingly.

6.2.3 Advanced > Handle Rgb24 as Rgba32 for graphics memory calculus

Most, if not all graphics card expand RGB24 textures to XRGB32 (where X is ignored). This means, a RGB24 texture costs the same amount of memory as a RGBA32 texture on the GPU.

This option makes sure that Texture Overview calculates memory consumption for RGB24 texture formats as they were XRGB32, to better match how much memory the texture actually costs on the graphics card.

The default value for this option is ON.

(If you can think of a better name for this option, please let me know)

6.3 Search

The textfield in the toolbar can be used to search/filter the list. The search checks if any of the

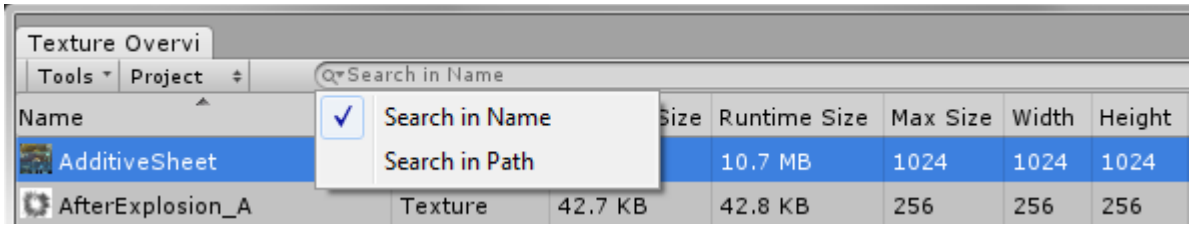
provided words occur in the „Name“ for example (depends on search mode). The search performs case insensitive.

Provide multiple words, separated by a space character, to narrow the search even further. If you need to search for a name that contains a space character, you can put the word in quotes, „like this“.

6.3.1 Search Modes

The magnifying glass next to the search field can be used to choose on which property of a texture the search term is tested against.

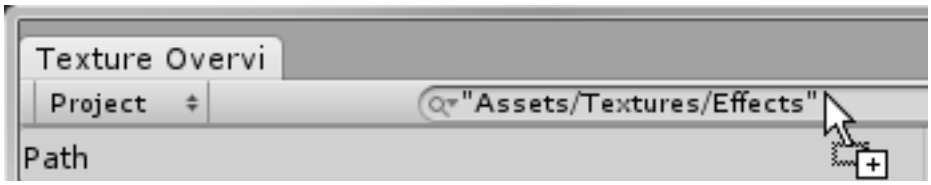
- Search in Name
- Search in Path



6.3.2 Search in Folders

If you want to search for items in a certain folder, you can switch the search mode to „Search in Path“ and then simply drag&drop one or multiple folders from the Unity project window onto the search field in Texture Overview

The following search shows all items that are located either in a folder under „Assets/Textures/Effects“.



6.3.3 Search Operators

If you're not finding what you're searching, try a search operator. Add these symbols to your search terms in the search field to gain more control over the results.

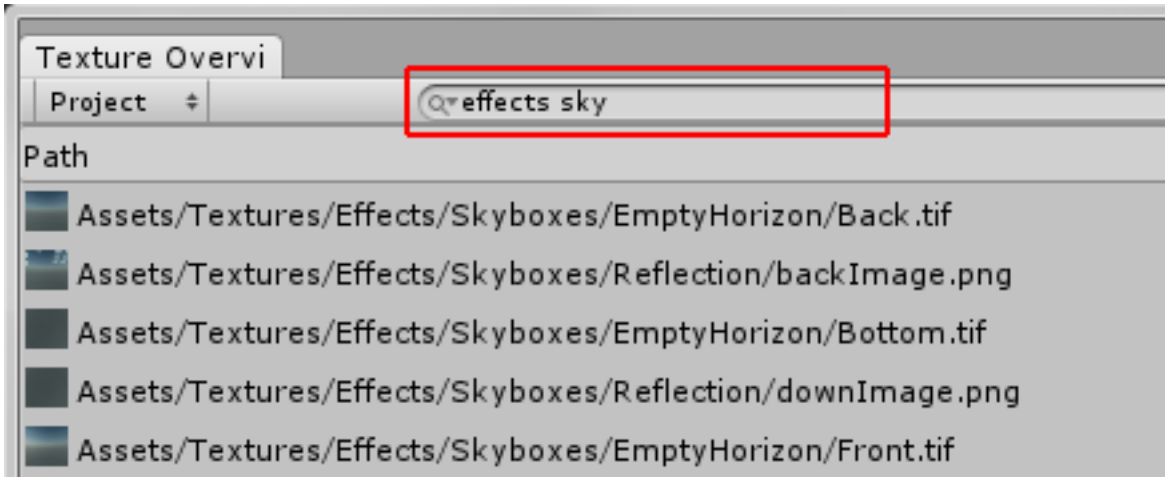
These search operators are heavily influenced by the C# and Java language, because Unity users are most likely familiar with one of these languages.

Search for either word a || b	If you want to search for items that may have just one of several words, include || between words. Without the || symbol, your results

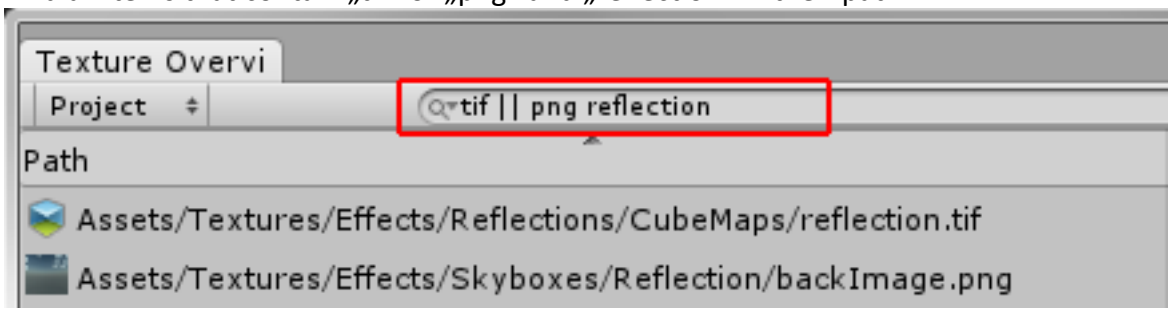
	would only items that match both terms.
Exclude a word !a	Add an exclamation mark (!) before a word to exclude all results that include that word.
Search for both words a && b	The „and“ operator is the default when no operator is specified. If you want to search for items that contain both words, you can either separate those with a space, or include the && between words.

6.3.4 Search Examples

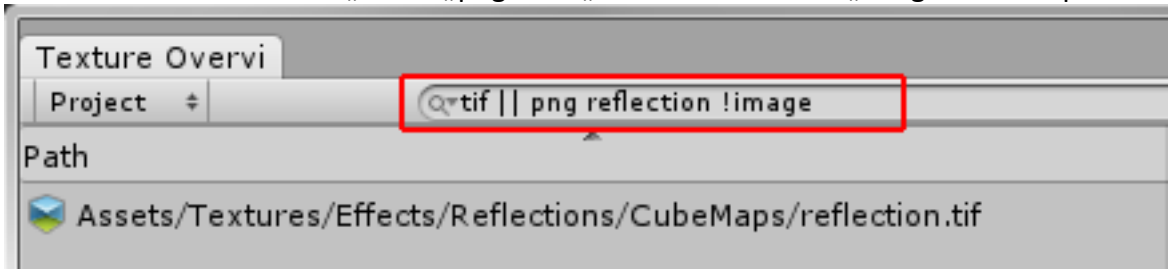
Find all items that contain „effects“ and „sky“ in their path:



Find all items that contain „tif“ or „png“ and „reflection“ in their path:



Find all items that contain „tif“ or „png“ and „reflection“ and not „image“ in their path:

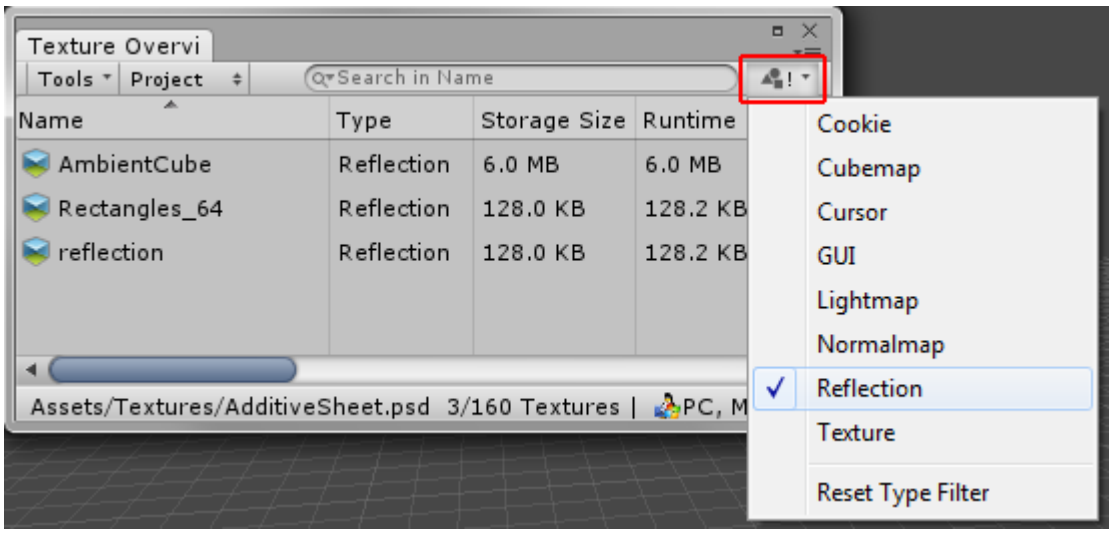


The following terms are equivalent, because the „and“ operator (&&) is the default one that gets substituted when no operator is specified:

effects sky	effects && sky
tif || png reflection	tif || png && reflect
tif || png reflection !image	tif || png && reflect && !image

6.4 Type filter

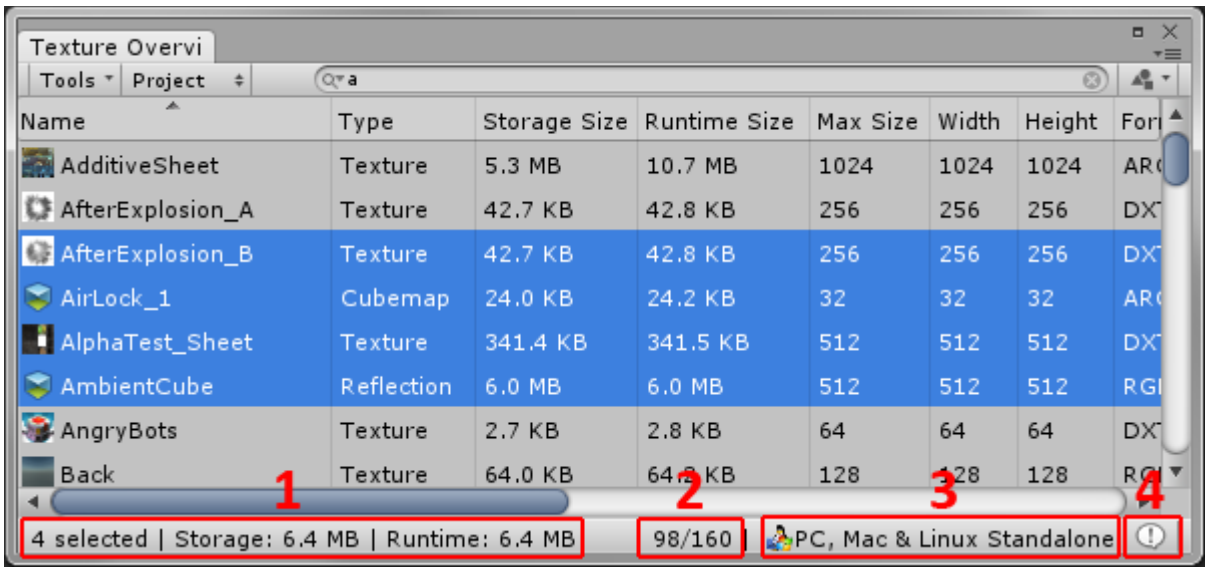
You can filter textures of a certain type. Use the  toolbar button in top-right corner to open a menu with various texture types. Select the texture types you want to display in the list. If at least one type is selected, the toolbar button  contains an exclamation mark, to indicate a texture type filter is active.



In Unity 4.3, is also displays “Sprite” in the Type Filter.

6.5 Infobar

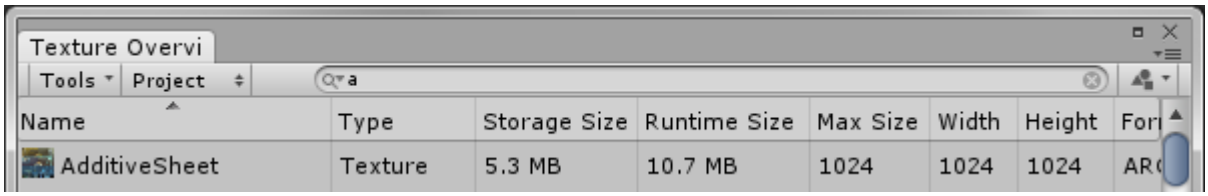
The bottom bar displays information about the current selection, the active build platform as well as how many textures are in the list.



1. Displays how many textures are currently selected in Texture Overview, followed by the summed storage- and runtime-size of the selected textures.
2. Displays how many textures are available in the list and in total. In this example 160 textures are available in total, but only 98 textures are shown due to the provided search text (an 'a').
3. Displays the active build platform, which can be changed in Unity under “File > Build Settings”. Texture Overview displays texture settings of the active build platform, therefore it's useful to see which platform is active.
4. A button to display the “About Texture Overview” dialog.

6.6 Columns

The list displays settings using columns. Several columns are hidden by default, which can be activated by clicking with the right-mouse-button on the column header.



Texture Overview supports to display the following settings:

6.6.1 Name

Asset filename without file-extention.

6.6.2 Path

The full asset path relative to the project directory, eg “Assets/GFX/Textures/Explosion.psd”.

6.6.3 Type

Indicates for what the texture will be used for. For example “Normalmap”, “GUI”, “Reflection”, “Sprite”, etc. This setting is displayed in the Unity Texture Inspector as “Texture Type”.

6.6.4 Storage Size

How many space the asset consumes on the storage device (disk).

6.6.5 Runtime Size

How many space the asset consumes during runtime in memory, which is the sum of graphics and main memory consumption.

6.6.6 Graphics Memory

How many space the asset consumes during runtime in graphics memory. Please also see advanced option Handle Rgb24 as Rgba32 for graphics memory calculus.

6.6.7 Main Memory

How many space the asset consumes during runtime in main memory. This applies to uncompressed and DXT compressed textures that have the “Read/Write Enabled” setting turned ON.

6.6.8 Source Width

Width in pixels of the original texture, prior import.

6.6.9 Source Height

Height in pixels of the original texture, prior import.

6.6.10 Max Size

Maximum allowed texture size for the currently active platform.

6.6.11 Width

Width in pixels of the imported texture for the currently active platform.

6.6.12 Resize Ratio

The ratio of the number of pixels in the source and imported texture (root mip-map). If the source texture is 1024x1024 and the imported texture is 512x512 pixels only, the resize ratio is 25% (the imported texture is only a quarter in pixel-size).

6.6.13 Format

Internal representation used for the texture for the currently active platform.

6.6.14 Format Short

Same as “Format”, but in a short form. Tech-artists and programmers most likely prefer this over the friendly readable “Format” display.

6.6.15 Compression Quality

iOS/Android: Quality of texture compression used during import in the editor. This can be either Fastest, Normal or Best. On some build targets an integer number is displayed instead, where lower numbers correspond to “Faster” and higher numbers to “Better”.

6.6.16 Wrap

Texture wrap mode (Clamp, Repeat).

6.6.17 Filter

Texture filtering mode (Point, Bilinear, Trilinear).

6.6.18 Aniso

Anisotropic filtering level. Displayed as “Aniso Level” in the Unity inspector.

6.6.19 R/W

Indicates whether “Read/Write Enabled” is checked in the Unity inspector (Advanced view).

6.6.20 PoT

Indicates whether the texture size is Power of Two.

6.6.21 Mips

Number of map-maps in the texture. 1 indicates the texture has no mip-maps (only the root “mip”).

6.6.22 Bypass sRGB Sampling

Indicates whether the texture will be converted from gamma to linear space when sampled.

6.6.23 Extension

File-extension of the source asset, eg “psd”.

6.6.24 Sprite Mode

Indicates how the sprite graphic will be extracted from the image.

6.6.25 Sprite Packing Tag

Displays the name of an optional sprite atlas into which this texture should be packed.

6.6.26 Sprite Pixel per Unit

The number of pixels of width/height in the sprite image that will correspond to one distance unit in world space.

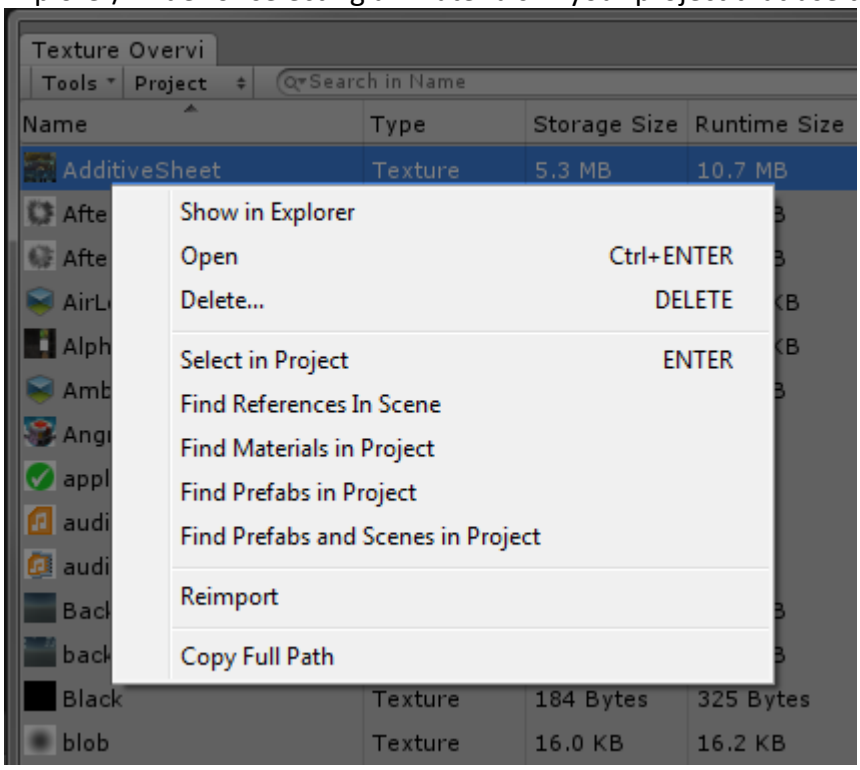
6.7 Navigation

You can scroll the list using the scrollbars, but you can also hold down the middle mouse button

and move the mouse to scroll the view.

6.8 Context Menu

Click with the right mouse button on a selection to display the context menu. The context menu provides various useful tools, such as copying the path to the clipboard, showing the texture file in Explorer/Finder or selecting all materials in your project that use the selected texture(s).



6.8.1 Show in Explorer / Reveal in Finder

Shows the selected textures in the operating-systems file-system browser.

6.8.2 Open

Opens the selected textures in the associated application.

6.8.3 Delete

Deletes the selected textures from the Unity project.

6.8.4 Select in Project

Selects the selected textures in the Unity project- and assigns them to the Unity inspector-window. This function requires to load the texture assets. If the selection contains many textures (thousands), this might take a while to complete and could even cause Unity to display an out-of-

memory error. However, a progressbar is shown during this time that can be used to cancel the operation at any point.

6.8.5 Find References in Scene

Inserts the name of the selected texture into the Hierarchy-window search field.

6.8.6 Find Materials in Project

Checks every material file in the project if it's referencing any of the selected texture(s). The result is displayed in the Find Usage Results window. This function can take a while to complete, depending on the number of materials in the project, but it can be canceled at any time.

6.8.7 Find Prefabs in Project

Checks every prefab file in the project if it's referencing any of the selected texture(s). The result is displayed in the Find Usage Results window. This function can take a while to complete, depending on the number of materials in the project, but it can be canceled at any time.

6.8.8 Find Prefabs and Scenes in Project

Checks every prefab and every scene file in the project if it's referencing any of the selected texture(s). The result is displayed in the Find Usage Results window. This function can take a while to complete, depending on the number of materials in the project, but it can be canceled at any time.

6.8.9 Reimport

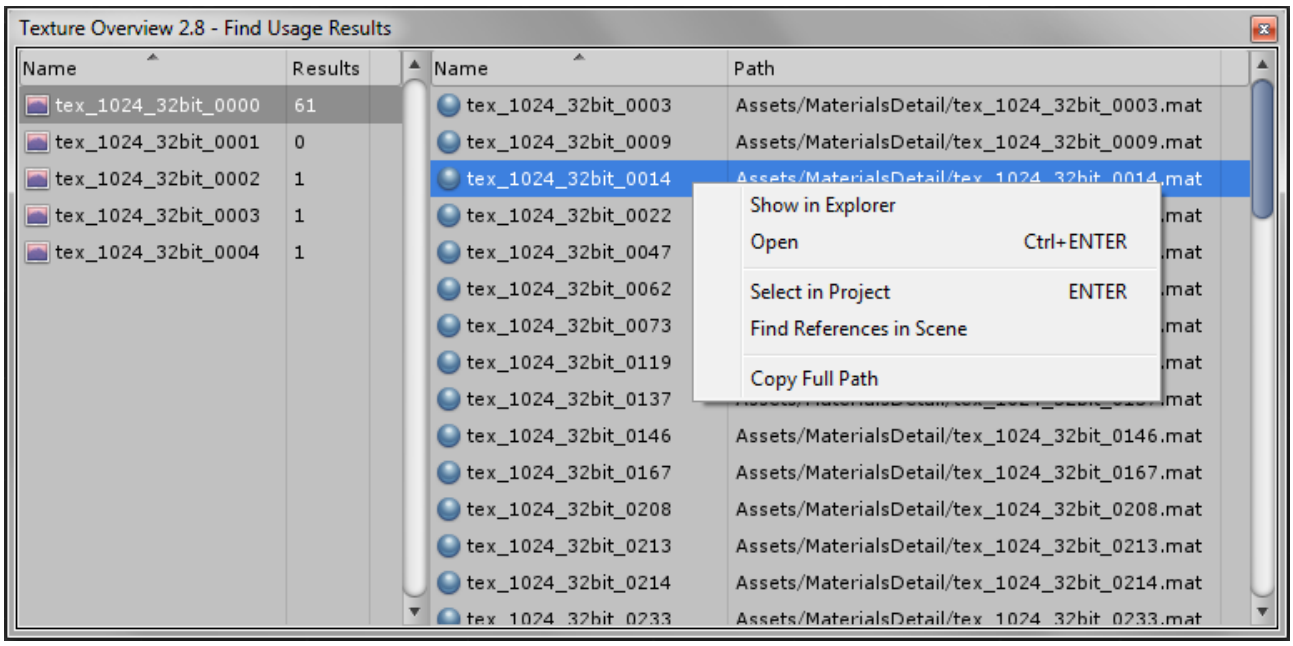
Forces an asset reimport of the selected textures.

6.8.10 Copy Full Path

Copies the asset path, including file-extension, of the selected textures into the clipboard.

6.9 Find Usage Results

The “Find Usage Results” window displays the result of a “Find … in Project” operation, such as “Find Materials in Project” and “Find Prefabs in Project”.



The list at the left side contains the textures you searched for. The list at the right side, displays which assets (materials, prefabs, scenes) use the selected texture.

The “Results” column in the left list displays how many assets have been found, that use the particular texture.

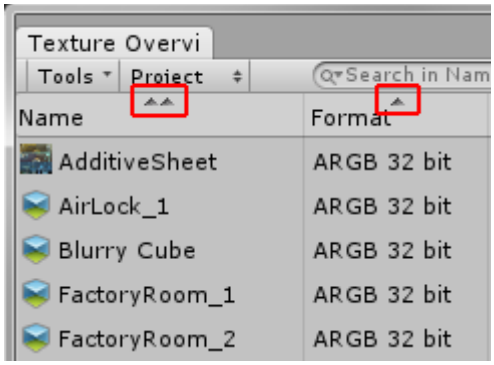
A right-click with the mouse opens a context-menu with helper functions, such as showing the asset in Explorer/Finder.

A double-click with the left mouse button assigns the selected asset to the Unity Inspector-window.

6.10 Sorting

Each column can be sorted in ascending and descending order by simply clicking with the left mouse button on the particular column header. An up/down arrow indicates the sorting mode.

You can add an additional sort criteria by holding down the Control-key and clicking another column header. This comes in handy if you sort by „Format“ for example, but still want to see textures sorted alphabetically by „Name“. In this case, you sort by Format first and add the Name column as second sort criteria.



6.11 Organize Columns

If you feel like you need columns in a different order, click with the right mouse button in the column header and choose 'Organize Columns' in the popup.

This will open a new window where you can re-arrange columns in a drag&drop fashion, as well as changing the visibility of every column.

7 FAQ

Why do textures show up as RGB24 or RGB32 even when I set them to DXT or ASTC compression?

> This occurs when you don't use „Compress assets on import“. You can find this setting in Unity „Edit > Preferences...“ under the „General“ tab.

8 Known Issues

„Please wait while Texture Overview is installed“ message stays after update.

> This issue occurs sometimes / rarely after updating Texture Overview to a new version. You can workaround this issue by just focusing another application and then switching back to Unity. If the focus-trick didn't work, restart Unity.

9 Changelog

9.1 Version 3.6

- Scene mode now also finds textures used by inactive GameObjects.
- Added AssetBundle Manifest mode. It allows you to display referenced textures in an asset bundle manifest file inside Texture Overview.
- Better error message when Texture Overview for Unity 4 is used in a project that was upgraded to Unity 5.

9.2 Version 3.5

- Fixed the following warning that occured when Texture Overview started „Could not find method 'UnityEditor.BuildPipeline.GetBuildTargetGroup(BuildTarget)'“ (Unity 5.1 beta).
- Fixed memory calculation for DXT1_Crunched and DXT5_Crunched compressed texture formats (Unity 5.1 beta).

9.3 Version 3.4

- Fixed memory calculation for ASTC compressed textures.

9.4 Version 3.3

- Added detection/handling of .exr and .hdr assets.
- Added „Tools > Advanced“ option, see Handle Rgb24 as Rgba32 for graphics memory calculus documentation.
- Added Graphics Memory column. Displays how many space the texture costs during runtime in graphics memory.
- Added Main Memory column. Displays how many space the texture costs during runtime in main memory.
- Added Graphics and Main Memory to “Memory Usage” overlay.
- Fixed Runtime and Main Memory calculation for ARGB4444, RGB565 and RGBA4444 texture formats.
- Fixed installation window somtimes displaying an error for a second, but then complete installation successfully.
- Fixed Memory Usage chart colors being all white when player settings are set to Colorspace=Linear.

9.5 Version 3.2

- Texture Overview Pro: Fixed error that occured when compiling the provided source code found in TextureOverviewSource.zip using Unity 5 DLL's.
- Texture Overview Pro: Updated readme.txt in TextureOverviewSource.zip that explains how to build Texture Overview.
- Added an „installation window“ that appears when open Texture Overview after having imported a new version from the Asset Store. The installation window is repsonsible to install the proper plugin for your Unity version.
- Renamed column „Sprite Pixels to Units“ to „Sprite Pixels per Unit“ as it's found in Unity's documentation.

9.6 Version 3.1

- Fix: Fixed the following warning, which started to appear using Unity 5 beta 17: "Invalid AssetDatabase path: <FullPath>/UnityEditor.UI.dll. Use path relative to the project folder."

9.7 Version 3.0

- **Texture Overview 3.0 requires Unity 4.3 or newer, because it now also displays „Sprite“ related settings.**
- New: Added „Sprite Mode“ column.
- New: Added „Sprite Packing Tag“ column.
- New: Added „Sprite Pixel per Unit“ column.
- New: Added an error dialog when you try to open Texture Overview 3.0 using an older version than Unity 4.3.
- Change: Moved .cache file from plugin installation directory to project „Library“ directory. Texture Overview 3.0 will automatically move this file from the old to the new location.
- Fix: Fixed rare issue where the .cache file wasn't updated after a texture import.

9.8 Version 2.9

- Fix: The plugin displayed the following error using Unity 4.6 open beta, which caused the plugin to start much slower than usual: "Library/assetDatabase3 not supported, seems not to be an assetDatabase3 file."

9.9 Version 2.8

- New: Added „Find Prefabs and Scenes in Project“ function to context menu.
- New: Added „Find Usage Results“ window, which displays the result of „Find Materials in Project“ and „Find Prefabs in Project“ search operations.
- Fix: „Find Prefabs in Project“ caused an out-of-memory editor crash in some/big projects.

9.10 Version 2.7

- New: Added Memory Usage overlay window. You can open it from the „Tools“ popup menu. It displays how much memory certain texture types are using.
- Fix: OSX Editor crash when build target is set to iOS and the project contains thousands of textures.
- Fix: „RuntimeSize“ was doubling the amount of memory when the texture is set to readable always, but it should do this only for Uncompressed, DTX and Alpha8 formats. (correct value is applied the next to you import that texture).
- Fix: „NullReferenceException at TextureOverview.MainWindow.OnSelectionChange“ occasionally occured when pressing Play in the editor.
- Fix: OSX displays a resize grabber in the lower right corner of the Textur Overview window, which was overlapping the „Info“ button. Added some space to prevent that overlap.
- Fix: „Name“ and „Path“ columns were using CurrentCultureIgnoreCase for comparison, but it's recommended to compare path names using OrdinalIgnoreCase. This fix also makes sorting by „Name“ or „Path“ significantly faster when the project contains 10000 and more textures.

9.11 Version 2.6

- New: Texture Overview **Pro** now contains the full C# source code to build Texture Overview.
- Fix: „Export to CSV“ generated broken CSV when a comma was in the asset path.
- Change: I replaced 3rd party icons with selfmade ones to not cause any license issues, now that the source code is available and therefore the icons as well.

9.12 Version 2.5

- Fix: „Runtime Size“ reported negative numbers for textures in ETC2 formats.
- Fix: „Format Short“ for ETC2 formats showed a number rather than the actual texture format as short string.
- New: Last column sorting information now gets restored when the plugin starts.

9.13 Version 2.4

- Fix: Plugin starts much quicker now, see „Cache File (the technical part)“ section in this document. Only the first start might take a while to complete.
- New: Added "Runtime Size" column, which displays how many space textures consume during runtime in memory. The “Read/Write Enabled” setting is respected in the size calculation.
- New: Added "Compression Quality" column, which displays the Quality of texture compression used during import in the editor (iOS/Android).
- New: Added "Bypass sRGB Sampling" column, which displays whether the texture will be converted from gamma to linear space when sampled.
- New: Added “Scene” to popup menu in top toolbar, which displays textures used in the opened scene.
- Fix: The „Playmode tint“ setting in Unity Preferences is now correctly handled in Texture Overview.
- Fix: „Filter by Type“ wasn't able to correctly filter textures with „Texture Type = Advanced“ and „Generate Cubemap“ to something other than „None“.
- Fix: The „Color Space“ player-setting no longer impacts the icons in Texture Overview.
- Fix: Sometimes a „Getting control 0's position in a group with only 0 controls when doing a repaint“ occured when the plugin automatically opens with Unity and the Unity „New Version“ dialog appeared while Texture Overview was busy loading texture settings.
- New: Pressing a key, while the list has the focus, jumps to the item of the texture that starts with the key.
- New: Added key shortcuts for a few context-menu functions (Open, Select in Project, Delete)
- New: Added „Export CSV“ to „Tools“ popup-menu. The exported CSV (comma separated) file can be used to generate fancy graphs in spreadsheet applications to visualize memory usage for example.
- New: Pressing „Enter“ now assigns the selected textures to the Unity texture inspector.
- New: Added links to Texture Overview asset store and forum pages in About Dialog.

9.14 Version 2.3

- New: The search field accepts drag&drop from the Unity project window. This makes it much easier to filter textures by path, no typing needed anymore.
- New: The search supports basic search operators now: „add“, „or“ and „not“
- Fix: The search mode (Search by Name, Path) has been lost every time Texture Overview has been closed.
- Change: Increased the width of the search field.
- Change: Renamed „Filter by Name“ to „Search in Name“, etc

9.15 Version 2.2

- Fix: Lots of memory optimizations done. Texture Overview needs to load textures into memory, then read their properties to display them. This caused a „Out of Memory“ fatal error when several thousand textures are in the project and memory consumption went near 4gb. Now, textures get properly unloaded once their properties have been read and thus are no longer required.
- Fix: If a texture couldn't be loaded, Texture Overview occasionally displayed a „null-reference“ error-dialog.
- Fix: Texture Overview got slower over time, the longer it was used the slower it got. This was noticable when having 4000 textures in Texture Overview, working with it a couple of minutes, then using „Ctrl+A“ to select all items. This took a couple seconds to complete. Now it's super fast again.

9.16 Version 2.1

- Fix: Some textures display “???” as texture type.
- Fix: Added missing types to the texture type filter.
- Fix: Context menu item “Delete” didn't work when the Unity project pane was using “Two Column Layout” and a folder was selected. In this case “Texture Overview” asked to delete the folder, rather than the textures selected in “Texture Overview”.
- Fix: Context menu item “Show in Explorer” is now shown as “Reveal in Finder” when running Unity editor on MacOS.
- Fix: Text inside the list was sometimes cropped vertically.
- Fix: Inactive selection color when using pro skin (dark theme) didn't really match the color used in Unity itself for an inactive selection.

9.17 Version 2.0

- Initial public release

10 Contact

If you have a question, want to provide feedback or maybe suggest a new feature, contact me at unitytools@console-dev.de

You can also write me a message in the official Texture Overview thread in the Unity forums or send me a private message using the forum.

http://forum.unity3d.com/threads/197707-Released-Texture-Overview-Plugin