

# AudioClip Explorer for Unity

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## 1 Introduction

AudioClip Explorer for Unity empowers you to **edit multiple AudioClip importer settings simultaneously**, change settings from thousands of clips with little to no effort.

It provides an **excellent overview of AudioClip's** available in the project, a certain folder, the current scene or any selected asset in the Hierarchy- and Project-View. You can sort every column, which makes it enormously easy to find which clips consume the most memory for example.

A video demonstration can be found at <https://www.youtube.com/watch?v=vhCPWC7B0yg>

## 2 Features

- Modify settings of multiple AudioClips simultaneously.
- Apply and revert settings of multiple AudioClips at once.
- Sort by settings, for example to find clips that consume the most memory.
- Find prefabs that use a particular AudioClip.
- List clips from your project, a folder or of any selected asset
- Export content as CSV to generate fancy graphs about memory usage in spreadsheet applications.

AudioClip Explorer works with large amounts of audio files. It's been tested in a project with 20000 audio clips, that make up more than 16 GB of imported data.

## 3 Requirements

Unity 4 1.2 or higher is required. AudioClip Explorer works with the standard and professional version of Unity.

## 4 Installation

The files in the AudioClip Explorer package should be stored in "Assets/Editor/AudioClipExplorer". Once you imported the package, you can find "AudioClip Explorer" in the main menu under the "Windows" popup.

In case you want to it be located in a different popup, you can change the location in "Assets/Editor/AudioClipExplorer/AudioClipExplorerMenuItem.cs". Simply change the line `[MenuItem("Window/AudioClip Explorer")]` to whatever fits your need.

## 4.1 Source Code

If you've purchased "AudioClip Explorer Pro", the package also contains the full C# source code to build AudioClip Explorer. 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/AudioClipExplorer/AudioClipExplorerSource.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 4.2.1. You can find instructions how to build the project in the "readme.txt", which is part of "AudioClipExplorerSource.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 AudioClip Explorer for the first time might take a while to complete, depending on the number of audio clips in your project. During start-up, the plugin reads settings of audio clips in your project and stores them in a persistent [Cache File](#). The next time you open the plugin, it will be much faster!

### 5.1 Cache File

AudioClip Explorer automatically creates a file called "AudioClipExplorer.cache" in the plugin installation directory.

"AudioClipExplorer.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 audio clip settings that have been read by AudioClip Explorer. Caching this information allows AudioClip Explorer to start much faster when you open it another time, since the plugin does not need to read all the audio clip settings over and over again, which is an expensive operation. Instead, it only needs to check if audio clips have been modified since the last start of the plugin. If clips have not changed, AudioClip Explorer can use settings from the cache file, which is fast. If a clip did change, AudioClip Explorer will read the new settings and update its cache file, which is slower.

## 6 Usage

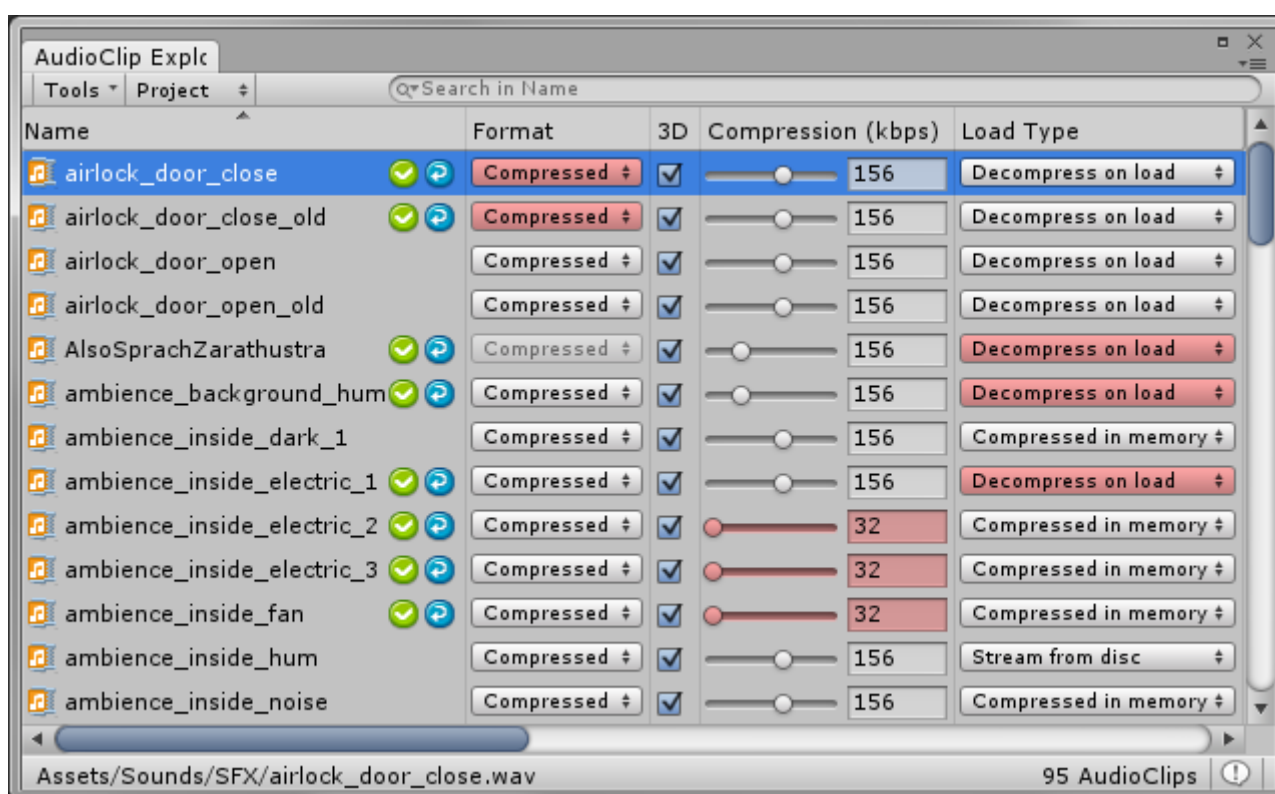
AudioClip Explorer displays AudioClip import settings as a table view. Each column represents one setting you also find in the Unity AudioClip Import Inspector or AudioClip Preview Window.

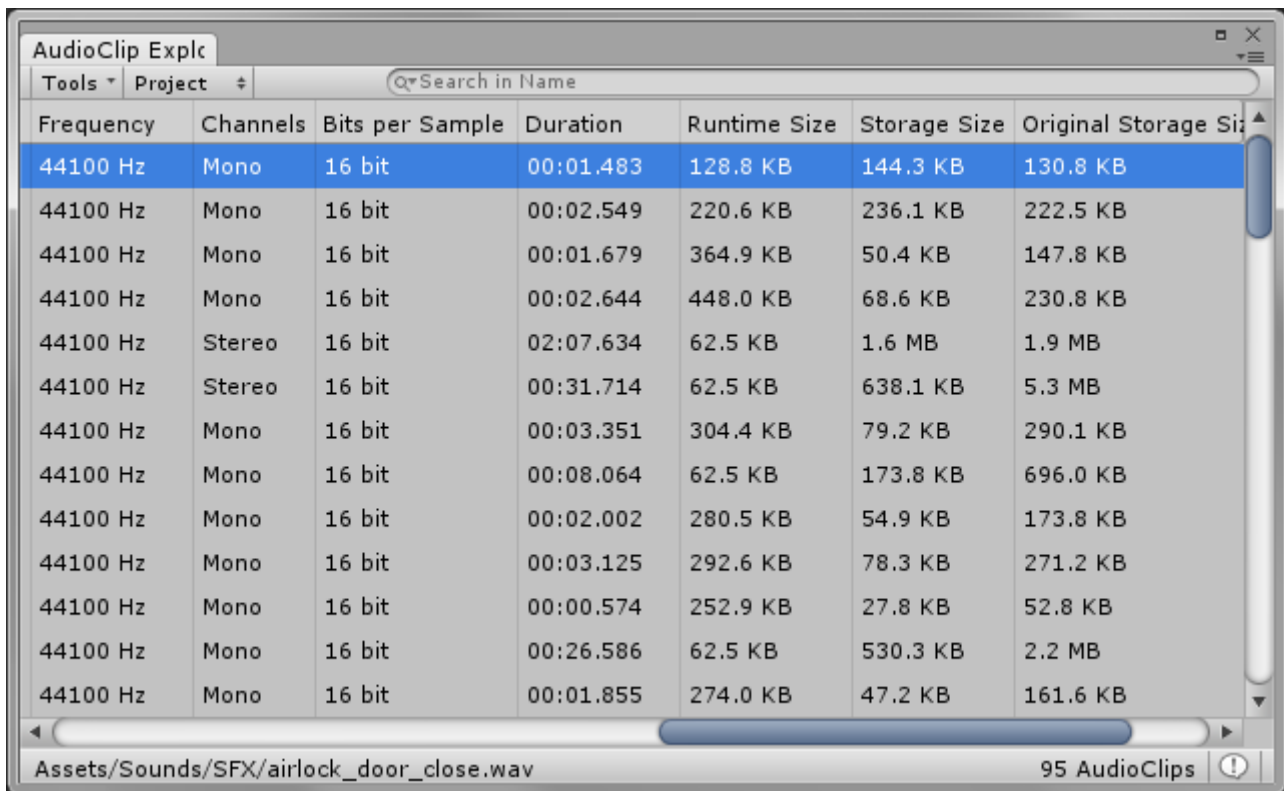
## 6.1 Changing AudioClip Settings

In order to change audio clip settings, you have to select the item you want to change. You can select multiple items, which will then change settings of the entire selection. This makes it quite easy to change settings from hundreds of AudioClips with little effort.

As soon as you change settings, modifications are highlighted in a different color and an  (Apply) and  (Revert) button appear in the most left column. Use the Apply button to commit the changes to Unity.

If you want to apply or revert multiple clips at once, you can either select the items and then click Apply/Revert, or use the "Apply all" / "Revert All" buttons from the "Tools" popup in AudioClip Explorer.





Frequency	Channels	Bits per Sample	Duration	Runtime Size	Storage Size	Original Storage Size
44100 Hz	Mono	16 bit	00:01.483	128.8 KB	144.3 KB	130.8 KB
44100 Hz	Mono	16 bit	00:02.549	220.6 KB	236.1 KB	222.5 KB
44100 Hz	Mono	16 bit	00:01.679	364.9 KB	50.4 KB	147.8 KB
44100 Hz	Mono	16 bit	00:02.644	448.0 KB	68.6 KB	230.8 KB
44100 Hz	Stereo	16 bit	02:07.634	62.5 KB	1.6 MB	1.9 MB
44100 Hz	Stereo	16 bit	00:31.714	62.5 KB	638.1 KB	5.3 MB
44100 Hz	Mono	16 bit	00:03.351	304.4 KB	79.2 KB	290.1 KB
44100 Hz	Mono	16 bit	00:08.064	62.5 KB	173.8 KB	696.0 KB
44100 Hz	Mono	16 bit	00:02.002	280.5 KB	54.9 KB	173.8 KB
44100 Hz	Mono	16 bit	00:03.125	292.6 KB	78.3 KB	271.2 KB
44100 Hz	Mono	16 bit	00:00.574	252.9 KB	27.8 KB	52.8 KB
44100 Hz	Mono	16 bit	00:26.586	62.5 KB	530.3 KB	2.2 MB
44100 Hz	Mono	16 bit	00:01.855	274.0 KB	47.2 KB	161.6 KB

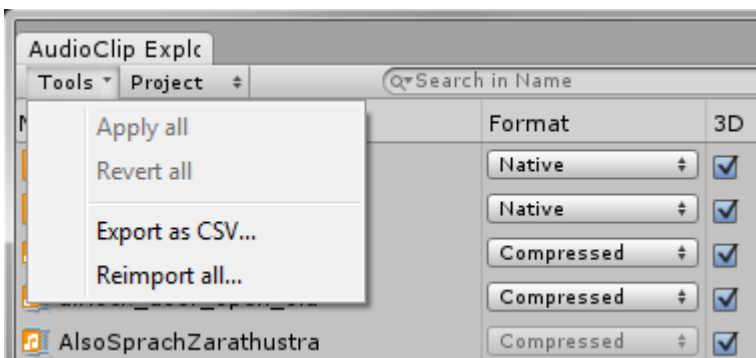
Assets/Sounds/SFX/airlock\_door\_close.wav 95 AudioClips

## 6.2 Navigation

You can scroll the list using the scroll-bars, but you can also hold down the middle mouse button and move the mouse to scroll the view.

## 6.3 Tools

You can find several helpers under the „Tools“ popup menu in AudioClip Explorer.



### 6.3.1 Apply/Revert all

If you want to apply or revert all modifications at once, you can use the „Apply all“ and „Revert all“ buttons.

### 6.3.2 Export CSV

Exports 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:

Import

Character set: Unicode (UTF-8)

Language: English (USA)

From row: 1

Separator options

☐ Fixed width

☒ Separated by

☐ Tab ☒ Comma ☐ Other

☐ Semicolon ☐ Space

☐ Merge delimiters

Text delimiter: "

Other options

☒ Quoted field as text

☐ Detect special numbers

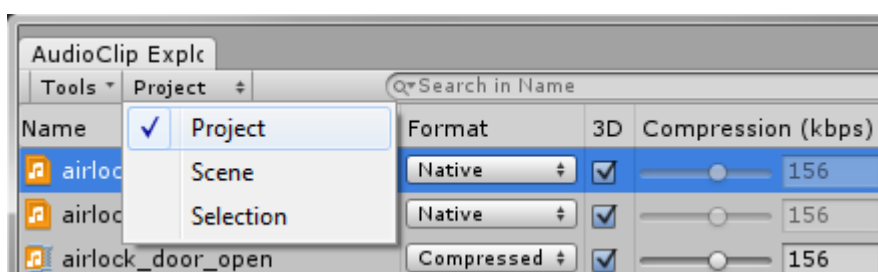
### 6.3.3 Reimport all

This button forces a reimport of all audioclips listed in AudioClip Explorer.

## 6.4 Project, Scene and Selection Mode

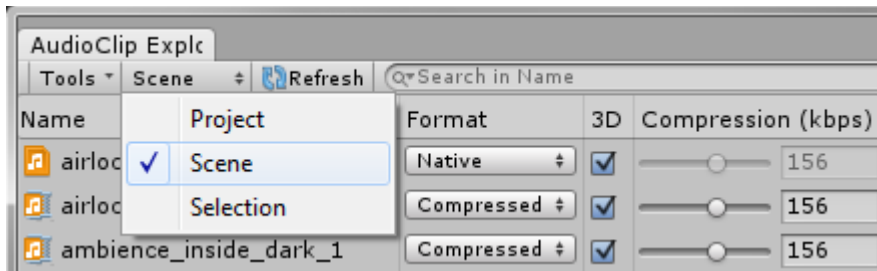
AudioClip Explorer can display clips from the entire Project, the currently opened scene or any selected asset. You can switch the mode using the popup shown below.

### 6.4.1 Project Mode



The "Project" option lists all clips which are available in the project, this is all clips located under the projects „Assets“ folder.

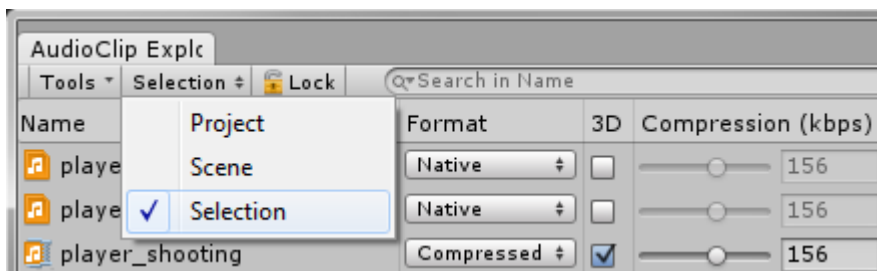
### 6.4.2 Scene Mode



"Scene" lists all clips that are currently referenced in the opened scene. Changes to the scene or prefabs are not automatically reflected in the AudioClip Explorer view, because finding which clips are used in the scene is an expensive operation and I don't want the plugin to have any performance impact on the usual workflow within Unity.

Therefore you find a "Refresh" button that appears when you switch to "Scene" mode. Pressing "Refresh" gets a new snapshot of all clips that are referenced in the scene at the moment you press the button.

### 6.4.3 Selection Mode



"Selection" can be used to make AudioClip Explorer listen to selection changes in Unity. Whenever an asset gets selected in the Project-, or a GameObject in the Hierachy-window, AudioClip Explorer checks which clips this particular asset is using and displays those.

If you want to stick with a selection, click the „Lock“ button. If locked, selection changes in the Project- and Hierachy-window don't change the list in AudioClip Explorer anymore.

## 6.5 Search

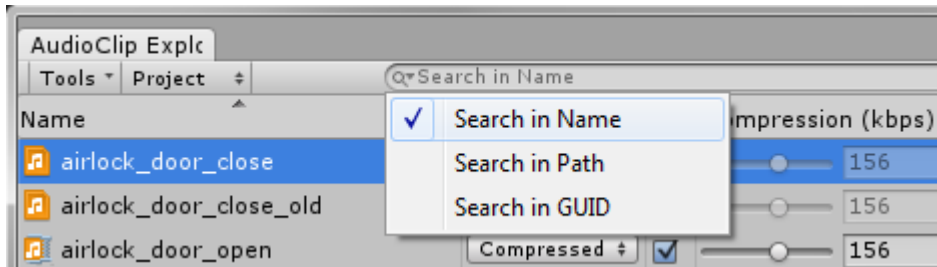
The textfield in the top bar can be used to search the list. The search checks if any of the provided words occur in the „Name“ for example (depends on search mode). The search performs case insensitive.

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“.

### 6.5.1 Search Modes

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

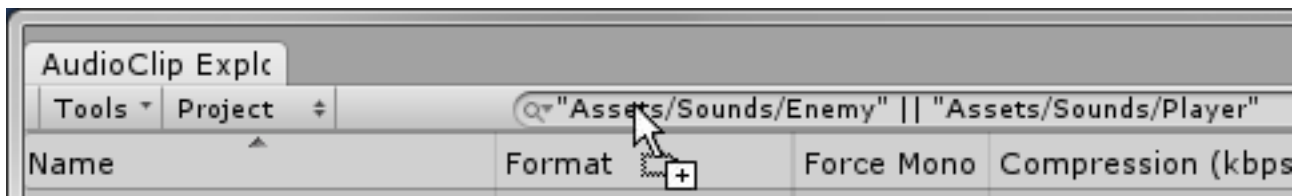
- Search in Name
- Search in Path
- Search in GUID



### 6.5.2 Search in Folders

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

The following search shows all items that are located either in a folder under „Assets/Sounds/Enemy“ or „Assets/Sounds/Player“.



### 6.5.3 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.

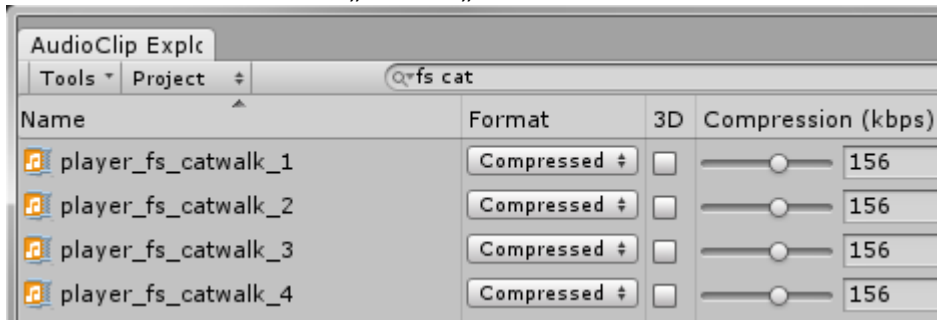
Search for either word a    b	If you want to search for items that may have just one of several words, include    between words. Without the    symbol, your results would only items that match both terms.
Exclude a word !a	Add an exclamation mark (!) before a word to exclude all results that include that word.
Search for both words	The „and“ operator is the default when no operator is specified. If you



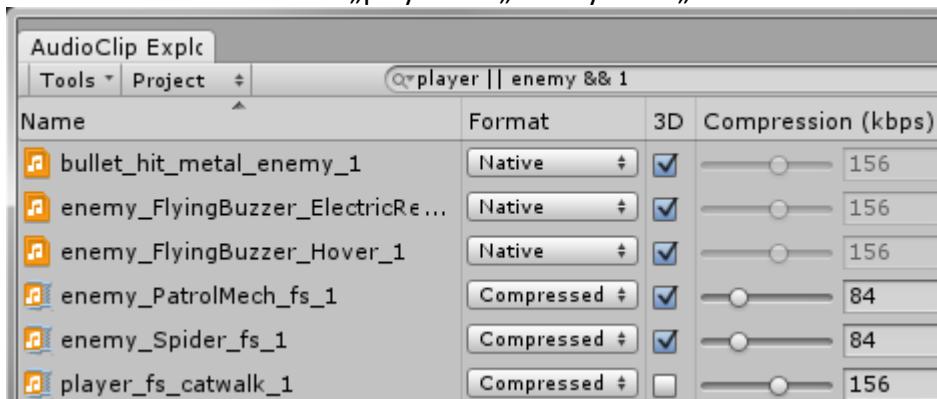
a && b	want to search for items that contain both words, either include the && between words or simply leave it out.
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### 6.5.4 Search Examples

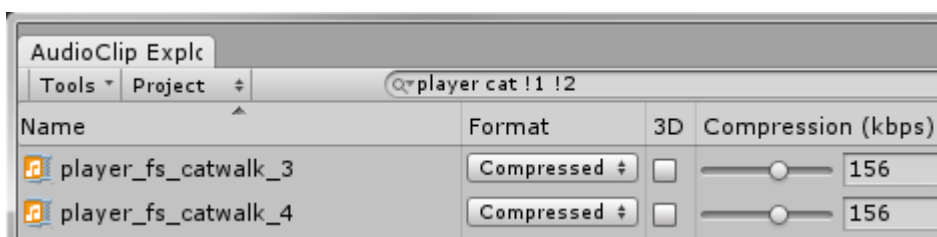
Find all items that contain „fs“ and „cat“ in their name:



Find all items that contain „player“ or „enemy“ and „1“ in their name:



Find all items that contain „player“ and „cat“ and not „1“ and not „2“ in their name:



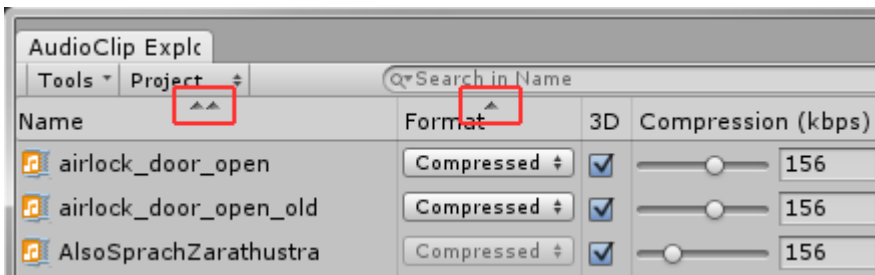
These terms are equivalent, because the AND operator (&&) is the default one that gets substituted when no operator is specified:

fs cat	fs && cat
player    enemy 1	player    enemy && 1
player cat !1 !2	player && cat && !1 && !2

## 6.6 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 icon indicates the sort mode.

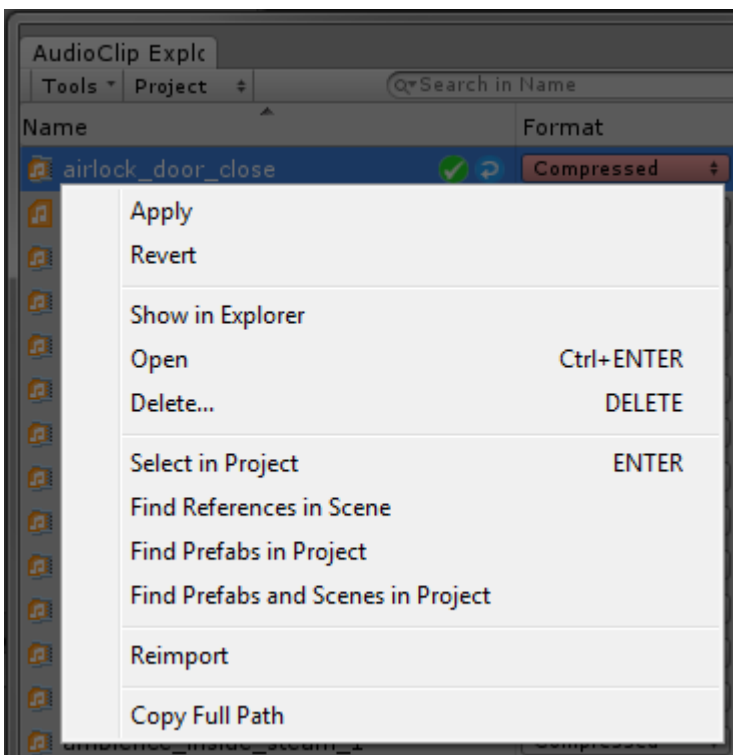
You can add an additional sort criteria by holding down the Control-key and clicking another column header. This comes in handy if you sort by Format for example, but still want to see clips sorted alphabetically by their name. In this case, you sort by Format first and add the Name column as second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



Sorting is a very powerful feature and can be used to find which audioclips consume the most memory very easily.

## 6.7 Context Menu

Click with the right mouse button on a clip to display the context menu. The context menu provides various tools related to the current selection you might find useful, such as copying the clip name into the clipboard, showing the clip file in Explorer/Finder or selecting all prefabs in your project that use the selected clips.



### **6.7.1 Apply**

Apply modifications of selected audio clips in AudioClip Explorer to Unity. This will make all modifications “visible” to Unity.

### **6.7.2 Revert**

Revert modifications of selected audio clips.

### **6.7.3 Show in Explorer / Reveal in Finder**

Opens a file-browser and displays the directory where the selected audio clips are located.

### **6.7.4 Open**

Opens the selected audio clips with the default application.

### **6.7.5 Delete**

Deletes the selected audio clips from the Unity project.

### **6.7.6 Select in Project**

Selects the selected audio clips from AudioClip Explorer in the Unity project window.

### **6.7.7 Find References in Scene**

Highlights GameObject's in the Scene-View that use the selected audio clips.

### **6.7.8 Find Prefabs in Project**

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

### **6.7.9 Find Prefabs and Scenes in Project**

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

### **6.7.10 Reimport**

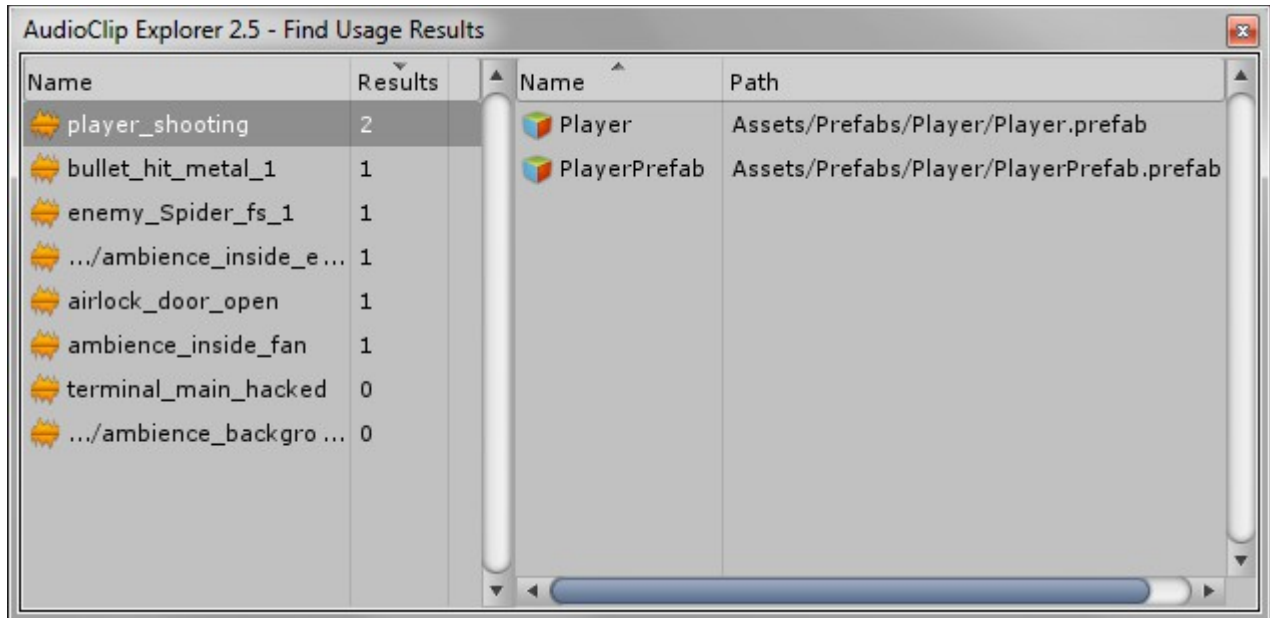
Forces a re-import on the selected audio clips.

### 6.7.11 Copy Full Path

Copies the full asset path, relative to the “Assets” folder, to the clipboard.

## 6.8 Find Usage Results

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



The list at the left side contains the audio clips you searched for. The list at the right side, displays which assets (prefabs, scenes) use the selected clip you searched for.

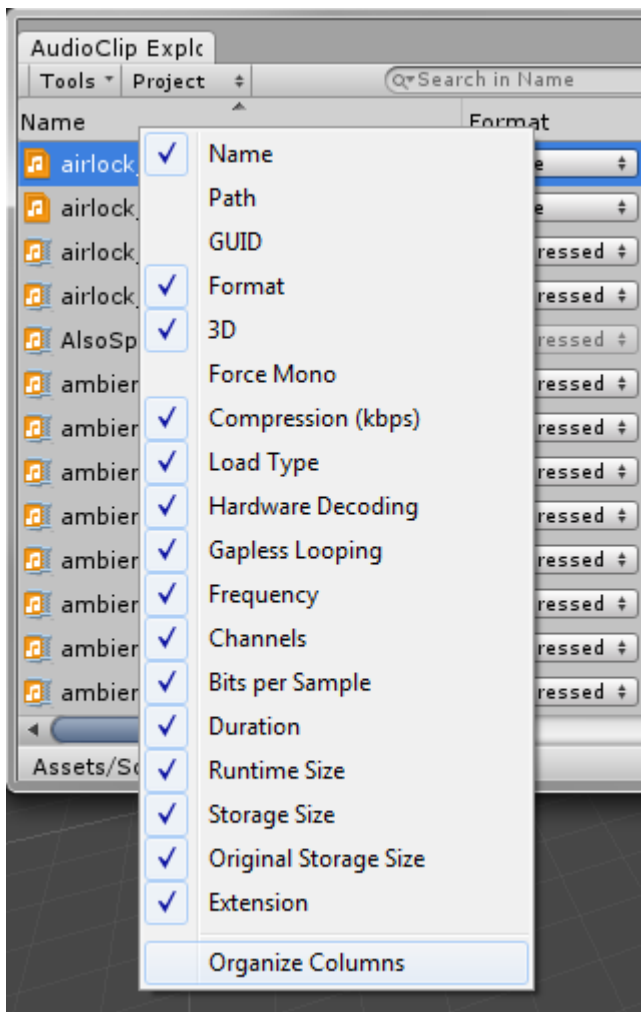
The “Results” column in the left list displays how many assets have been found, that use the particular clip.

A right-click with the mouse opens a context-menu with helpers 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.

## 6.9 Organize Header 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 bring up a new window where you can re-arrange columns in drag&drop fashion, as well as changing the visibility of every column.

## 7 Changelog

### 7.1 Version 2.5

- New: Added „[Find Usage Results](#)“ window, which displays the result of „Find Prefabs in Project“ and „Find Prefabs and Scenes in Project“ search operations.
- Fix: The plugin was ignoring clips with the file-extension .aiff (.aif worked though)
- Fix: The Apply and Revert icons were missing sometimes when switching playmode.
- 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."

## 7.2 Version 2.4

- Fix: Don't crash AudioClip Explorer if an AudioImporter cannot be loaded, output an error message and display the item in red instead.
- Fix: "NullReferenceException at AudioClipExplorer.MainWindow.OnSelectionChange" occasionally occurred when pressing Play in the editor.
- Fix: OSX displays a resize grabber in the lower right corner of the AudioClip Explorer window, which was overlapping the "Info" button. Added some space to prevent that overlap.
- Fix: „Name“ column were using CurrentCultureIgnoreCase for comparison, but it's recommended to compare path names using OrdinalIgnoreCase. This fix also makes sorting by „Name“ significantly faster when the project contains 10000 and more audio clips.

## 7.3 Version 2.3

- New: AudioClip Explorer **Pro** now contains the full C# source code to build AudioClip Explorer.
- New: Last column sorting information now gets restored when the plugin starts.
- Fix: „Export to CSV“ generated broken CSV when a comma was in the asset path.
- Change: I replaced 3<sup>rd</sup> party icons with selfmade ones to not cause any license issues, now that the source code is available and therefore the icons as well.

## 7.4 Version 2.2

- Fix: Plugin starts much quicker now, see [Cache File](#) section in this document. Only the first start might take a while to complete. I also removed the „Load Details“ functionality, which is no longer needed with the cache file.
- Fix: The „Playmode tint“ setting in Unity Preferences is now correctly handled in AudioClip Explorer.
- Fix: The „Color Space“ player-setting no longer impacts the icons in AudioClip Explorer.
- Fix: „Unable to find style " in skin 'DarkSkin' used“ warning sometimes turned the plugin being unresponsive.
- 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 a key, while the list has the focus, jumps to the item of the clip that starts with the key.
- New: Added key shortcuts for a few context-menu functions (Open, Select in Project, Delete)
- New: Pressing „Enter“ now assigns the selected clips to the Unity inspector.
- New: Added links to AudioClip Explorer asset store and forum pages in About Dialog.

## 7.5 Version 2.1

- New: The search field accepts drag&drop from the Unity project window. This makes it much easier to filter clips by path, no typing needed anymore.
- New: The search supports basic search operators now: „add“, „or“ and „not“
- Fix: The „Load all“ button caused an „Out of Memory“ error when several thousand clips were in the project and memory consumption went near 4 GB. Now, clips get properly unloaded once their properties have been read and thus are no longer required. AudioClip Explorer has been successfully tested with a project containing more than 20000 clips that make up more than 16 GB of imported data.
- Fix: When AudioClip Explorer was docked but hidden, an `NullReferenceException` occurred during playmode-changes.
- Fix: The summed „StorageSize“ and „RuntimeSize „in the bottom bar shows incorrect sizes when the project contains more than 2 GB of clips.
- Fix: The filter mode (Filter by Name, Path, GUID) has been lost every time AudioClip Explorer has been closed.
- Change: The „Loading“ progressbar now also displays the number of remaining items to load.
- Change: Increased the width of the filter textfield.
- Change: Context menu button „Find References in Scene“ gets disabled when more than one clip is selected.
- Change: Renamed „Filter by Name“ etc to „Search in Name“.
- New: If a search yields no results, the list displays a note that different search modes are available.

## 7.6 Version 2.0

- New: Added “Load all automatically” option to the “Tools” pop-up. If checked, AudioClip Explorer loads clip details automatically (the details where otherwise the “Load” button is displayed).
- New: Added a cancelable progress bar while audio clip importer settings are loaded, which happens when you start the plugin or on play-mode changes.
- New: Added “Reimport all” option to the “Tools” pop-up. This will force a reimport of all clips listed in AudioClip Explorer.
- 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 AudioClip Explorer asked to delete the folder, rather than the clips selected in AudioClip Explorer.
- Fix: Context menu item “Show in Explorer” wasn't 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.

## 7.7 Version 1.9

- New: Added 'Find Prefabs in Project' context menu button.
- Fix: Sorting by 'Load Type' column works now.
- Fix: Clips in 'Audio Format = MPEG' were displaying '0 Bits' as 'Bits per Sample' . Now an empty string is displayed, to match the Unity behaviour (Bits per sample isn't displayed in the unity preview pane for clips in MPEG format).
- Change: Moved 'About' button from the tools menu to the lower-right window corner, to be consistent with my other plugins.

## 7.8 Version 1.8

- Initial public release

## 8 Contact

If you have a question, want to give feedback or maybe suggest a new feature, contact me at [unitytools@console-dev.de](mailto:unitytools@console-dev.de)

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

<http://forum.unity3d.com/threads/186018-Plugin-AudioClip-Explorer-%28edit-multiple-clips-simultaneously%29>