

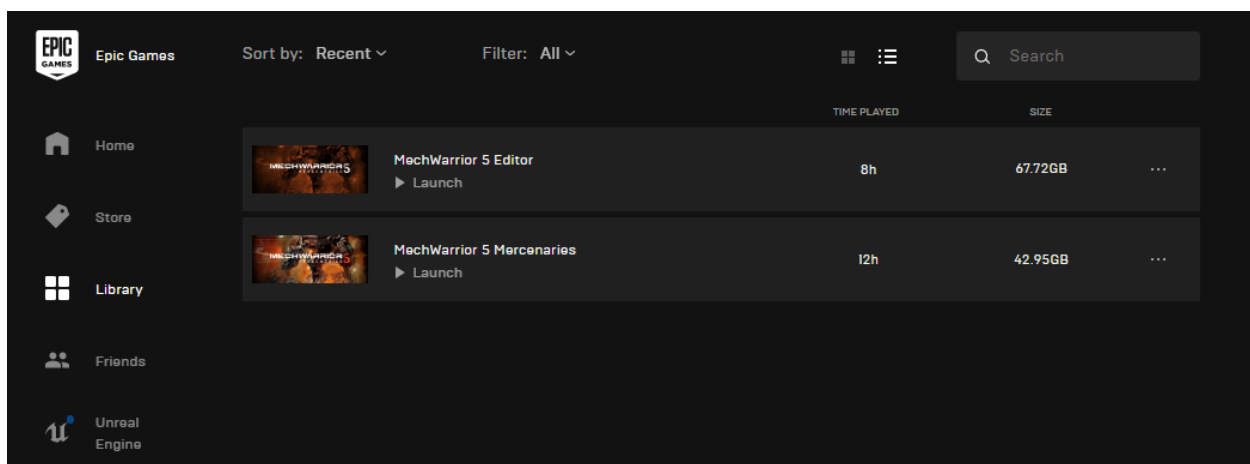
MechWarrior 5: Mercenaries Mod Editor Guide (v1)

To access the MechWarrior 5: Mercenaries Mod Editor through the Epic Games Store, your Epic account must own the [MechWarrior 5: Mercenaries game](#).

Use of the Mod Editor is subject to your agreement to the Mod Editor End User License Agreement (https://mw5mercs.com/static/docs/MW5_Mod_Editor_EULA.pdf).

As an owner of MechWarrior 5: Mercenaries, you will already have access to the MechWarrior 5 Editor package in your Epic Launcher Library. **If possible, we strongly recommend installing the Mod Editor onto an SSD.** We also **strongly recommend** that you set up some kind of version control or reliable backup system before beginning any serious mod work.

This initial release of the MW5 Mod Editor **does not** include support for packaging, distributing, or installing Mods. Support for packaging mods and integrating them into the game will be coming in a future update. However, with this initial release of the Mod Editor you will immediately be able to start planning and creating your mods!



Using the MW5 Mod Editor

While a comprehensive rundown on Unreal Engine 4 is well beyond the scope of this initial guide, we will run through some of the basic information you'll need for becoming familiar with the Mod Editor. The final section of this guide will also cover what is required for making audio mods for MW5 using the Wwise Authoring software from Audiokinetic.

By the end of this guide we will have covered:

- Creating a basic Test Map
- Spawning AI 'Mechs in a Test Map
- Spawning yourself as a 'Mech in a Test Map
- Creating a new 'Level 6' Weapon

- Modifying a 'Mech Loadout asset
- Setting up Wwise to support audio modding

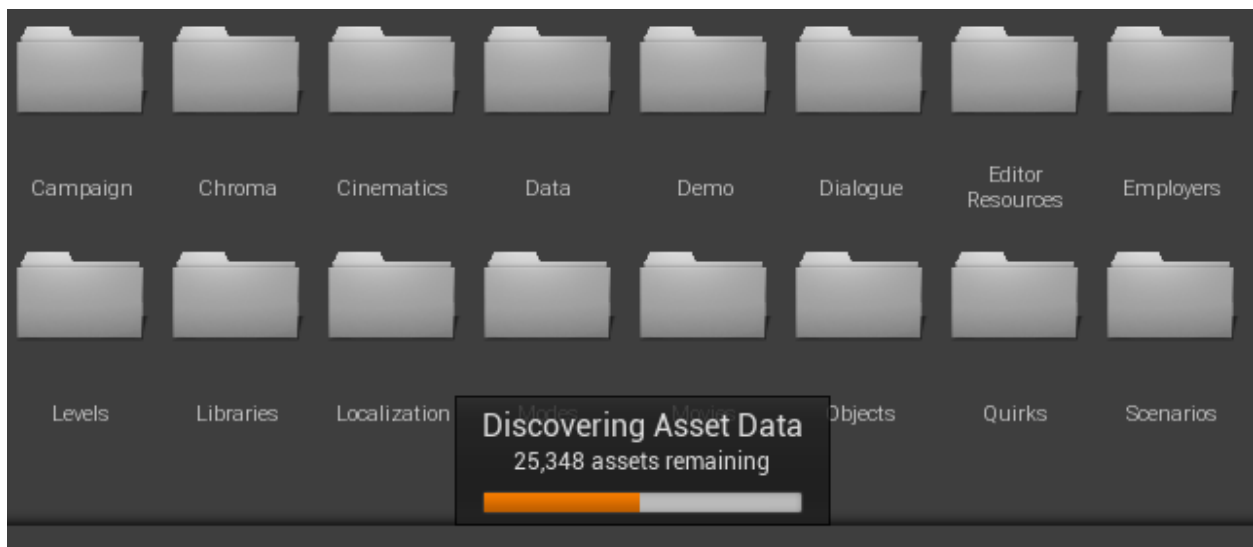
Beyond this guide, there is a wealth of information and a huge community of UE4 developers out there to explore.

Here are just some of those great resources to get started:

- Unreal Engine 4 Documentation: <https://docs.unrealengine.com/en-US/index.html>
- Unreal Engine 4 Online Learning: <https://www.unrealengine.com/en-US/onlinelearning>
- Official 'Getting Started with UE4' Playlist on YouTube: https://www.youtube.com/user/UnrealDevelopmentKit/playlists?view=50&sort=dd&shelf_id=17
- Official 'Live Training' Playlist on YouTube: https://www.youtube.com/playlist?list=PLZlv_N0_O1ga0aV9jVqJgog0VWz1cLL5f

Initial Launch

On launching the Editor you may see a popup that the Editor is Discovering Asset Data. Let this process - and the subsequent process of Loading MechWarrior Assets - fully complete before you start doing any work.



By default, the Editor will load you into a level called Title Screen. If you simply hit Play from here you'll launch into a basic version of the standard MechWarrior 5: Mercenaries title screen, from which you can do everything you can in the standard game, such as start a new Campaign, run Instant Action, and so on. The level used for the full Title Screen seen in the main game is called TitleScreen_Background, which you could open, modify, and play from if you wished.

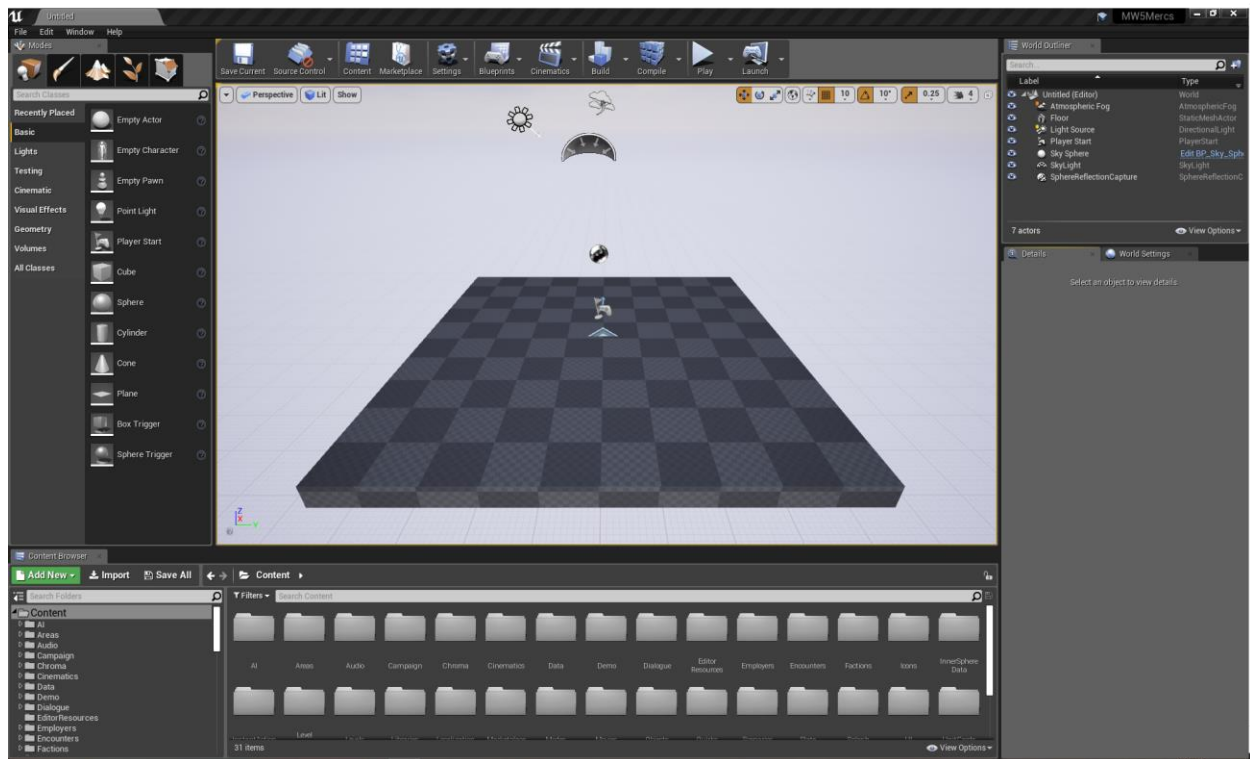
For now, let's proceed with making our own basic Test Map to get started with some basic mods.

Creating a basic Test Map

When building any kind of gameplay mod, such as a new Weapon or 'Mech variant, having a basic test level is a very useful tool for quickly testing your changes.

Hit CTRL+N on your keyboard to bring up the New Level panel (or select New Level... from the File option in the toolbar).

Choose the Default option.

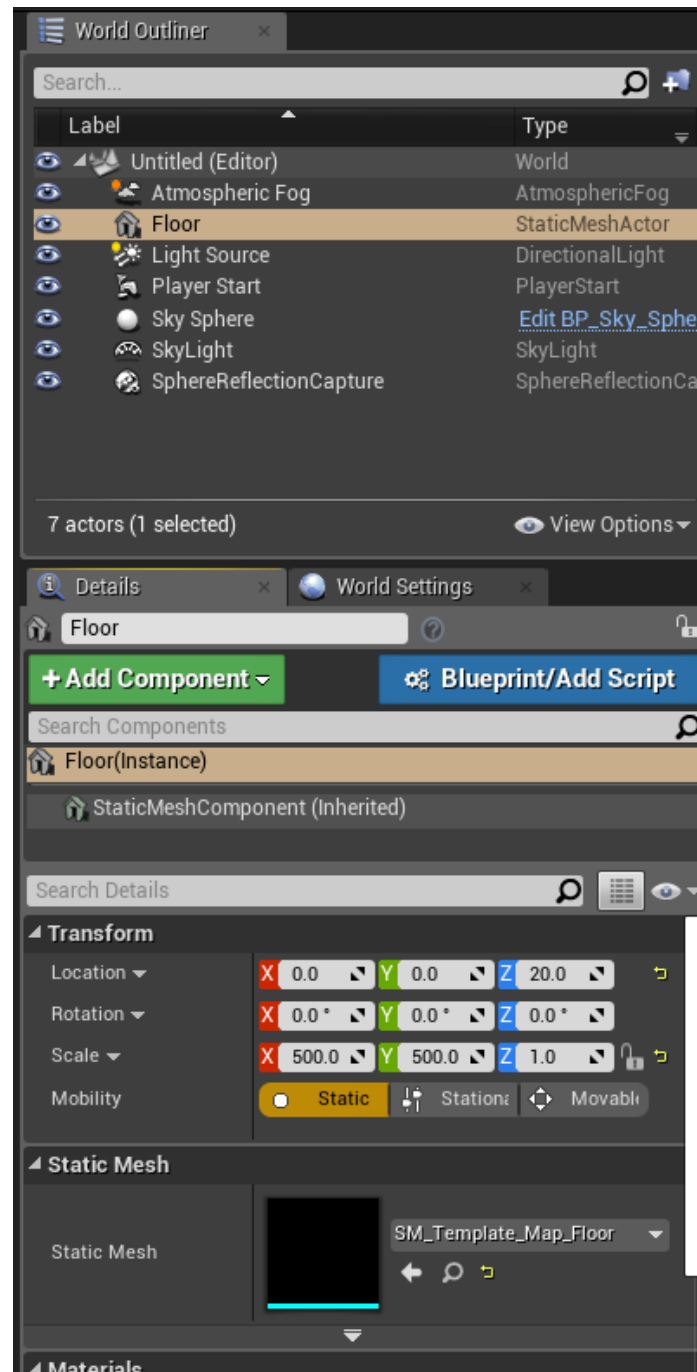


This level contains some very basic elements:

- An Atmospheric Fog actor
- A Floor mesh
- A Directional Light
- A Player Start actor
- The default Unreal Engine Sky Sphere
- A Skylight
- A SphereReflectionCapture actor

The first thing you'll want to do is increase the size of the Floor mesh. This will give you a lot of room to play around in once you get into a 'Mech or start adding assets to the test level.

- Select the Floor actor in the World Outliner
- In the Scale field, change the X and Y size from 1.0 to something larger, such as 500.0.



Now that you've got a bigger playing field, go ahead and save this level.

With your new level ready to go, let's drop a 'Mech Spawner down.

Spawning an AI 'Mech

In your Content Browser, navigate to Objects\Spawners. In that folder you'll see an asset called SpawnPoint.

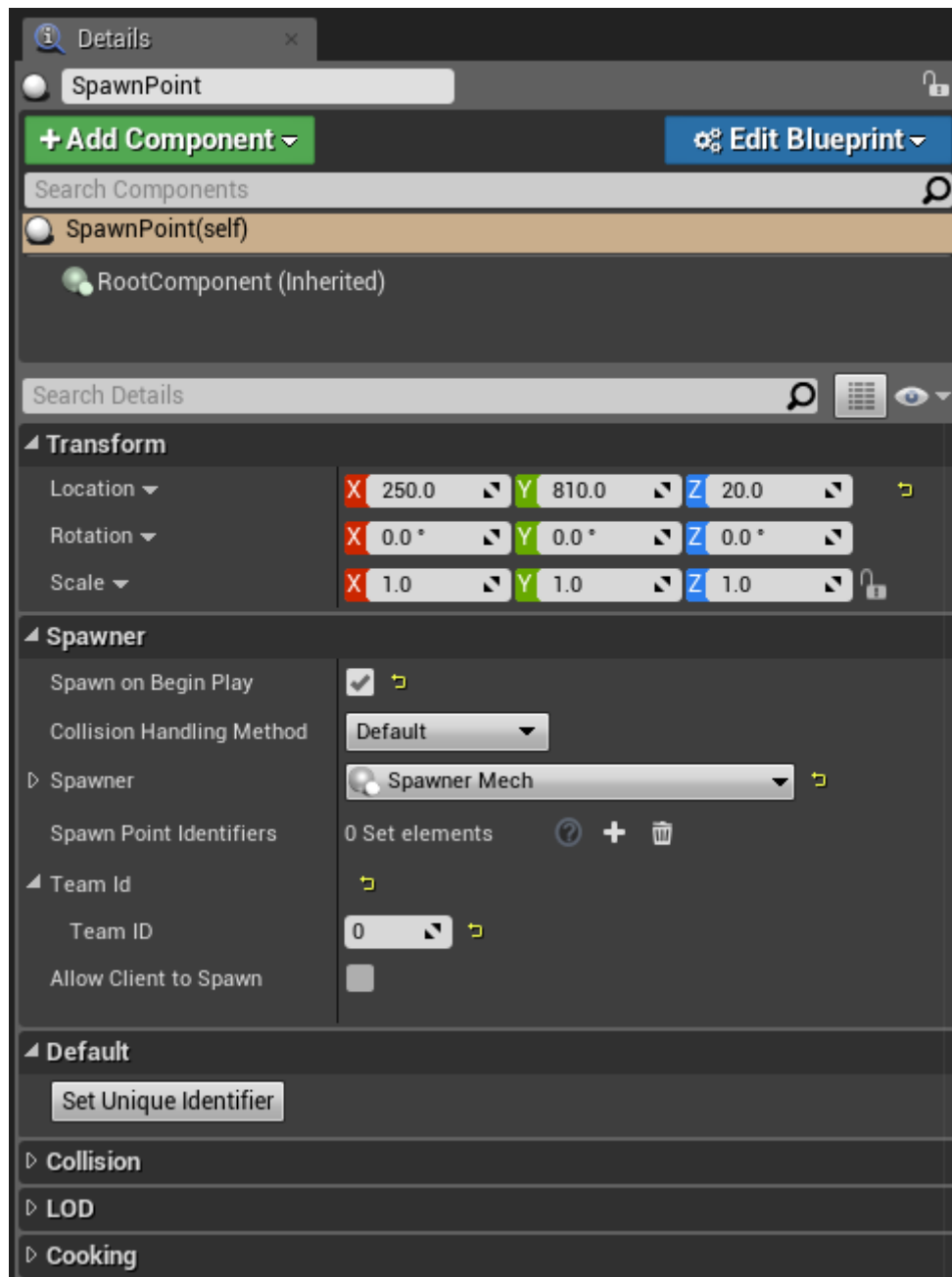
Click and drag that asset into your level.

Select that asset inside the level or in the World Outliner pane.

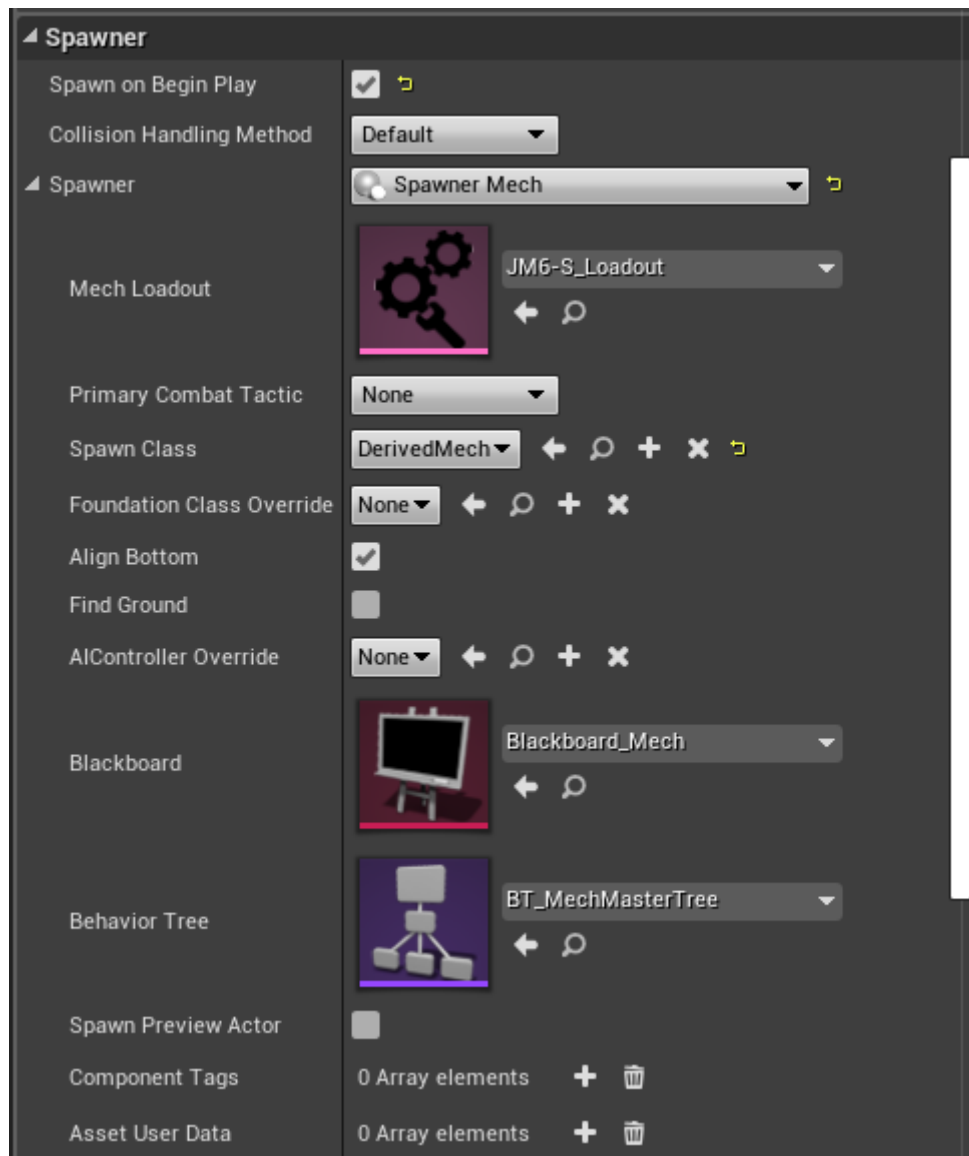
In the Details pane you'll see some key variables:

- Spawn On Begin Play
 - Checking this box will cause the 'Mech to spawn when you Play or Simulate the level
- Spawner
 - From this dropdown you can choose from the various spawner types
- TeamID
 - This will determine whether the spawned actor is friend or foe
 - 0=Ally
 - 255=Enemy

For this example, set the SpawnPoint to Spawn On Begin Play, set the TeamID to 0, and set the Spawner to Spawner Mech



Now that you've set it to use a Spawner Mech you can expand that section to reveal additional details.



By default you'll see the spawner is set to use a JagerMech JM6-S. If you hit Play in the Editor now, you'll spawn in as a freefloating pawn and the JagerMech will spawn in the world. Hitting Escape on your keyboard will stop the scene and return Editor control. Try that now!

So that's how you can spawn a 'Mech into a test level. Simply drop a SpawnPoint, set the Spawner type, and set the Loadout/variant you want to spawn.

Now let's get you into a 'Mech.

Spawning as a 'Mech

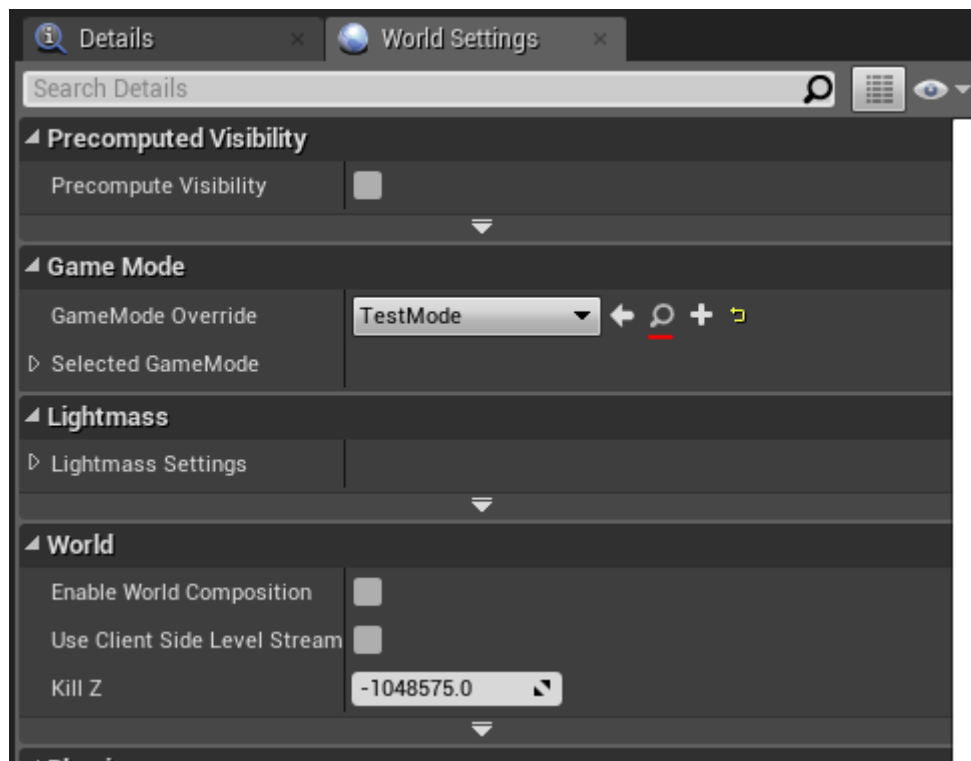
Using the same level with that same AI SpawnPoint intact, select the World Settings option from the Window dropdown in the toolbar.

In the World Settings tab you'll see a GameMode Override dropdown. It will be set to 'None' by default. Select TestMode from that dropdown.

Now hit Play again, and this time, you'll spawn in control of a 'Mech.

If you set the SpawnPoint you placed in the previous step to use TeamID 0, the two of you will be on the same team. If not, get ready to throw down!

If you want to change the 'Mech in which you're spawning, click the little magnifying glass next to the TestMode dropdown in the World Settings pane. This will point your Content Browser directly to that TestMode asset.



Double-click that TestMode asset to open it.

In there you'll see a lot of things, but for now just focus on the Campaign section of the Details pane. Expand the Starting Mechs section located there.

Details

Search Details

Actor Tick

Start with Tick Enabled

☒

Tick Interval (secs)

0.0

Allow Tick Before Begin Play

☒

Default

Spawn Count

0

Starting Pilots

0 Array elements

+

Starting Codex Entries

0 Array elements

+

Classes

Game Session Class

MWGameSession

←

×

Game State Class

DefaultGameState

←

+

Player Controller Class

MW5PlayerController

←

+

Player State Class

MWPlayerState

←

+

HUD Class

HUD

←

+

×

Default Pawn Class

DerivedMech

←

+

×

Spectator Class

MWFreeCameraPawn

←

+

Replay Spectator Player Controller Class

MW5PlayerController

←

+

Server Stat Replicator Class

ServerStatReplicator

←

Game

Default Player Name

Campaign

Startup Scenario

None

None

←

Starting Missions

0 Array elements

+

Starting Mechs

2 Array elements

+

0

MWMechLoadoutAsset:ANH-1E_Loadout

←

×

1

MWMechLoadoutAsset:FLE-15_Loadout

←

×

Starting CBills

500000

Starting System Id

3445

Mech Warrior

Mech Class

DerivedMech

←

+

×

Default Transition Class

FadeTransition

←

+

×

Engagement Tracker

None

Default Inner Sphere Class

StarSystemGenerator

←

+

×

Click the ANH-1E dropdown to see a list of all the 'Mech Loadouts in the game. Simply choose the Loadout you want, go back to your main Editor window, and hit Play. You'll now spawn as the 'Mech you selected.

Let's go ahead and make a new Weapon!

Creating a new Weapon

In your Content Browser, navigate to \Objects\Weapons.

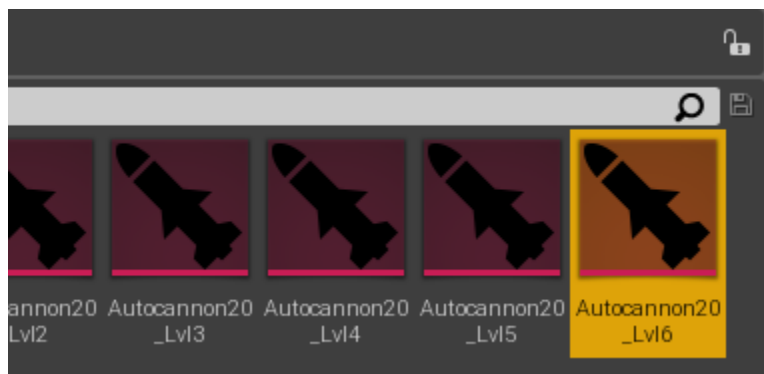
Here you'll find folders for all the main weapon classes. Let's create a new AC20.

Open the AC20 folder.

In here you'll see what are called Weapon Data Assets.

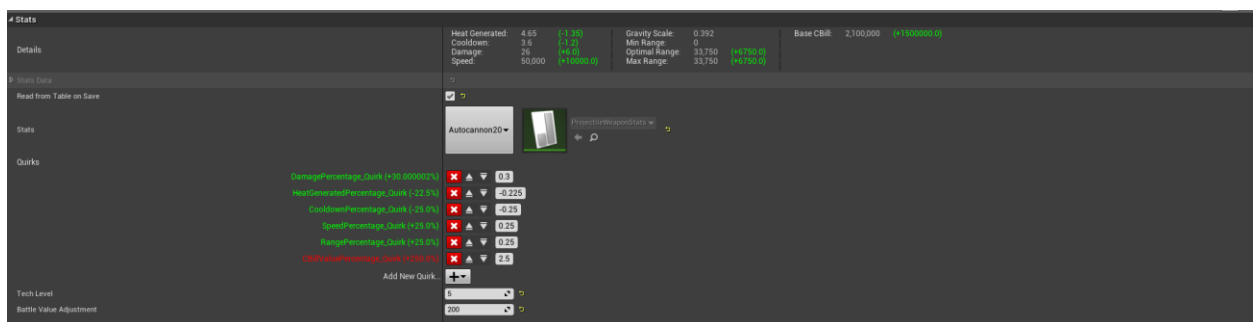
Right-click on the one that says Autocannon20_Lvl5, and from the context menu, select Duplicate.

Unless you gave it a custom name, your new asset should be called Autocannon20_Lvl6. Double-click that asset to open it.



For this guide we're just going to make some minor changes.

With the asset open you'll see some key areas for changing the default values for this weapon.



You can see here how Weapons have their base stats modified by Quirk Assets.

AC20s are kind of slow, so let's just change the value for the SpeedPercentage_Quirk from a 25% boost to 250%.

On second thought, let's also increase the CooldownPercentage_Quirk to -250%, because why not.

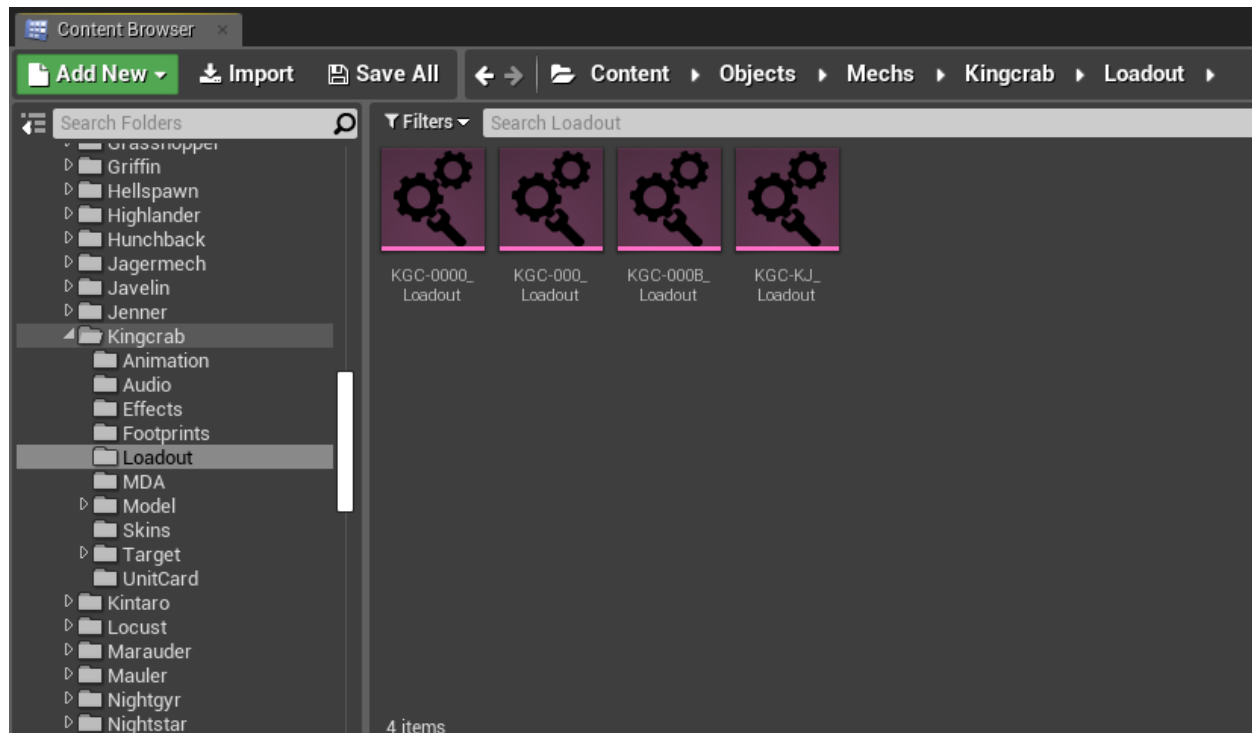
DamagePercentage_Quirk (+30.000002%)				0.3
HeatGeneratedPercentage_Quirk (-22.5%)				-0.225
CooldownPercentage_Quirk (-250.0%)				-2.5
SpeedPercentage_Quirk (+250.0%)				2.5
RangePercentage_Quirk (+25.0%)				0.25
CBillValuePercentage_Quirk (+250.0%)				2.5

Look upon our works, ye mighty, and despair.

Now that we've made this new Weapon Asset, we need to add it to a Loadout.

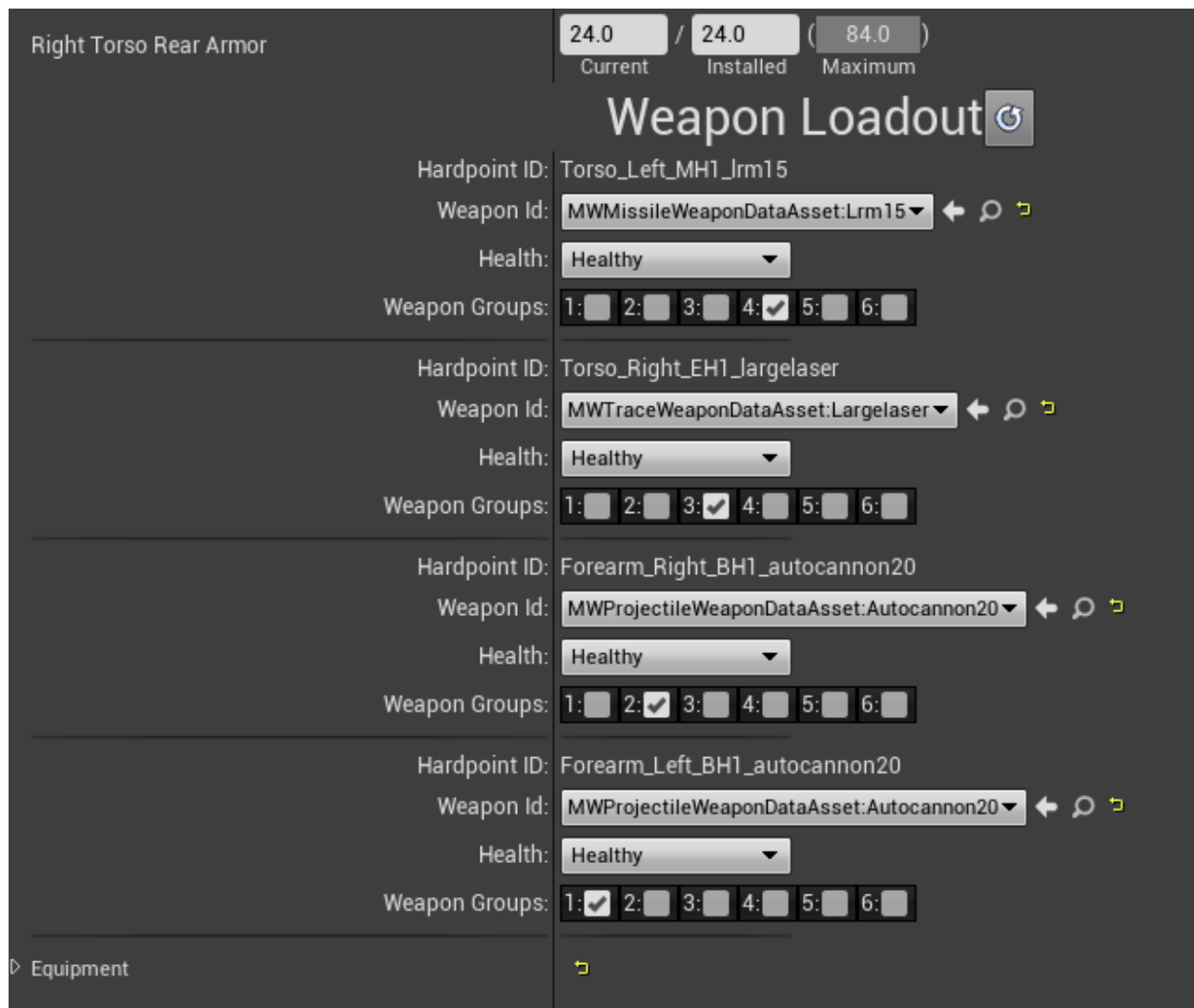
Modifying a 'Mech Loadout asset

Go back to the TestMode asset you opened earlier. In the first selected 'Mech slot, set the 'Mech to the KGC-000 Loadout. Now, click the magnifying glass to see that asset in the Content Browser.



Double-click that asset to open it.

Expand the Mech Loadout Section. Here you can see all the various attributes of the 'Mech in question. For now we just care about giving it that AC20 we made, so scroll down until you reach the Weapon Loadout section.



In the Autocannon20 dropdowns, select your new Autocannon20_Lvl6 asset and save this KGC Loadout asset.

Return to the main Editor window and hit Play. If you did everything right, you should spawn in the KGC-000 'Mech with your two completely ridiculous AC20s equipped.

Now go ahead and click the left mouse button to fire an AC20. Go on.

Good stuff. Though we should probably make a new Recoil asset to use with this AC20, because that was a bit insane....

Now that you know how to make a Test Level, spawn an AI 'Mech, spawn yourself in a 'Mech, create and modify a weapon, and modify a 'Mech Loadout, you should have a very basic understanding of how you can start modding assets in the MW5 Mod Editor.

As you comb through the Content Browser you'll see just how much stuff is there for you, just waiting to be modded. Campaign Arcs, Audio, Factions, UI, and so much more.

We're excited to see what you're going to make.

Using Audiokinetic Wwise to mod music and sound in MW5

MechWarrior 5: Mercenaries uses Audiokinetic's Wwise for its audio framework. As a result, if you intend to make any audio mods for MW5 you will need to download the Wwise Authoring software and acquire a non-commercial license from Audiokinetic. Fortunately, Audiokinetic provide **free** use of their Wwise Authoring software for non-commercial purposes!

Important Information

- While we will be working closely with Wwise to ensure support for your creation of MW5 audio mods, the approval and continued availability of your non-commercial Wwise Authoring license is at the sole the discretion of Wwise. We cannot guarantee the provision of a non-commercial license for your mod project. In the event that you are not granted a license - or if a provisioned license is revoked for any reason - we cannot provide you with an alternate license.
- If granted, Wwise's Non-Commercial License will be provided to you by Wwise on a quarterly basis. You will need to request an extension of the License from Wwise if you require additional time before releasing your Mod, or if you wish to continue working on and supporting your Mod after its release.
- Use of the Wwise Authoring tool is subject to the Wwise End User License Agreement.
- The MW5 audio source files are not distributed with the Mod Editor. However, the Wwise Authoring software will give you the ability replace any and all audio in the game with your own source files.
- We **strongly recommend** that you set up some kind of version control or reliable backup system before beginning any serious mod work.

Registering your Wwise Project

Registering your Mod Project with Wwise to acquire a non-commercial license is very easy. However, pay careful attention to the following section, as you will need to fill out the registration forms with specific information.

Create and validate your new Wwise account (<https://www.audiokinetic.com/sign-up/>)

Register your project (<https://www.audiokinetic.com/register-project/>)

On the initial registration screen, make these two selections:

- *Select the type of project you would like to register. This will help us provide you with the perfect solution for you and your organization.*
 - Non-Commercial
- *Please select the option that matches your project:*
 - I need more than 200 media assets

On the next screen you will be asked to enter in some details regarding your Mod Project. Fill them out according to the information below.

Your Project

- Project Name
 - MW5Mercs Modding (A Unique Name)
 - Your Project name **must** start with MW5Mercs Modding
 - Your Project name **must** include a unique name by which to identify it
 - Your Project name should be as specific and unique as possible. Using your online handle is a good way to ensure this, but we request that you also include additional information about the nature of your work
 - For Example: "MW5Mercs Modding (NewtonvsLeibniz's Sound Packs)"
- Project Website
 - Your website, if applicable
- Audiokinetic Contact
 - I don't have a contact yet
- Project Description
 - Enter a brief summary of your goals with when it comes to modding audio in MechWarrior 5: Mercenaries
- Pre-Production End Date

- This should just be the date on which you've submitted your registration.
- Estimated Release Date
 - The estimated date of release for your Mod.
- Game Engine
 - Unreal Engine
- Specify Version
 - 4.23.1
- Wwise Integration Version
 - Other/Custom
 - 2019.1.4.7065
- Target Platforms
 - Windows

On the next page you will be asked to enter in your Company Details. In this case, treat the "Company" as yourself and fill out the details on this page according to the information below.

Your Company

- Company Name
 - Your full name
- Website
 - Your website, if applicable
- Company Size
 - The approximate number of people who will be working on this Mod
- Street Address, City, etc
 - Your home address

On the next page you will be asked to agree to the Wwise License Agreement. You must read and accept this agreement in order to proceed.

On the final page you will be able to view a Summary of the information you've provided. Please read this Summary page carefully before submitting to ensure you haven't made any errors!

Once you've completed the registration application, your Project status will be visible at <https://www.audiokinetic.com/customers/projects/>

Once approved, your Project status will turn from Pending to Active. Your Project must be Active before you can start using Wwise!

Installing Wwise

We recommend not installing or setting up Wwise until you have acquired your non-commercial License Key.

Download the Wwise Launcher for Windows (<https://www.audiokinetic.com/download/>)

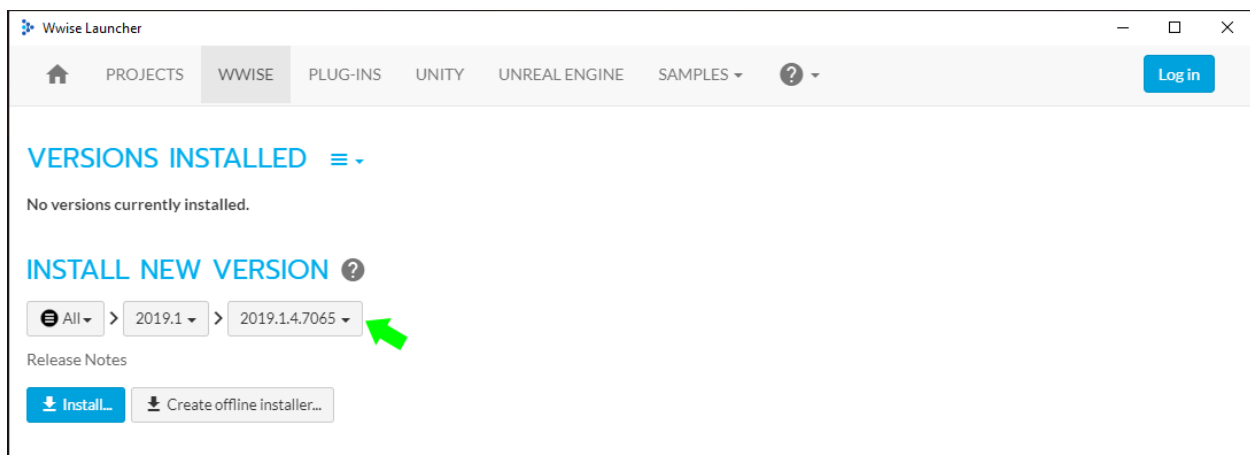
Install and run the Wwise Launcher.

Once installation is complete, open the Wwise Launcher and click the Wwise tab.



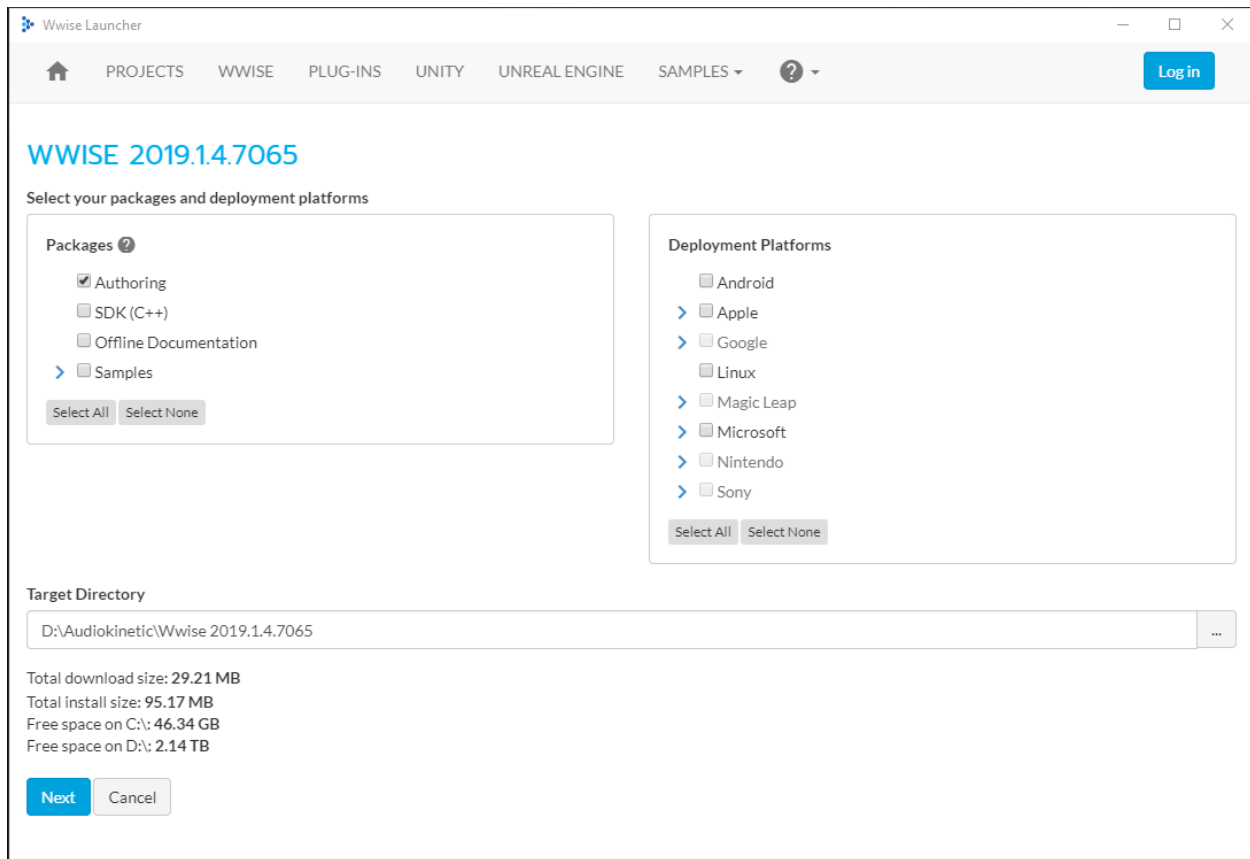
Click the 'Latest' button and select 'All' from the dropdown.

In the dropdown to the right, select 2019.1.4.7065 as your version. This is the version used by MechWarrior 5: Mercenaries. You **must** use the same version!



Confirm that your changes reflect the steps above, then click the 'Install' button.

The Wwise Launcher will start retrieving some information from the server. When that process is complete you will be presented with the following screen.



In the 'Packages' section on the left, ensure the 'Authoring' box is checked, and ensure the SDK (C++) box is **NOT** checked, as the SDK will not be required for using the MW5 Mod Editor.

If you wish, you can also select 'Offline Documentation' and 'Samples' to get additional resources for learning Wwise.

In the 'Deployment Platforms' section on the right, ensure none of the options are checked.

Specify a desired installation location in the 'Target Directory' field at the bottom. This location is where your Wwise Authoring Software will be installed. **THIS TARGET DIRECTORY SHOULD NOT BE THE LOCATION OF THE MW5MERCs EDITOR.**

When ready, click the 'Next' button.

You will be taken to a screen for choosing which Wwise Plug-Ins you wish to install.

From the list, only the following two Plug-Ins should be selected:

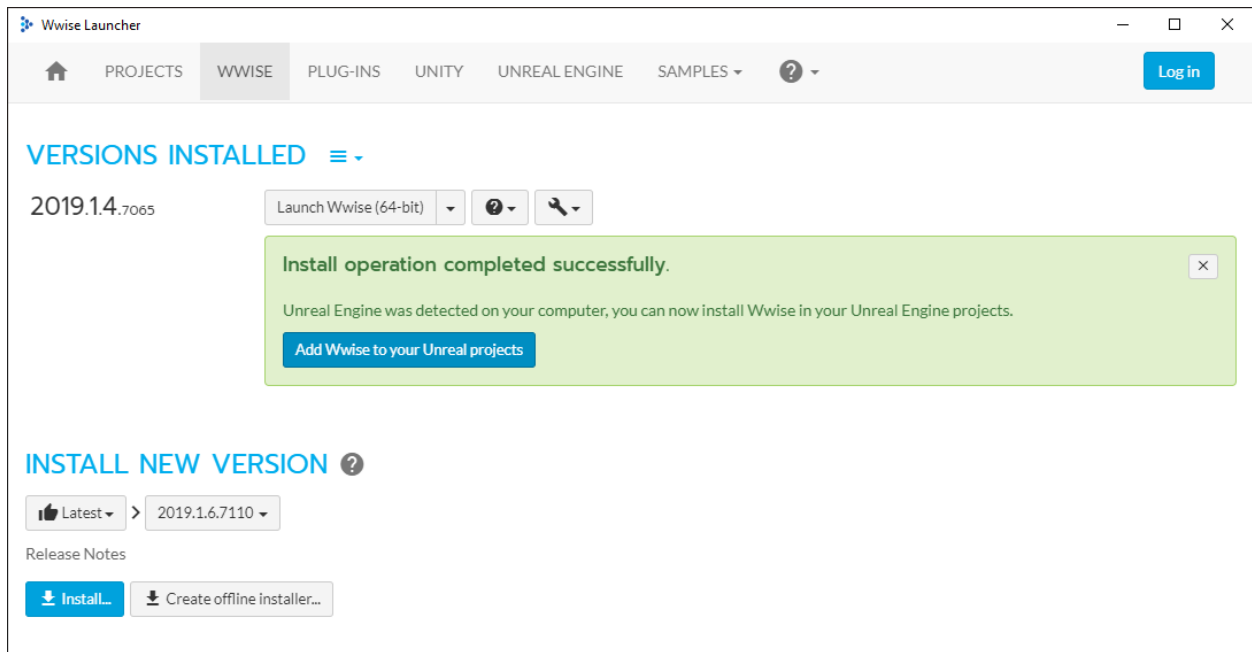
- Wwise Convolution
 - Version: 2019.1.4.7065

- McDSP ML1, McDSP Futzbox
 - Version: 2019.1.4.7065

As these Plug-Ins are required by MechWarrior 5: Mercenaries, your non-Commercial Wwise License will include licenses for these Plug-Ins.

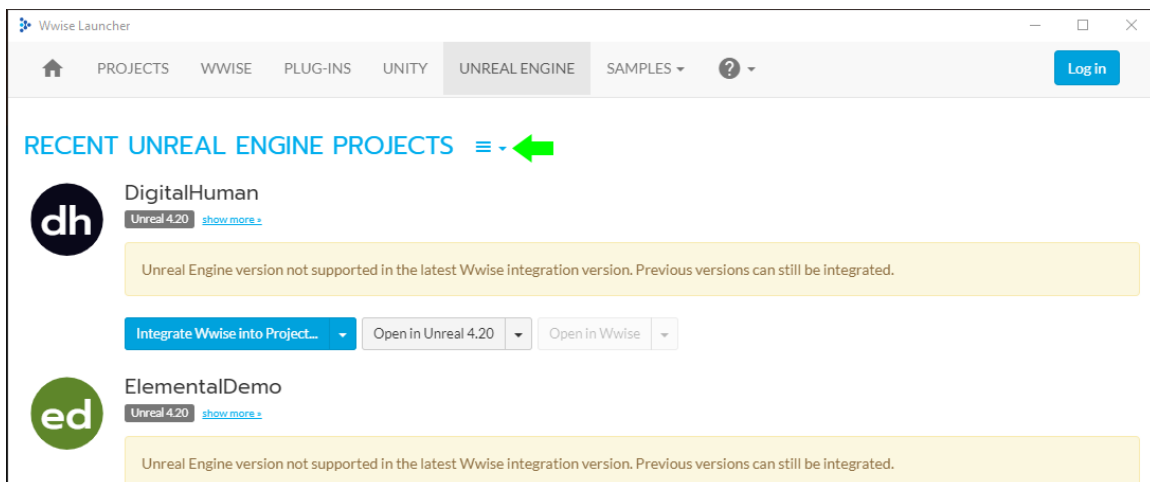
When ready, click the 'Install' button at the very bottom.

When the installation is complete you will now see an entry for Wwise version 2019.1.4.7065 in your Wwise tab.



Click the 'Add Wwise to your Unreal Projects' button, or click the UNREAL ENGINE tab at the top of the Launcher.

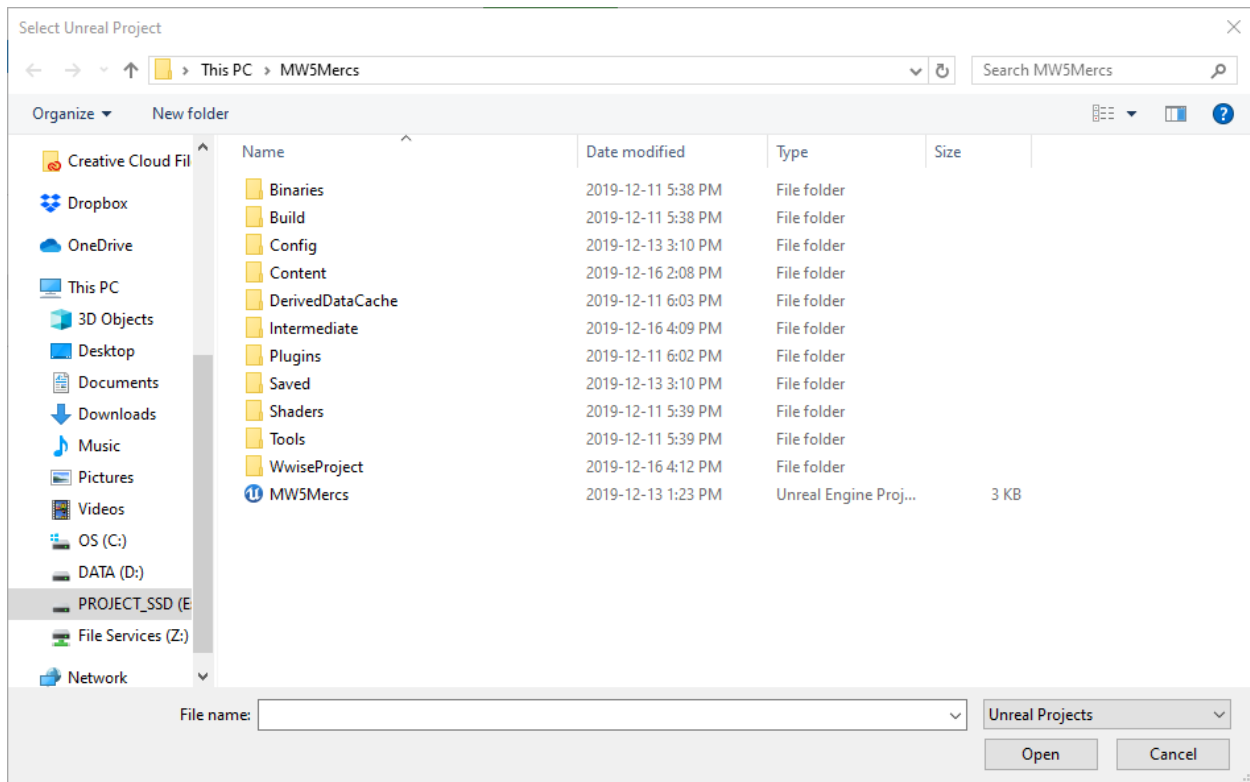
Click the icon next to RECENT UNREAL ENGINE PROJECTS



Select BROWSE FOR PROJECT... from the list of options

In the Explorer window that appears, navigate to <MW5 Mod Editor install location>\MechWarrior5Editor\MW5Merics

Select the MW5Merics project file and click Open



You will now see an entry for MW5Merics in the list of Recent Unreal Engine Projects.

Do **NOT** click the 'Integrate Wwise into Project...' button or the 'Open in Unreal 4.21' button.

Instead, click the 'Open in Wwise 2019.1.4.7065' button to launch Wwise Authoring for MW5!

Alternatively, you can navigate to <MW5 Mod Editor install location>\MechWarrior5Editor\MW5Merics\WwiseProject folder and open the file called ghost.uproj. This will also launch Wwise Authoring for MW5.

Getting Started

Once Wwise has been installed and your non-commercial License has been acquired, launch Wwise for MW5 either through the Wwise Launcher or directly through the ghost.uproj file mentioned above.

Wwise is a highly advanced and powerful tool for audio creation, and it will probably seem overwhelming at first. While a complete walkthrough of Wwise and its features is well beyond

the scope of this guide, the following section will give you a basic rundown on the following tasks:

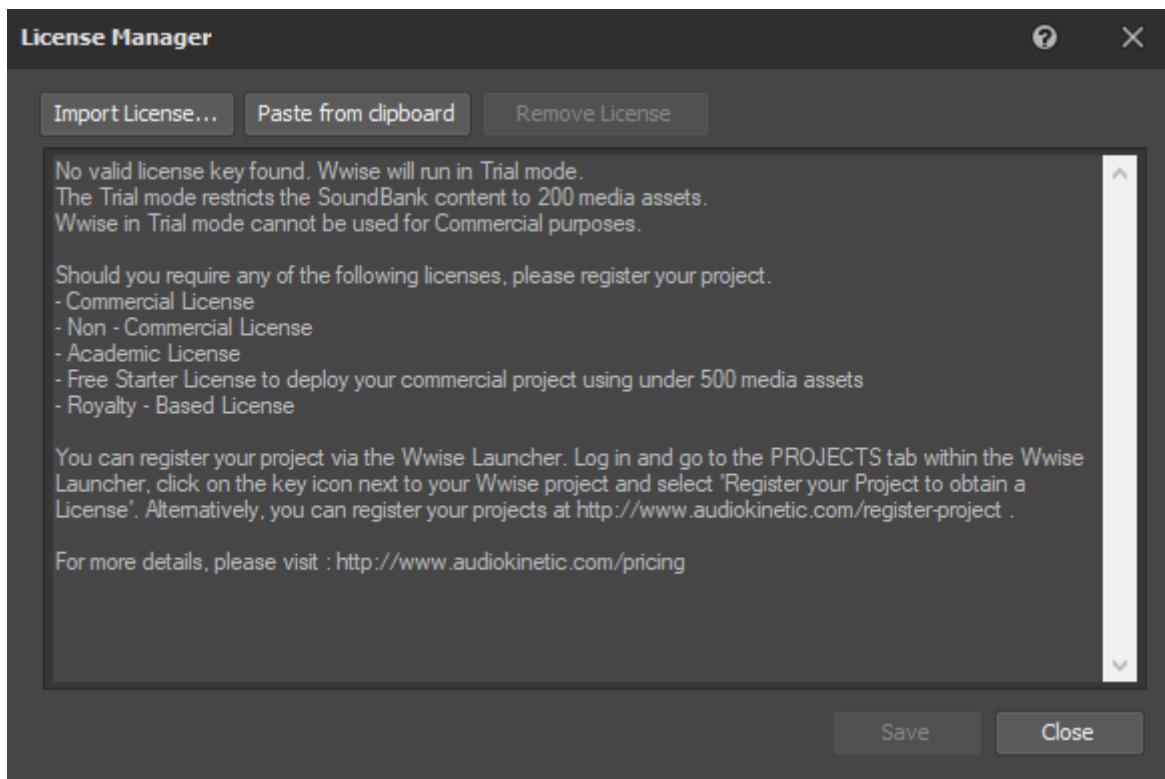
- Importing a sound file into the MW5 Wwise Project
- Replacing existing MW5 audio data with your own
- Generating the SoundBanks to propagate your audio changes to the MW5 Mod Editor

Adding your Non-Commercial License

Launch the MW5Mercs Wwise project (either through the Wwise Launcher or by opening the ghost.uproj file located in the <MW5 Mod Editor install location>\MechWarrior5Editor\MW5Mercs\WwiseProject folder.)

Before you start working, you'll want to apply your non-commercial License to the Project. To do so, select the 'License Manager' from the Projects dropdown in the toolbar (or hit CTRL+L on your keyboard).

When the License Manager panel appears you will see that no license is currently applied.



To get your License Key, navigate to <https://www.audiokinetic.com/customers/projects/> and click the Licenses option on the left.

About your License

Note that you will need to get a new license key whenever your project licenses change.

[Get license key](#) [View license details](#)

Wwise

Licenses	Expiration	Days Remaining	Platforms
Academic Level A License	2020-04-01	106	
Academic Maintenance	2020-04-01	106	
Academic Wwise	2020-04-01	106	

Click Get License Key and copy the key string that appears.

In Wwise, click the Paste from Clipboard button in the License Manager.

The License Manager will update and display the details of your License.

License Manager

Import License... Paste from clipboard Remove License

Project ID:

Wwise for Windows (Academic/Non-Commercial): expires on 2020-04-01
Maintenance for Windows (Academic/Non-Commercial): expires on 2020-04-01
Level A License for Windows (Academic/Non-Commercial): expires on 2020-04-01
McDSP Bundle (ML1, FutzBox) for Windows (Academic/Non-Commercial): expires on 2020-04-01
Wwise Convolution Reverb for Windows (Academic/Non-Commercial): expires on 2020-04-01

Your Wwise project will be saved to embed the license.

Save Cancel

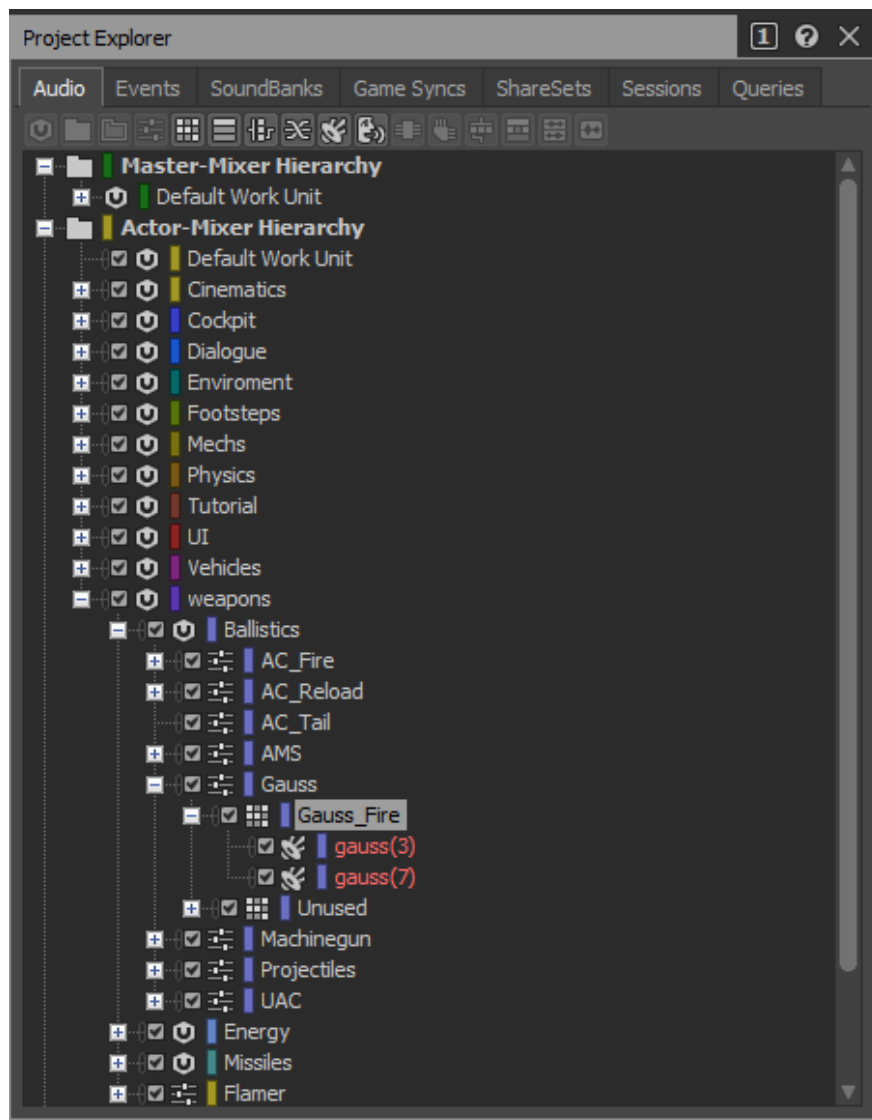
Click Save. Your full non-commercial license has now been applied!

Important Note: Over time we may issue updates to the MW5 Mod Editor. These updates may result in your License information being removed from the MW5 Wwise Project. If this occurs, you'll simply need to reapply your License using the above steps.

Importing your sound file into the MW5 Wwise Project

The Project Explorer tab will be your primary method for viewing and selecting the various sound assets in MW5 that you wish to modify.

You specifically want to expand the main entry titled 'Actor-Mixer Hierarchy'. This is where all the individual sound 'actions' in MW5 are located, such as weapon fire effects, 'Mech movement sounds, and so on.



With 'Actor-Mixer Hierarchy' expanded you'll see a number of sub-categories, such as Cinematics, Cockpit, Mechs, and Weapons.

For now, let's just expand Weapons > Ballistics > Gauss > Gauss_Fire.

Here you'll see two entries:

- gauss(3)
- gauss(7)

We have two different Gauss SFX in the project. Every time a Gauss is fired, one of the two sounds is randomly chosen to be played. In this example we'll be removing the second effect and replacing the first, leaving us with just one Gauss sound that plays every time it's fired.

Entries marked in red (as seen in the above image) denote audio assets for which you do not have the source files. By default all of the assets will appear like this, as the main MW5 audio source files are not distributed with the Mod Editor.

First, let's delete gauss(7) by right-clicking it in the Project Explorer and selecting Delete.

Now let's import a new sound effect to use for gauss(3).

Right click the gauss(3) entry and select the Import Audio Files... option to bring up the Audio File Importer (or hit Shift+I on your keyboard).

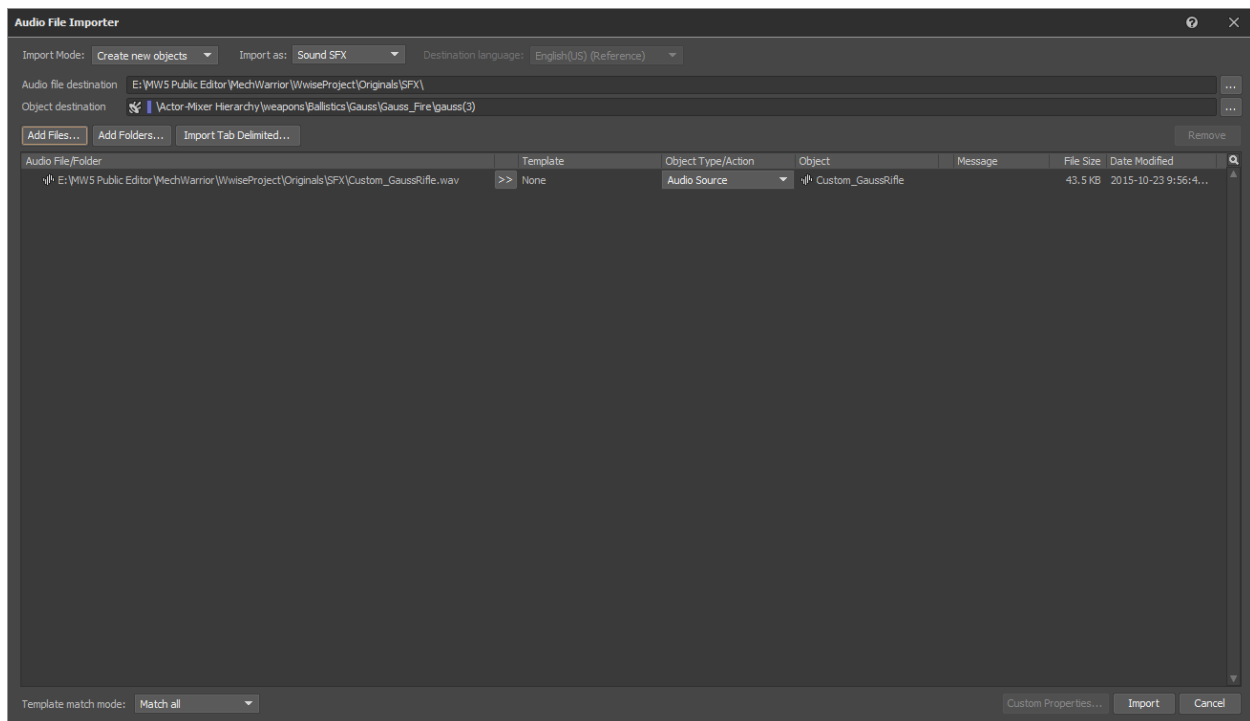
Select the Create New Objects option from the dropdown next to Import Mode at the top left of the Audio File Importer window.

The Audio File Destination field is where your source files need to be located. They can be located in sub-folders of this location, but should not be located outside of it.

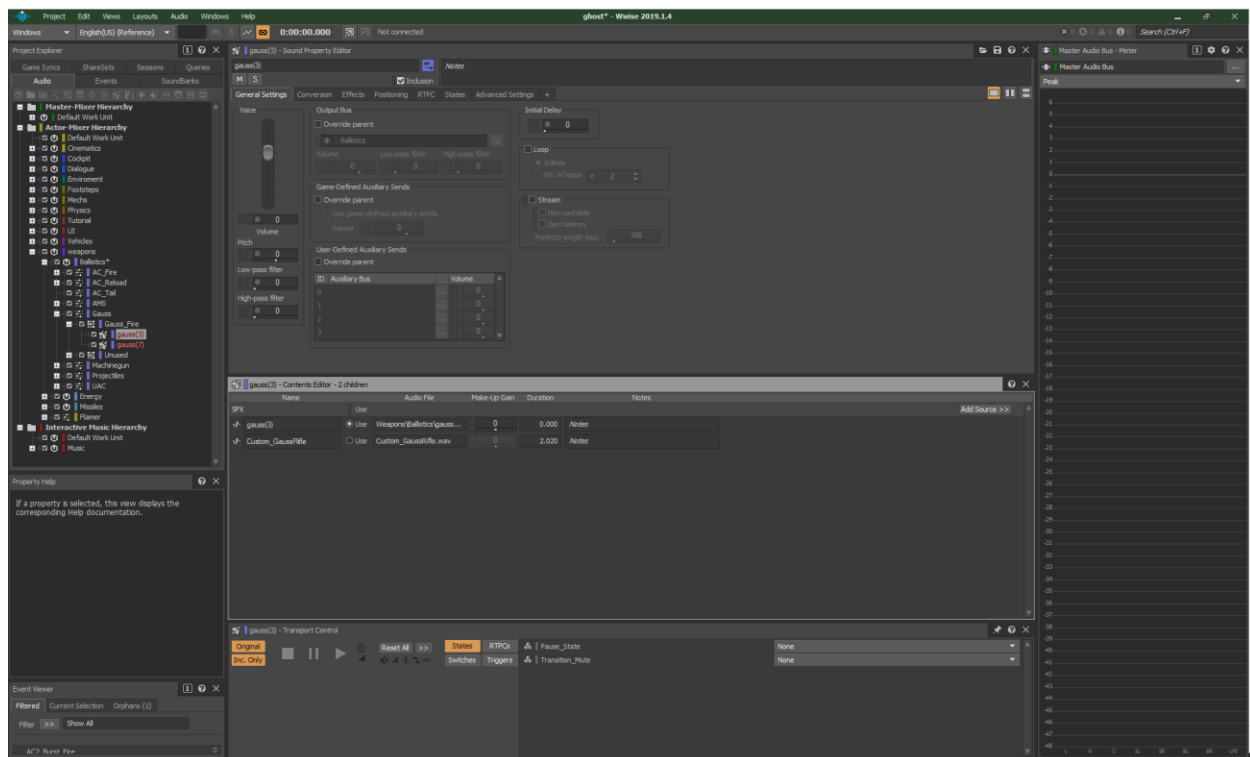
The Object Destination field will refer to the audio action for which you are trying to import a new source file. In this case, gauss(3).

Click the Add Files... button. Select your intended audio file from the Audio File Destination folder. If you receive any errors about a compatibility issue with your audio file you will need to resolve it by converting your audio file into a valid format.

Your selected file will now appear in the Audio File Importer window. Review the window then click the Import button at the bottom right.

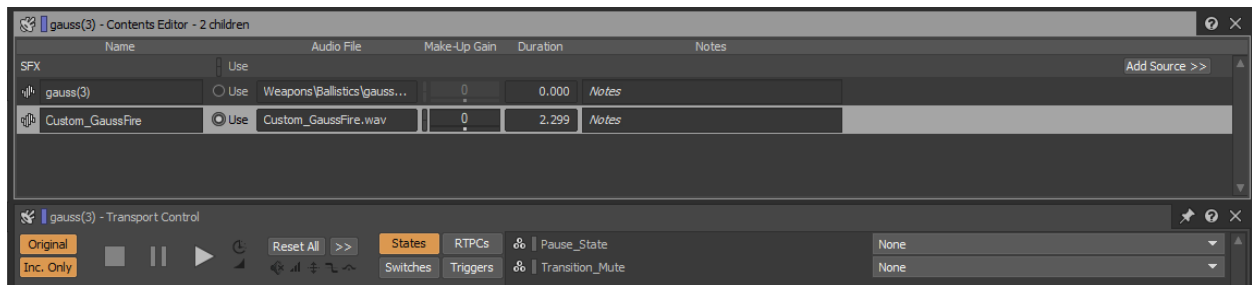


Returning to the main Wwise Project window you'll now see a new file in the details for gauss(3). In this example, we've added a file called Custom_GaussRifle.



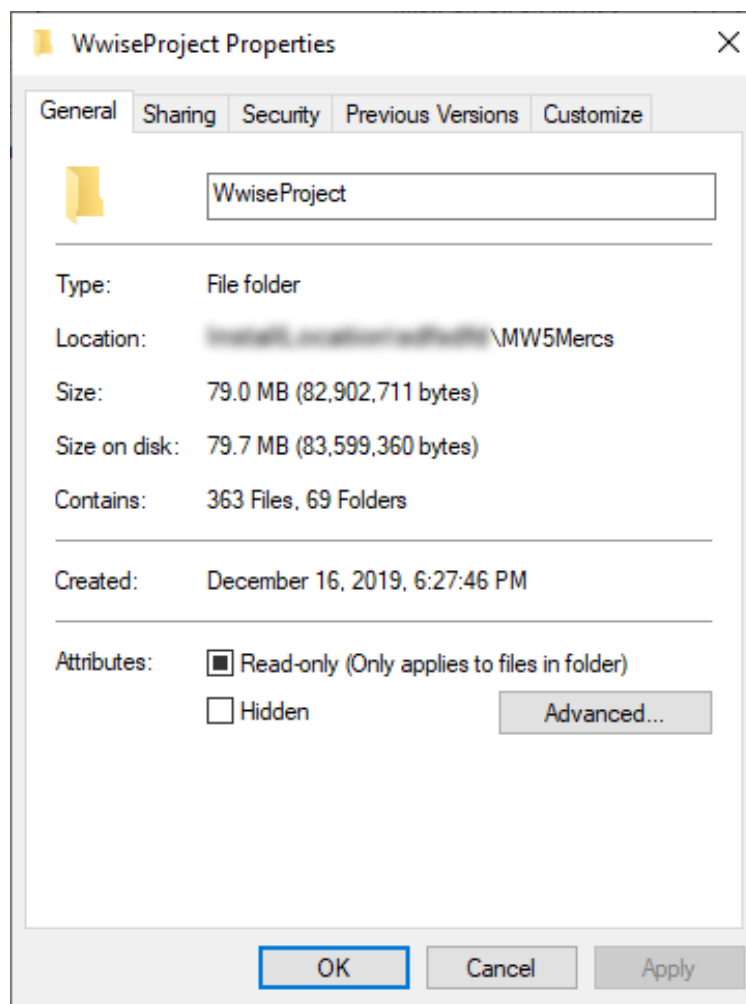
In the image above, note the 'Use' option is checked next to the original gauss(3) asset. To make the game use your new audio file, just click the Use option next to your new file.

When your audio file is selected, the Play button in the Transport Control panel below will light up, allowing you to preview the new audio file.



Now that you've added your first sound, hit Ctrl+S on your keyboard to save the Project (or select save from the Project option in the toolbar).

If you receive an error about a file being 'Read Only' when trying to save your Project, navigate to your <Mod Editor install location>\MW5MerCs folder. Right click the WwiseProject folder and select Properties.



Uncheck the Read-only box and hit OK. In the confirmation window that appears, hit OK.

In Wwise, save the project again and it should save successfully.

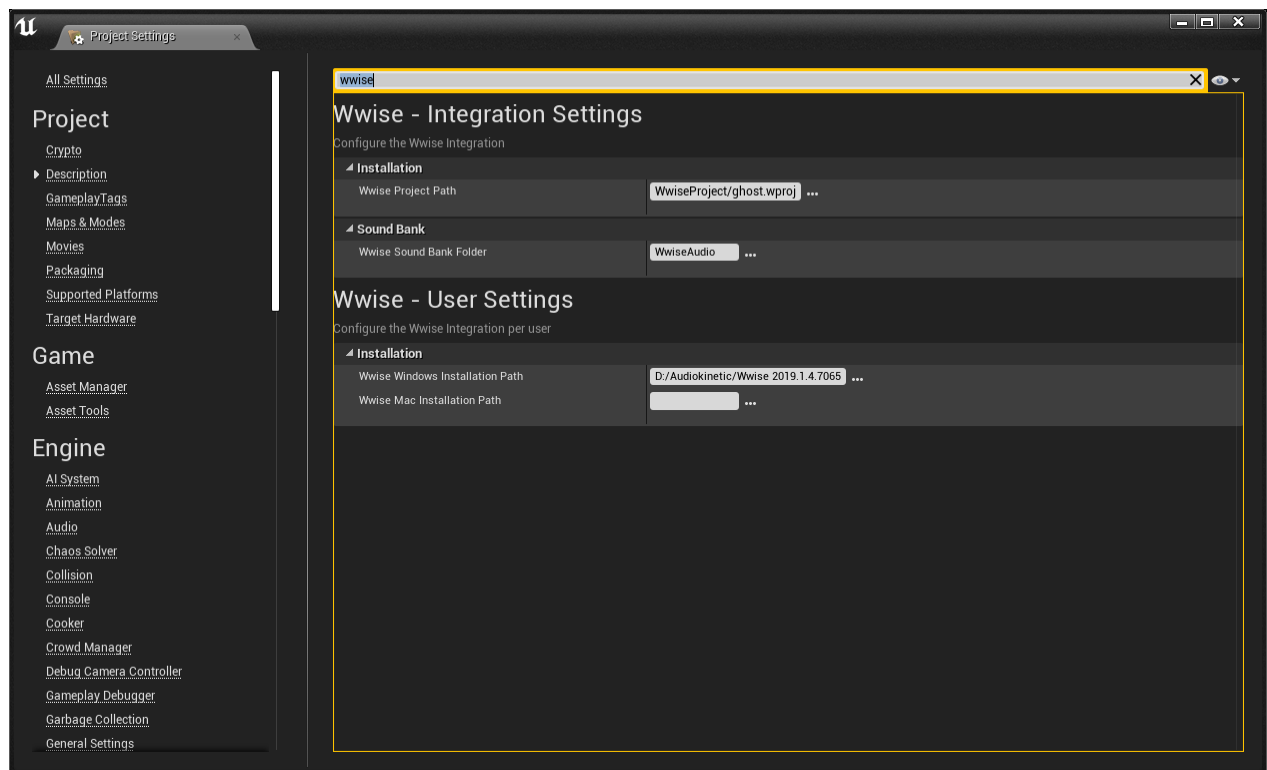
With the new sound added and the Project saved, close Wwise and launch the MW5 Mod Editor.

Setting up the Editor with Wwise

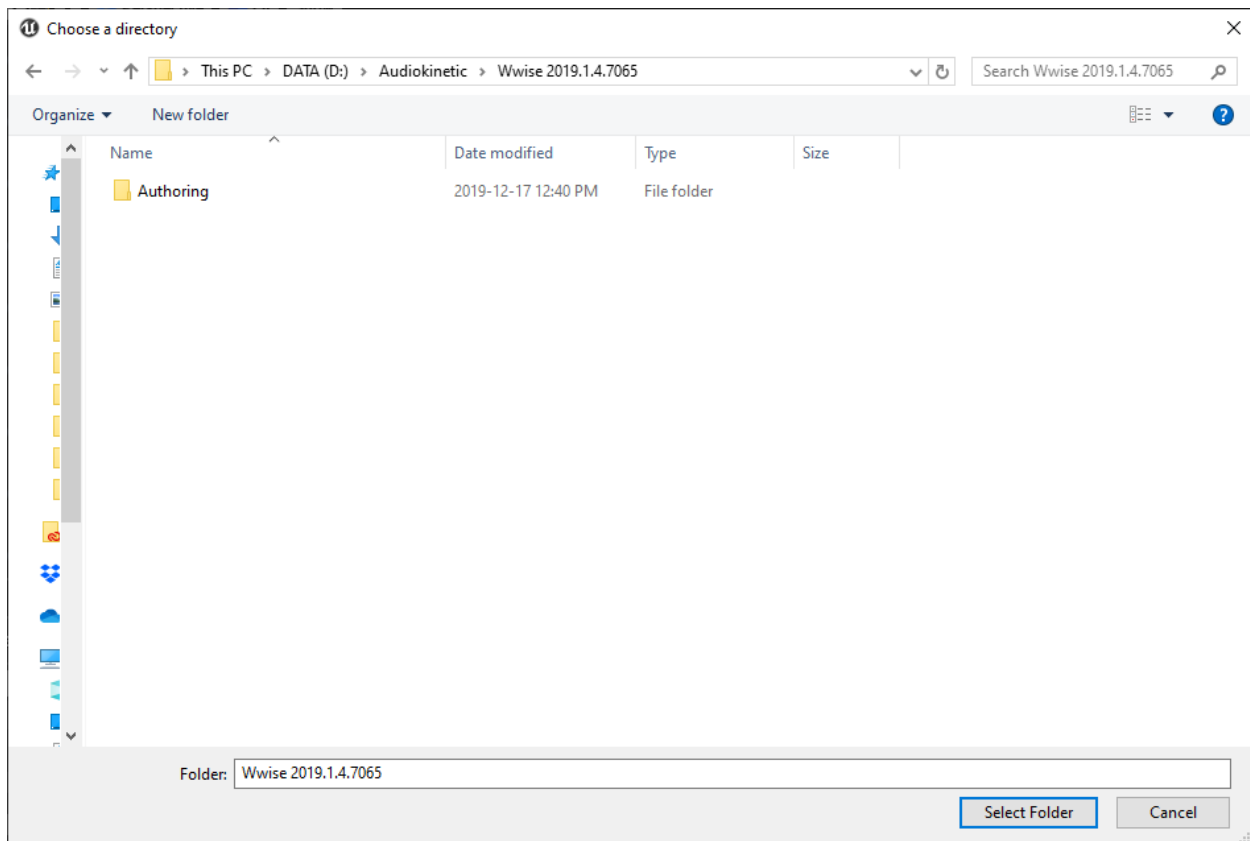
Before going any further you'll need to make some changes to the MW5 Mod Editor to complete its linkage with your Wwise installation.

After launching the MW5 Mod Editor and letting the asset discovery complete, select Project Settings from the Edit dropdown in the toolbar.

Type Wwise into the search field.



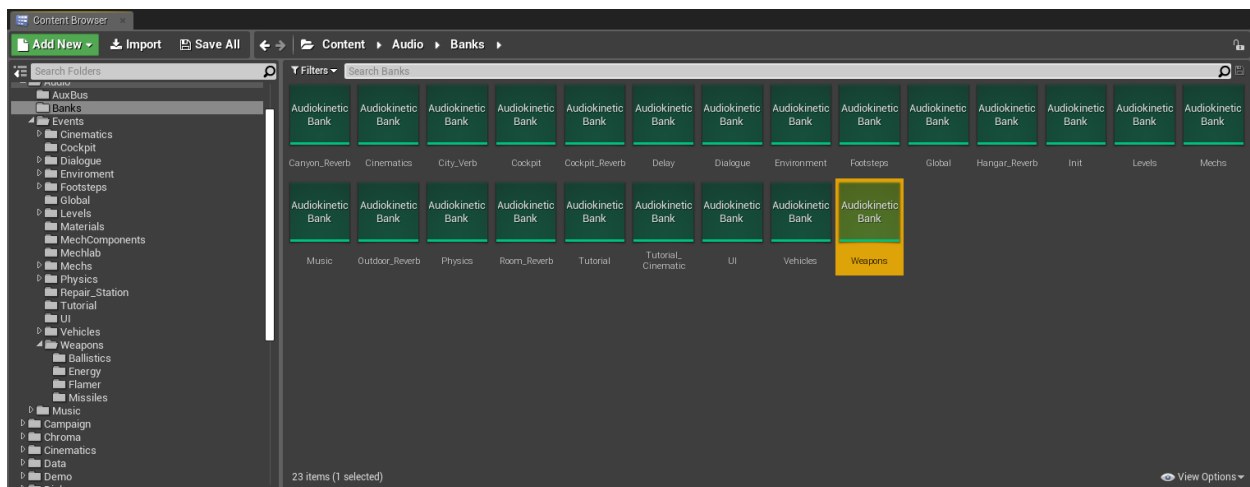
Click the ellipses (...) next to the Wwise Windows Installation Path. In the Explorer window that appears, navigate to the root folder of your Wwise installation, and click the 'Select Folder' button.



Now that you've completed this step, we need to regenerate and refresh the Weapons SoundBank, which contains your changes to the Gauss_Fire event.

Navigate to the Audio\Banks folder in the Editor Content Browser.

In this folder you'll see a number of Audiokinetic Bank assets. You may notice these correspond to the parent categories you saw in the Wwise project. In this example, the Weapons SoundBank contains the Gauss_Fire effect that we replaced.



Right click the Weapons AudioKinetic Bank asset and select 'Generate Selected Soundbank...' from the top of the context menu.

In the window that appears, hit the 'Generate' button.

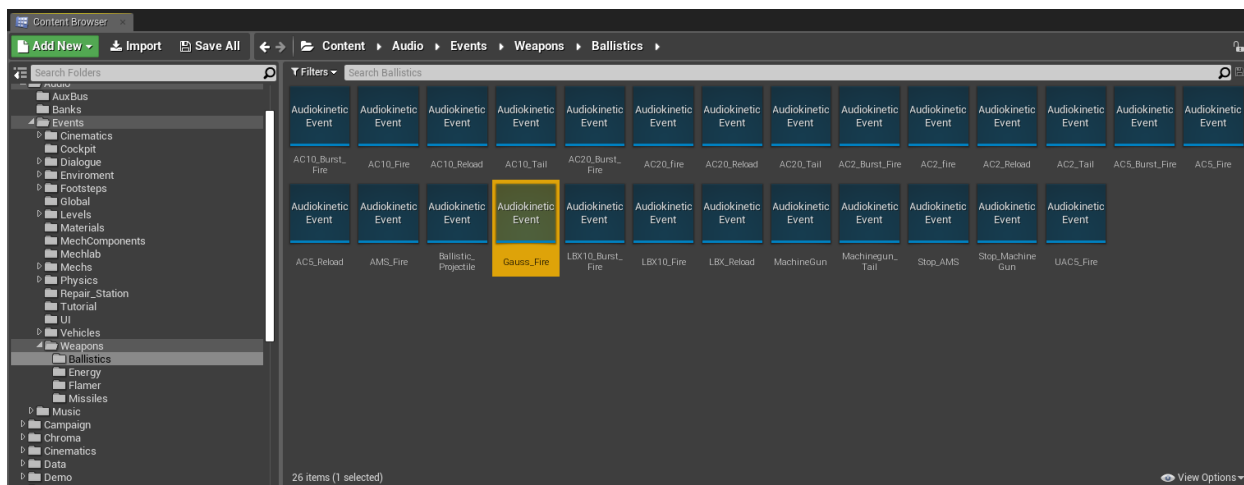
The Editor will begin the process of regenerating the Weapons SoundBank.

Important Note: The Editor will eventually report that the generation failed! This is normal, as it's simply stating that any assets for which you don't have source audio has failed to generate. In this example we've replaced the Gauss effect with our own source audio, and despite the reported generation failure, your Gauss change has been successfully generated!

Now, **right click the Weapons Audiokinetic Bank asset once again.** This time, select the Refresh All Banks option from the context menu.

Once complete, navigate to the Audio\Events\Weapons\Ballistics folder.

In this folder you'll see an Audiokinetic Event for the Gauss_Fire event. As you've modified this Event in Wwise with your new sound effect, regenerated the Weapons SoundBank, and refreshed all of the SoundBanks, the Gauss_Fire Audiokinetic Event in the Mod Editor will now use your audio when that event is played!



You can test your change by right-clicking the Gauss_Fire Audiokinetic Event and selecting the 'Play Event' option from the context menu. You should now hear your new Gauss effect! If you don't, run through the Wwise section of this guide again, paying careful attention to follow every step.