FMOD - Get Started Guide

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1. Introduction Concept:

Audio middleware is a software tool that manage and process audio in video games. It acts as an intermediary layer between the game's engine and the audio hardware, simplifying and streamlining the process of implementing sound effects, music, and interactive audio elements without needing to write low-level audio code. （like audio source

FMOD is a powerful audio middleware designed for integrating and controlling sound in unity and unreal.

Before we start, we need to know the most important word called **EVENT**. In Unity, Events are a programing concept used to signal or trigger actions in response to certain conditions or changes in the game. Let me make some examples: **MonoBehavior Events:** Unity provides built-in events that are automatically triggered at specific times during a script's lifecycle.(Start(), Update(), OnCollisionEnter(), and so on) Also, Developers can define custom events to broadcast messages or triggers between objects in the game. Audio Events Triggered within Unity to play, stop, or adjust sound effects and music using middleware tools.(e.g. Ambience, Footsteps, Musics, and so on)

In FMOD, Audio Related Logic like Randomizing Audio, Audio by Distance, Varying Effects, Music Transitions, Mixing the Audio. They all happens within FMOD. In that case, unity only needs to care about when to play audio, How to play it. Also, FMOD directly support for unity and unreal.

In addition, FMOD is a good tool for creating adaptive audio for your game. In games, Adaptive Audio refers to a sound system that dynamically adjusts or changes in real-time based on in-game events, player actions, or environmental conditions. （e.g. Dynamic Changes, Interactivity, Smooth transitions.）

2. Guide：

1. **Open FMOD**
Launch FMOD and click on **New Project**, then save the project to any desired location.

2. **Install FMOD for Unity**
Go to the **Unity Asset Store** and install the **FMOD for Unity** plugin. （is free）

3. **Access the Package Manager**
In Unity, navigate to the **Window** menu and select **Package Manager**.

4. **Import FMOD Package**
Once the package manager opens, click **Import** Everything.

5. **FMOD Floating Window**
After importing, an **FMOD floating window** will appear in Unity.

6. **Complete Setup**
Click **Start** in the FMOD floating window. When all checks turn into green checkmarks, FMOD is ready for use.

7. **Organize Your Assets**
In FMOD, drag your **SFX folder**, **Music folder**, and **Ambience folder** into the **Assets** panel on the left. This panel is used for storing all your audio assets.

8. **Create Events**

- Right-click in the **Events** panel and select **New Event**.
- Choose the event type based on your game: **2D** or **3D Action**.
- Name your event and drag the required SFX from the **Assets** panel into the **Event** timeline.

9. **Create a Bank**

- Go to the **Bank** panel, right-click, and select **New Bank**.
- Name your bank. **Do not delete the master bank**, unless you intend to replace it with a new one, as it contains the entire FMOD project data.

10. **Assign Events to Bank**

- In the **Events** panel, right-click your event and select **Assign to Bank** to link it to the bank you created.

11. **Build the FMOD Project**

- Click **File** in the top-left corner and select **Build**.
- The built files will appear in the **Build folder** within your FMOD project folder.

12. **Add FMOD Studio Listener**

   - In Unity, go to your **Main Camera**'s Inspector.
   - At the bottom, find the **FMOD Studio Listener** component and attach the game object (e.g., Player) that you want to trigger sounds.

13. **Create Audio Folder**

   - In the Unity **Scripts** folder, create a new **Audio** folder to store all audio-related scripts.

14. **Create AudioManager Script**

   - Write a script for the **AudioManager**.
   - Begin by adding `using FMOD.Studio;` at the top of the script to ensure FMOD Studio packages are included.

15. **Attach AudioManager to the Player**

   - Create an **Empty GameObject** under your Player, name it **Audio Manager**, and attach the **AudioManager script** to it.

16. **Coin Interaction Script**

   - In the script for your coin object, include `using FMOD.Unity;` at the top to integrate FMOD functionality.

By following these steps, you'll have FMOD fully integrated with Unity and ready to manage your game's audio effectively.