FFmpeg for Unity

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1. Overview

This assets is to execute FFmpeg on editor and application.

You can do below:

- Play Movies(mp4, avi, mov etc.)
- Capture Game View or Camera(In Game)
- Convert Video Files
- Live Streaming to Youtube(rtmp etc.)
  etc.

2. Correspondence Environment

- Unity Editor(Windows/Mac/Linux)
- Standalone(Windows/Mac/Linux)(Mono/IL2CPP)
- Android
- iOS

3. Note for FFmpeg

This assets uses FFmpeg binary(Windows/Mac/Linux) or plugins(Android/iOS) built below. For windows, Please import or build below:

https://github.com/NON906/ffmpeg-windows-build-helpers/releases/

For others, using libraries is part only(please show Lisense). So, if libraries you want to use is not included, please rebuild and replace files.

- Mac/Linux: https://github.com/NON906/ffmpeg-build-script
- Android/iOS: https://github.com/NON906/ffmpeg-kit

4. How to Use

1. Import this assets.
2. (For Windows) Please download and import here: https://github.com/NON906/ffmpeg-windows-build-helpers/releases/
3. (Optional) Rebuild FFmpeg and replace files.
4. Edit Settings:
   4-1. Open 'File -> Build Settings' on the menu bar.
   4-2. Click 'Player Settings...'.
   4-3. Change to '.NET 4.x' in 'Other Settings -> Api Compatibility Level'.
5. If want to run sample scenes, do it:

- Convert, Player, TexturePlayer, TexturePlayerRender, ConvertBytes, TextureBytesPlayer, TextureBytesCaptureAndPlayer: Please place `sample.mp4` to `Assets/StreamingAssets`.
- PlayerVR: In addition to the above, import the 'XR Interaction Toolkit' and its corresponding Plugin from Package Manager.
- YoutubeLive: Please replace stream key(from Youtube Live) to `[STREAM_KEY]`.

NOTE: (For Android) From ver1.6, `com.arthenica.smartexception` is included.
If you get an error after updating, please delete the setting of `Assets/Plugins/Android/mainTemplate.gradle`.

5. Component Details

5-1. FfmpegCommand

Execute FFmpeg command.

Inspectors:

Execute On Start: Execute the command at the beginning of the scene. If not uses, please call `StartFfmpeg()` when want to start command.

Use Built In: If this is ON, uses FFmpeg from this assets. OFF, uses installed FFmpeg on devices. If you want to OFF, you must to install and PATH settings to local devices. For Android and iOS, ignored this value. If you are not sure, do not turn it OFF.

Options: FFmpeg commands option. If you set below, this replace to path when execute command.

```
{STREAMING_ASSETS_PATH} : Application.streamingAssetsPath
{PERSISTENT_DATA_PATH} : Application.persistentDataPath
{TEMPORARY_CACHE_PATH} : Application.temporaryCachePath
```

5-2. FfmpegPlayerCommand

Setting video to FfmpegPlayerVideoTexture, and audio to AudioSource.

Inspectors:

Execute On Start, Use Built In, Options: Same as FfmpegCommand.

Input Options: FFmpeg commands option before input streams.

Default Path:

Default Path: Standard path. Both are the same:

```
Default Path: STREAMING_ASSETS_PATH
Input Path: sample.mp4
```

```
Default Path: NONE
Input Path: {STREAMING_ASSETS_PATH}/sample.mp4
```

Input Path: Video File path.

Auto Settings: Auto Setting to video size etc. In most cases ON.

Video Textures: Depending on the FfmpegPlayerVideoTexture settings, the following will be done:

```
FfmpegPlayerVideoTexture.VideoTexture is empty: Make Texture2D to VideoTexture.
Please set with scripts to Renderer etc.

FfmpegPlayerVideoTexture.VideoTexture is setted in RenderTexture: Write to
RenderTexture.
```

Audio Sources: Set audio to AudioSource's clip.

5-3. FfmpegCaptureCommand

Capture video and audio, and save movies or streaming.

NOTE: When processing is not in time, video speed may be abnormally high. If that happens, please reduce the processing (change video size etc.).

Execute On Start, Use Built In, Options: Same as FfmpegCommand.

Capture Sources: Input for capture. If Video Size is 0 or less, this value is auto setting.

5-4. FfmpegBytesCommand

It is bytes input/output version of FfmpegCommand.

Set the input bytes to `AddInputBytes(bytes, inputNo)`.
(`inputNo` is input stream's number corresponding to 'Input Option'.)

Get the output bytes from `GetOutputBytes(outputNo)`.
(Return value is byte[])
(`outputNo` is output stream's number corresponding to 'Output Option'.)

Input Options: Number of input streams, and FFmpeg commands option before input streams.

NOTE: The number of this list matches the number of streams.
Even if you don't need the options, you need to prepare items for the number of streams (can be blank).

Output Options: Number of output streams, and FFmpeg commands option before output streams.

NOTE: Note the same as 'Input Options'.

5-5. FfmpegBytesPlayerCommand

It is bytes input version of FfmpegPlayerCommand.

Please check FfmpegPlayerCommand and FfmpegBytesCommand.

5-6. FfmpegBytesCaptureCommand

It is bytes output version of FfmpegCaptureCommand.

Please check FfmpegCaptureCommand and FfmpegBytesCommand.