



# Video Capture Plugin

**Version 1.1**

Created by RockVR

<http://vrcapture.rockvr.com/>

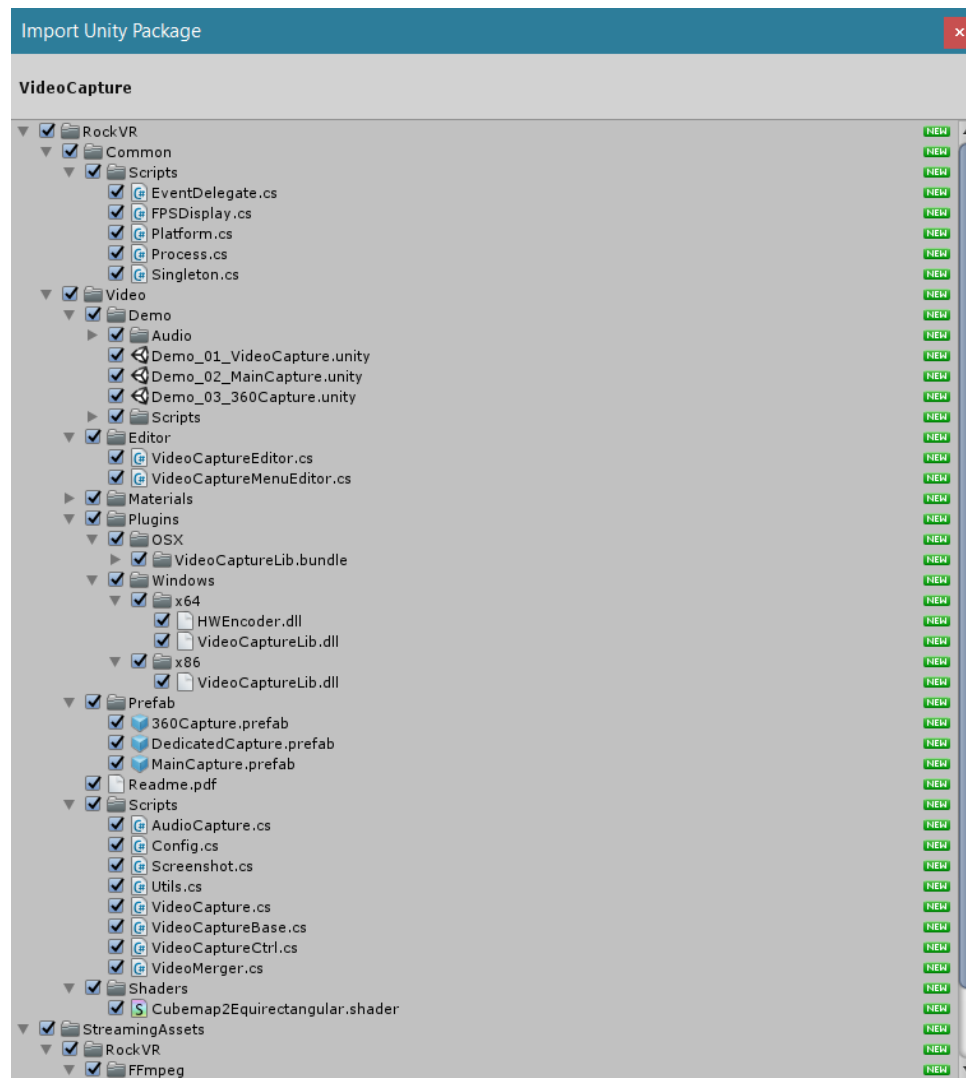
Contact: [dev@rockvr.com](mailto:dev@rockvr.com)

# 1 Introduction and Overview

*Video Capture* is a plugin that enables you, the Unity developer, to capture video and audio from your Unity application. It's great for recording video trailers, demos and in-app footage for your Unity-based game or app. It's fast, flexible and easy to use. When the video is recorded you decide how it's handled. Give your users complete freedom to share it, restrict it to playback from within your app, or anything in between.

*Video Capture* include *FFmpeg* build, it's a third party, open source, cross-platform tool that lets you easily convert video formats, and is bundled with Video Capture. You can learn more about *FFmpeg* through <http://ffmpeg.org/>.

When you import *Video Capture* plugin into your Unity project, the following assets will be added:



Module	Description
<a href="#"><i>RockVR/Common/Scripts</i></a>	Common scripts will be used among all <a href="#"><i>RockVR</i></a> plugins, such as utility and helper functions.
<a href="#"><i>RockVR /Video/Demo</i></a>	Contains the scene file and all other assets for a fully functional demonstration of Video Capture.
<a href="#"><i>RockVR /Video/Editor</i></a>	Contains helper scripts and resources used in the Unity Editor and Inspector window.
<a href="#"><i>RockVR /Video/Materials</i></a>	Materials used for video processing, such panorama video stich.
<a href="#"><i>RockVR /Video/Plugins</i></a>	Contains the platform depend native library plugins.
<a href="#"><i>RockVR /Video/Prefab</i></a>	Contains useful prefabs can be drag and drop to your scene.
<a href="#"><i>RockVR /Video/Scripts</i></a>	Contains the core video capture logic scripts.
<a href="#"><i>RockVR /Video/Shaders</i></a>	Shader work with material for video processing.
<a href="#"><i>StreamingAssets/RockVR/FFmpeg</i></a>	Contains the FFmpeg binaries for Windows and Mac OSX. If you are only building for one target platform, you can exclude the file you don't need.

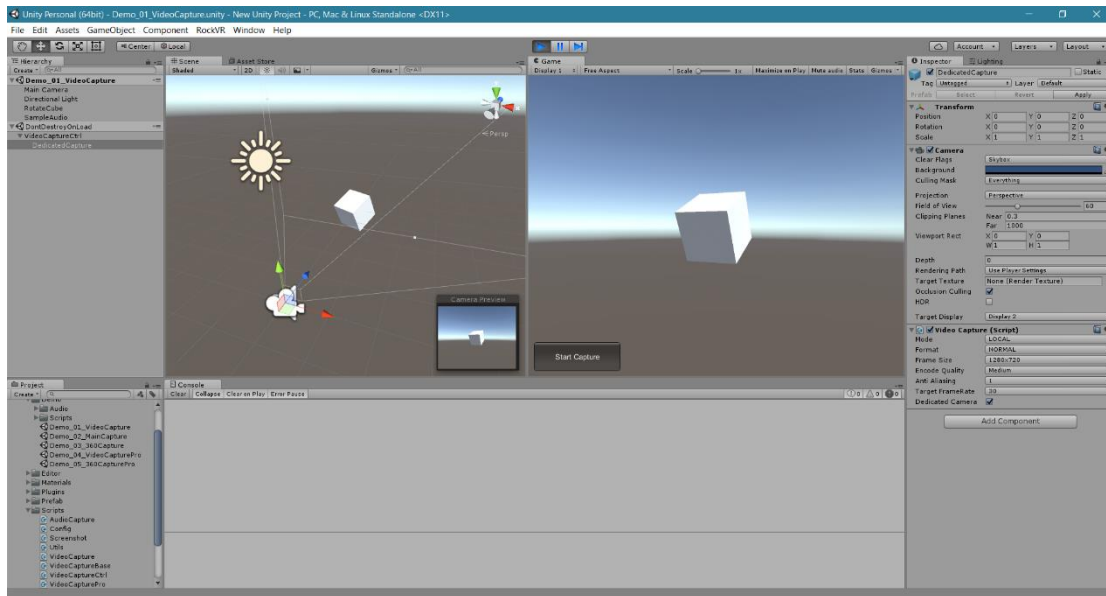
This guide covers integrating Video Capture to your own Unity project, and provides a detailed explanation on how the package works under the hood.

If you have any questions, feedback or having issues, please contact us directly at [dev@rockvr.com](mailto:dev@rockvr.com). We will try our best to respond as quickly as possible.

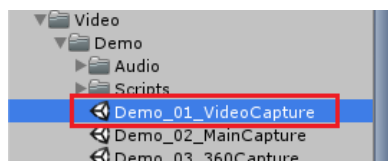
## 2. Quick Start Demo

Video Capture come with several demos to help you understanding functionality of plugin quickly. Start by creating a new project and importing all Video Capture package assets included demo scenes files.

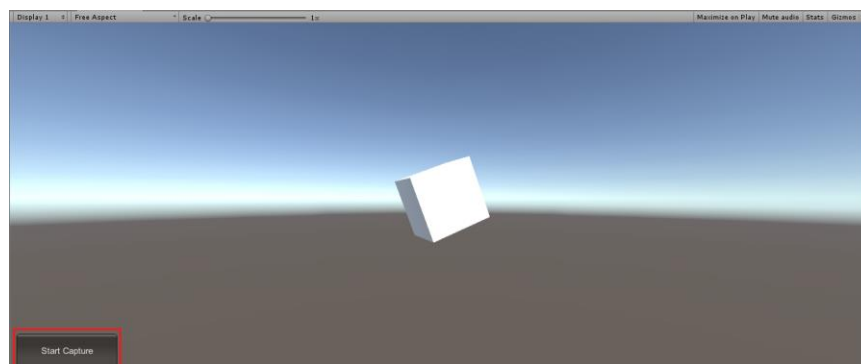
First demo demonstrates basic video record functionality with a dedicated camera:



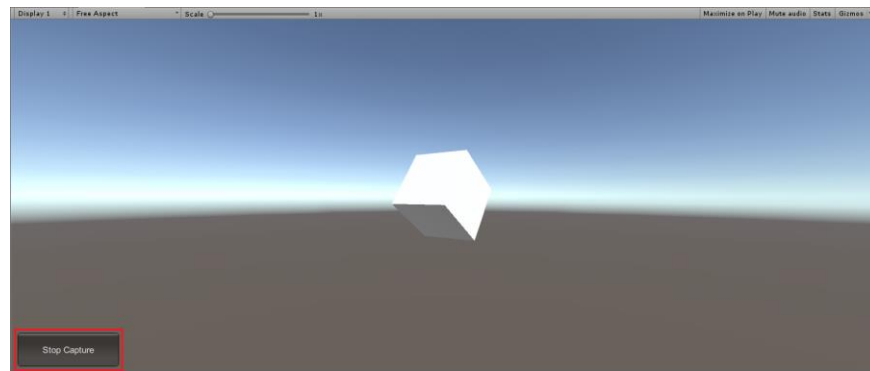
**Step 1:** Open the *Demo\_01\_VideoCapture* scene located in *Assets/RockVR/Video/Demo/*:



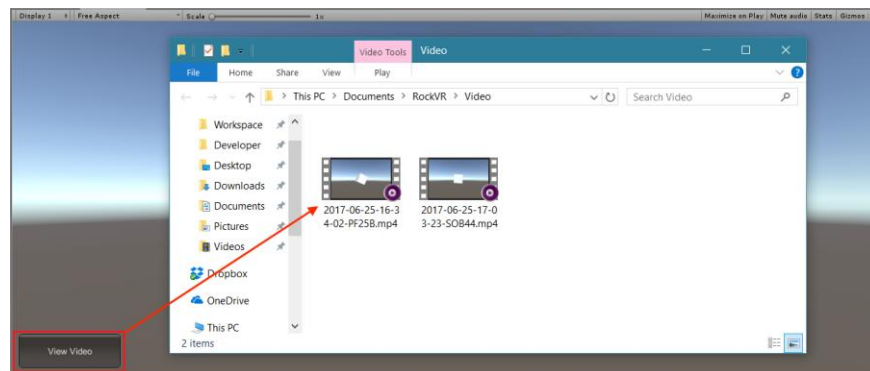
**Step 2:** Play in editor, click *Start Capture* button:



**Step 3:** Wait few seconds (depend how long you want record), then click [Stop Capture](#) button:

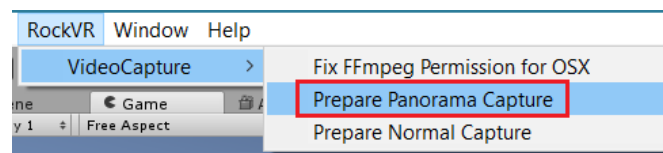


**Step 4:** Click [View Video](#) button to check out the video you just recorded.



**Note:**

1. For 360 video record, it not supports multi-camera record, and require running [Offline Render](#) mode during record session, that means it will move to next frame until the current frame record succeed. Before record start, please click [Prepare Panorama Capture](#) item in [VideoCapture](#) menu.
2. If you cannot generate video on OSX platform, this may due to program have no permission to run FFmpeg. To fix this, please click [Fix Ffmpeg Permission for OSX](#) item in [VideoCapture](#) menu.



There are few more demo you can try, [Demo\\_02\\_MainCapture](#) is record from your Main Camera and [Demo\\_03\\_360Capture](#) is for recording 360 video. The setup process should be same.

## 3. Core Module

*VideoCaptureCtrl* - This module used to control and manage *VideoCapture* and *AudioCapture* module to generate desired videos.

*VideoCapture* - The core module to gather texture frame from Unity and encode to video file.

*AudioCapture* - The core module to gather audio sample from Unity and encode to audio file.

*VideoCaptureCtrlPro* - Available in Pro version, work same as *VideoCaptureCtrl*.

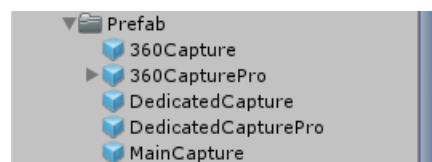
*VideoCapturePro* - Available in Pro version, work same as *VideoCapture* but with hardware acceleration enabled.

## 4. Integration Guide

The integration process of *Video Capture* will be extremely easy:

**Step 1:** Attach *VideoCapture.cs* script to a game object (or you can just create a new empty object) in your scene, this script will add a camera to capture scene in your game.

In additions, you can just drag and drop preset prefab into your scene which located in *Assets/RockVR/Video/Prefab* folder:



*DedicatedCapture* - Used to capture perspective different with main camera.

*MainCapture* - Used to capture main camera's perspective, the original main camera should be replaced with this prefab.

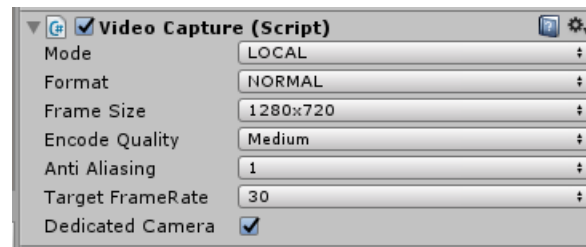
*360Capture* - Used to capture 360 degree panorama video.

*DedicatedCapturePro* - Same as *DedicatedCapture* with high performance.

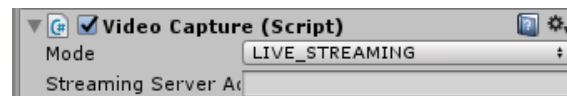
*360CapturePro* - Same as *360Capture* with high performance.

**Step 2 (Optional):** Configure *VideoCapture* component's properties:

Common Properties:



*Mode* - You can set mode as *Local* or *Live Streaming*, Local mode will record your video in device. If set *Live Streaming*, you need fill out the remote rtmp server address, and this is Enterprise version feature, please contact us through [dev@rockvr.com](mailto:dev@rockvr.com) if you want use this feature:



*Frame Size* - Resolution of recorded video, the higher size, the better video quality, but more performance loss.

Available size is: 640x480, 720x480, 960x540, 1280x720, 1920x1080, 2048x1080, 3840x2160 and 4096x2160.

*Encode Quality* - Lower quality will decrease file size on disk and video bit rate.

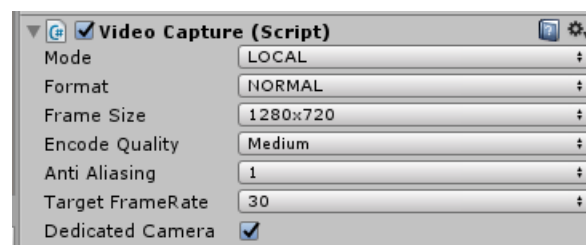
Available quality is: Low (1000 bit/s), Medium (2500 bit/s) and High (5000 bit/s).

*Anti-Aliasing* - Set anti-aliasing factor for frame captured, higher anti-aliasing will increase video quality.

*Target Framerate* - Set target frame rate for recorded video, to avoid performance loss, use lower target framerate.

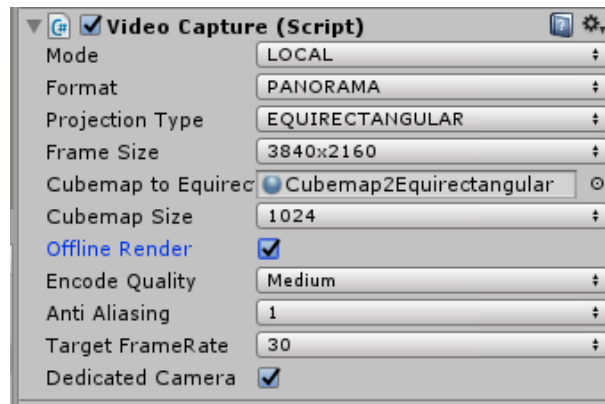
*Dedicated Camera* - Set false for main camera, and true for individual camera.

Flat Video Properties:



*Format Type* - Set as *NORMAL* for flat video capture.

Panorama Video Properties:

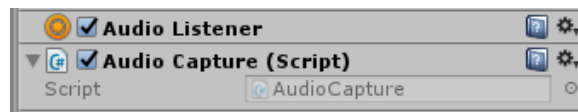


**Format Type** - Set as **PANORAMA** for 360 video capture, 360 video capture camera always use dedicated camera.

**Projection Type** - Currently you can choose **EQUIRECTANGULAR** or **CUBEMAP**, most video platform support equirectangular format, like Youtube, etc. However, cubemap format can reduce bitrate for generated video.

**Cubemap Size** - Square pixel size of frame captured by each direction camera. If use CUBEMAP type, **Frame Size** will not work, the size will be  $(3 \times \text{Cubemap Size}) \times (2 \times \text{Cubemap Size})$ .

**Step 3:** Attach **AudioCapture.cs** script to the Main Camera (which contains Audio Listener) to enable the audio record function:

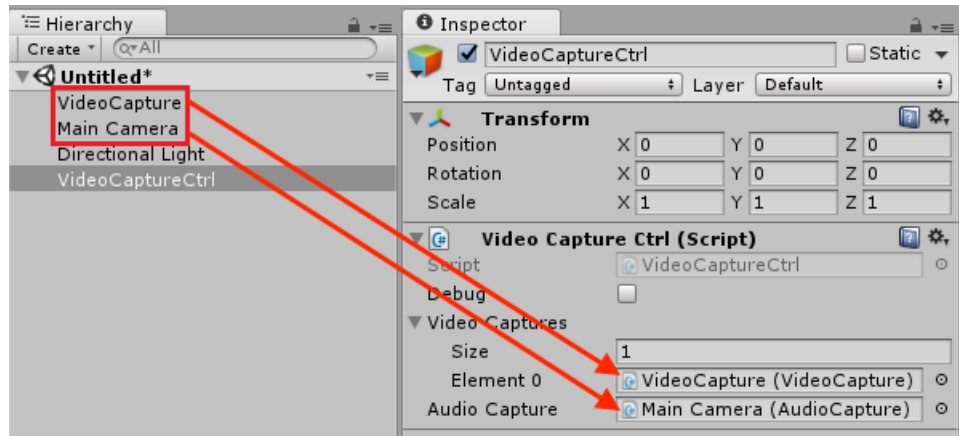


**Note:** This step is not required in Pro version.

**Step 4:** Attach **VideoCaptureCtrl.cs** script to a game object (or you can just create a new empty object) in your scene, this script is used to manager the work of video and audio processor, and merge video stream and audio stream into one video container file.

Drag **VideoCapture** and **AudioCapture** set in previous step into **VideoCaptureCtrl** properties (You can set multiple cameras):





**Step 5:** Enable video capture function by code, *VideoCaptureCtrl* provide API to start or stop video recording, you can call those functions according to your requirements:

```
// Start video capture.
VideoCaptureCtrl.instance.StartCapture();

// Game logic...

// Stop video capture.
VideoCaptureCtrl.instance.StopCapture();
```

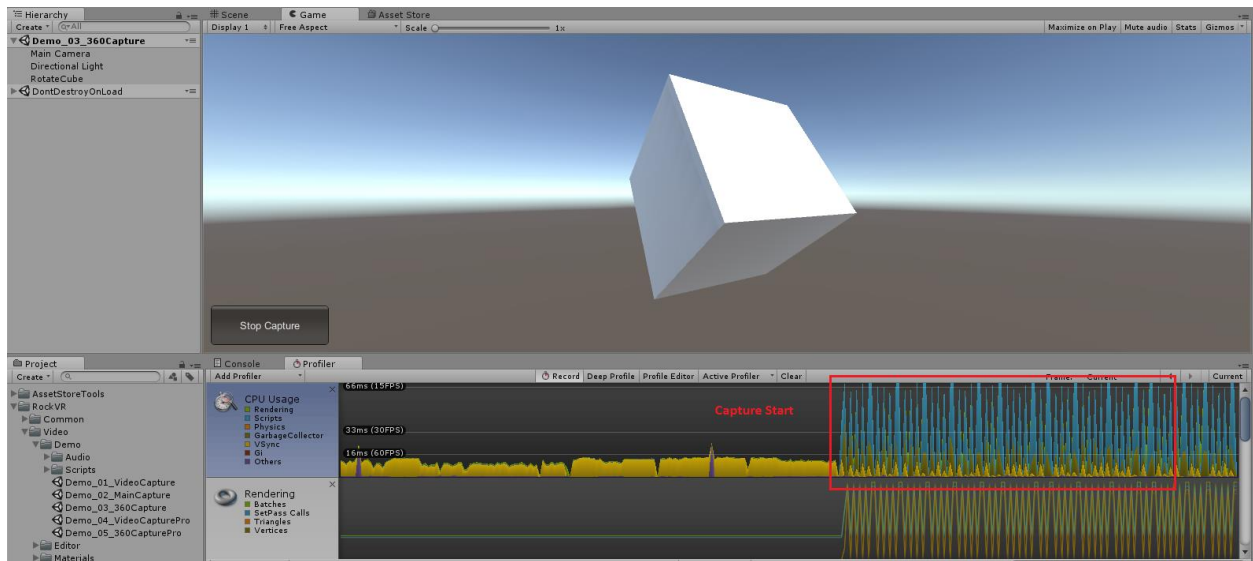
Default the video will be saved to user document folder, for more details and to modify please check [Config.cs](#):

```
/// <summary>
/// Config setup for video recording path.
/// </summary>
public class PathConfig
{
    public static string persistentDataPath = Application.persistentDataPath;
    public static string streamingAssetsPath = Application.streamingAssetsPath;
    public static string myDocumentsPath = Environment.GetFolderPath(
        Environment.SpecialFolder.MyDocuments);
    /// <summary>
    /// The video folder, save recorded video.
    /// </summary>
    public static string saveFolder
    {
        get
        {
#if (UNITY_ANDROID || UNITY_IOS) && !UNITY_EDITOR
            return persistentDataPath + "/RockVR/Video/";
#else
            return myDocumentsPath + "/RockVR/Video/";
#endif
        }
    }
}
```

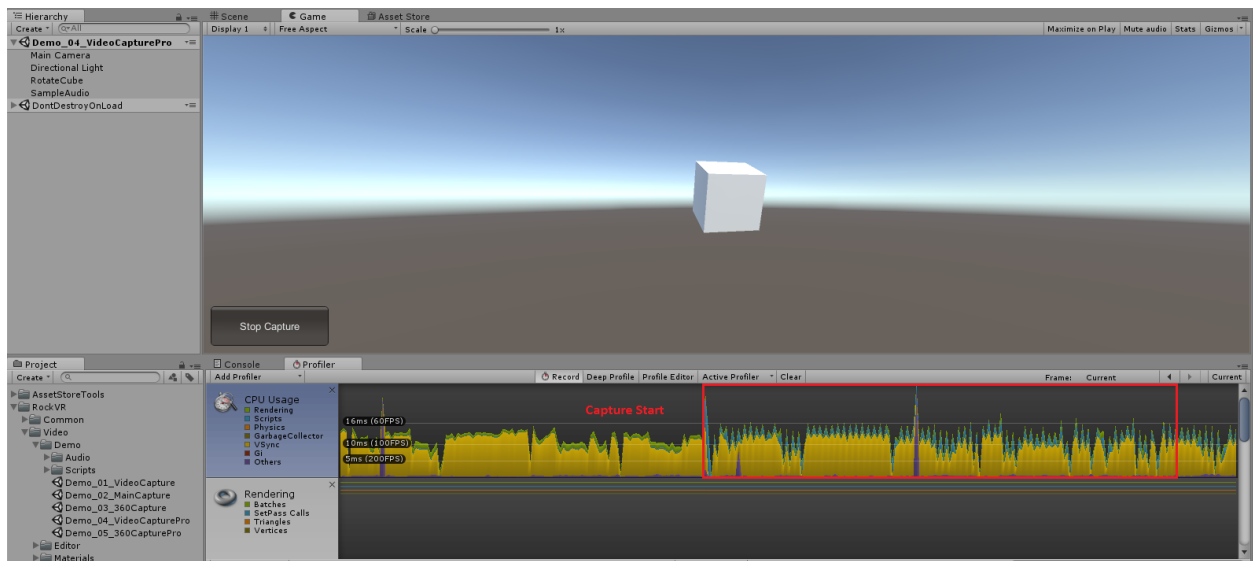
After all setup, you should be able to start capture your fantastic game!

*Video Capture Pro* setup is quite same as free version setup process, the *Pro* version will remove the *RockVR* watermark and enable hardware encode improvement. The *Pro* version can generate the 360 video in real time, the profiler windows between *Free* version and *Pro* version to capture 360 video:

### 360 Capture:



### 360 Capture Pro:



## 5. Video Capture Pro & Enterprise

Instead of *Video Capture Free* version, *RockVR* also provide Pro and Enterprise version.

You can purchase *Pro* version from asset store: <http://u3d.as/Srt>

For *Enterprise* version features, please contact us by email: [dev@rockvr.com](mailto:dev@rockvr.com).

Feature	Free	Pro	Enterprise
Video Capture	√	√	√
Audio Capture	√	√	√
360 Video Capture	√	√	√
Remove Watermark		√	√
High Performance Capture		√	√
Game Replay System			√
Server Side Rendering			√
All Platform Support (Desktop and Mobile)			√
Instant Share (Facebook, Youtube)			√
Live Streaming			√

## 6. Feedback

If you have any feedback to [Video Capture](#) plugin, please email us directly, your suggestion will be very valuable to us. If you plan integrate a plugin into your game, please contact us by [dev@rockvr.com](mailto:dev@rockvr.com) and we will provide more help to let you share your awesome game more efficient.