

UNITY - RECORDER

V0.1 User Manual

INTRODUCTION

Use the Unity Recorder to capture and save in-game data. For example, use the Unity Recorder to capture and save an mp4 file during game play.

The Unity Recorder package includes six separate recorders that supports image sequence recorders and multiple frame recorders. The Unity Recorder package supports the following formats:

- image sequences: JPG, openEXR, PNG
- multi-frame file formats: GIF, MP4, WebM

The Unity Recorder includes a Recorder window for setting-up and triggering recording sessions from the Unity Editor. The Recorder window triggers and manages events such as entering play mode, recording requested data, ending recording, and exiting play mode.

The Unity Recorder also supports Timeline. Use Recorder tracks and clips to trigger recording session from Timeline instances.

EXTENSIBLE RECORDER SYSTEM

The Unity Recorder implements an extensible recorder system where developers can create and integrate new recorders into the Unity Recorder system. The underlying recorder framework provides the potential to build recorders that record any data accessible from scripts during play mode. Basically, if data can be queried, then the data can be recorded. For information on the recording framework and how to create new recorders, visit the GitHub project: [GenericFrameRecorder](#).

LIMITATIONS

This Unity Recorder has the following limitations:

- The Unity Recorder does not support sound.
- The Recorder window and Recorder properties are not available in standalone players.
- MP4 encoding is only available on Windows.

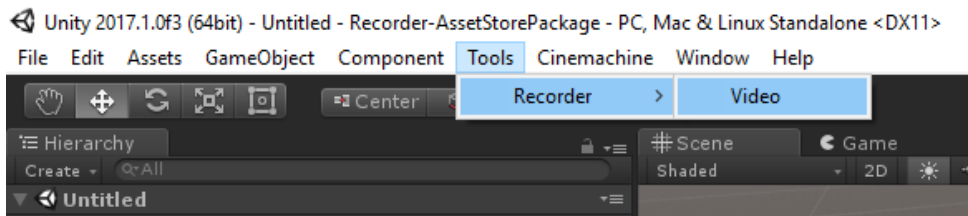
USING UNITY RECORDER

This section provides workflows on how to use the Unity Recorder to record from the Unity Editor or from a Timeline instance. This section documents the following workflows:

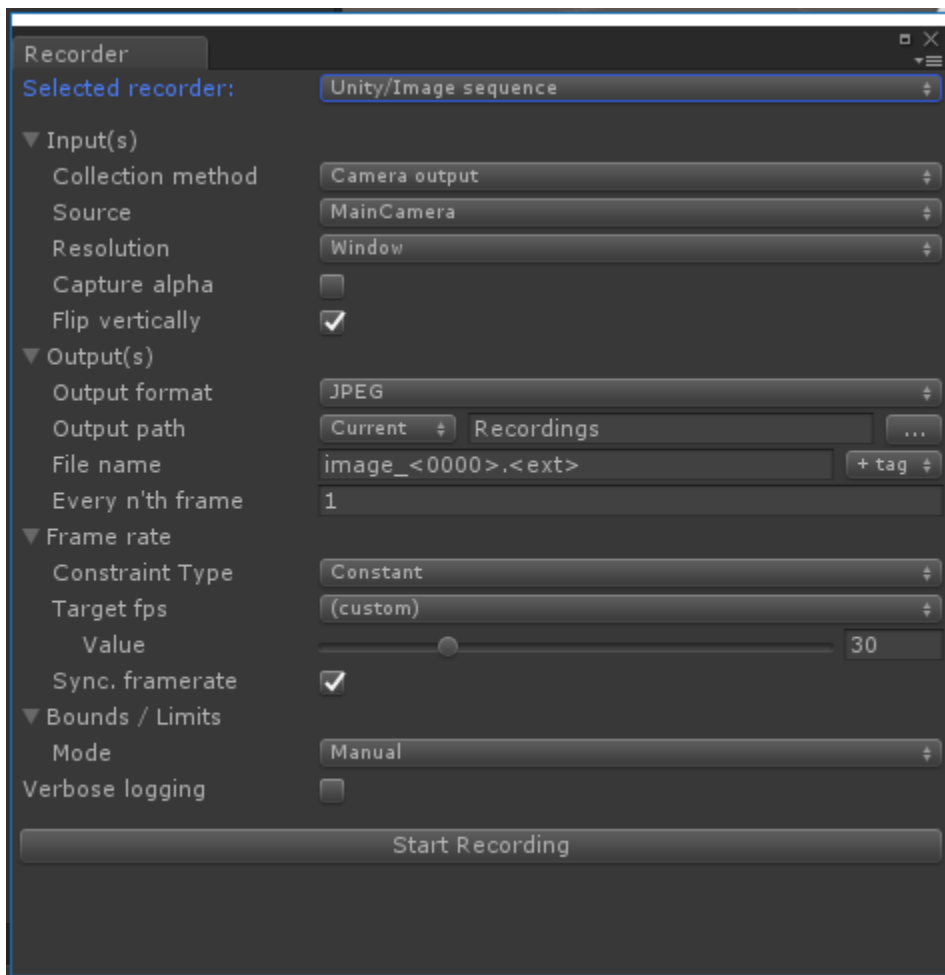
- Recording in Game Mode
- Recording from a Timeline Track

RECORDING IN GAME MODE

Select the recorder category from the Tools menu (Tools > Recorder). For example, to select the Video recorder category, select Tools > Recorder > Video.

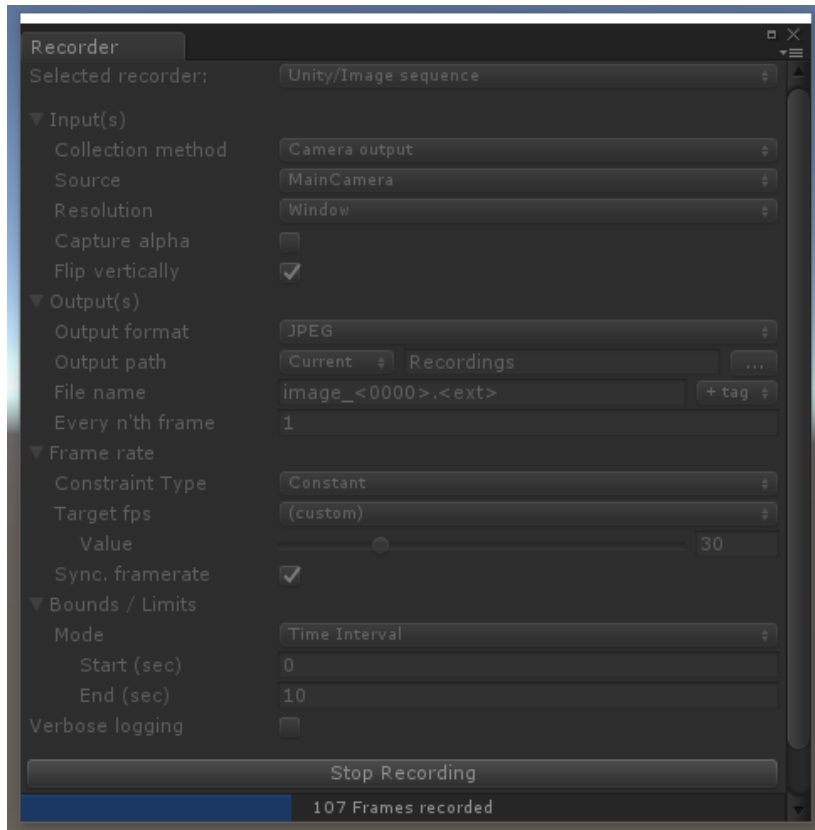


The Recorder window opens displaying the recording properties for the selected category.



Use the recording properties to set what to record, how to record, and when to record. Some recording properties are common to all recorders while other properties apply to specific recorders. See Recorder Properties.

After setting the recording properties, click the Start Recording button to launch the recording session.



Launching the recording session does the following:

- The Unity editor switches to Play mode.
- The Bounds/Limits section affects when recording starts and when recording stops. For example, setting the Mode to Time Interval and setting the Start property to zero seconds and the End property to 10 seconds, starts recording immediately after switching to Play mode.
- When recording starts, the Stop Recording button replaces the Start Recording button.
- If Time Interval is the selected Mode, a progress bar appears under the Stop Recording button. The progress bar displays the number of frames or images recorded.

Note: When in Play mode, the Recorder properties are read only.

When recording stops, by either clicking the Stop Recording button or when the recording session ends, the Unity Editor switches to Edit mode.

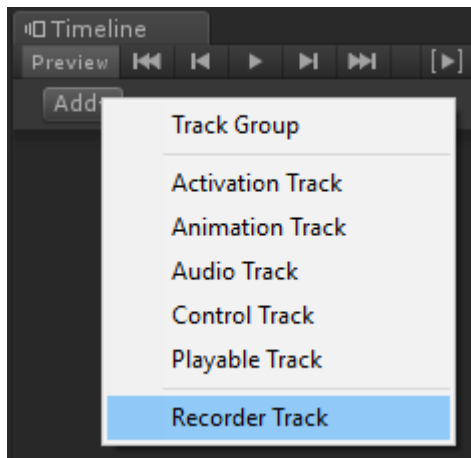
The recording properties are persisted as an asset in the project; re-opening the Recorder window restores the values of the last recording session.

You can also open the recording window from Play mode (not available in standalone players). In Play mode, the Recorder properties cannot be modified, but the Start Recording button is available.

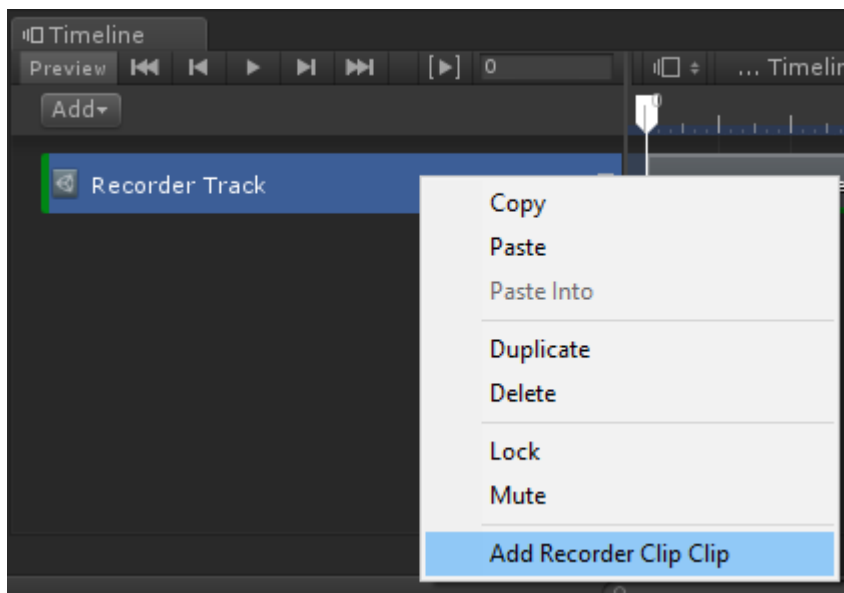
RECORDING FROM A TIMELINE TRACK

To setup a recording session in a Timeline instance, select the GameObject in your scene that is associated with the Timeline Asset.

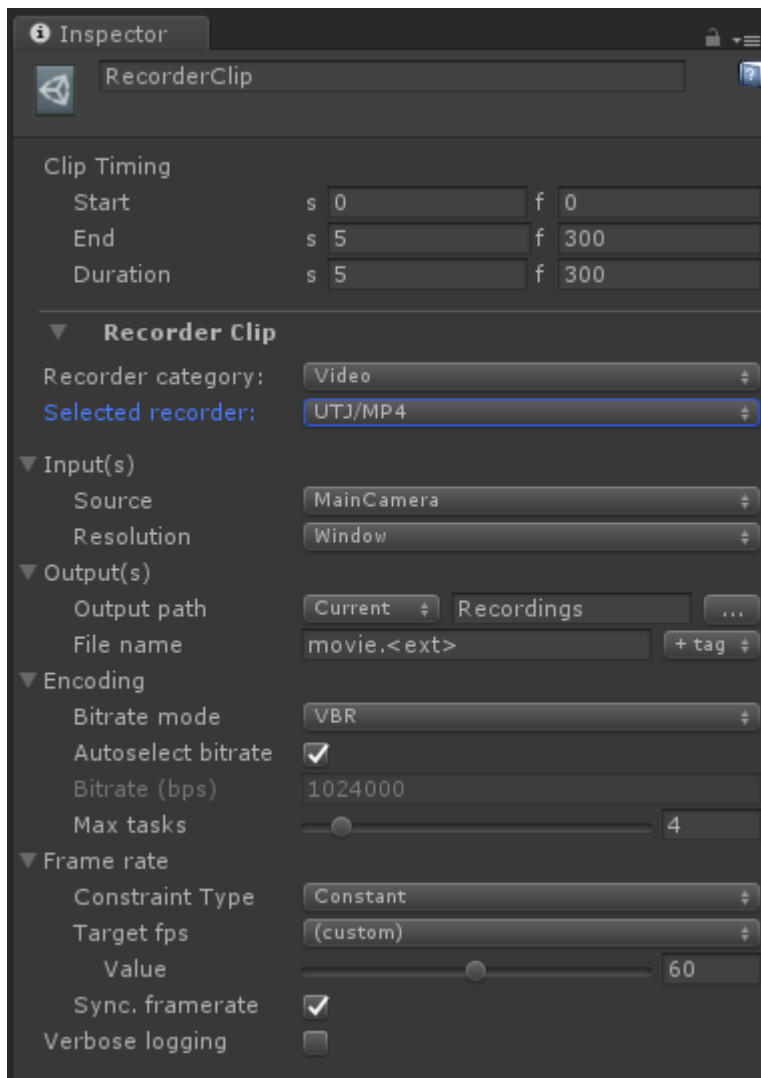
In the Timeline Editor window, click Add and select Recorder Track.



Right-Click the Recorder Track and select Add Recorder Clip from the context menu.



Select the Recorder Clip to view its recording properties in the Inspector window.



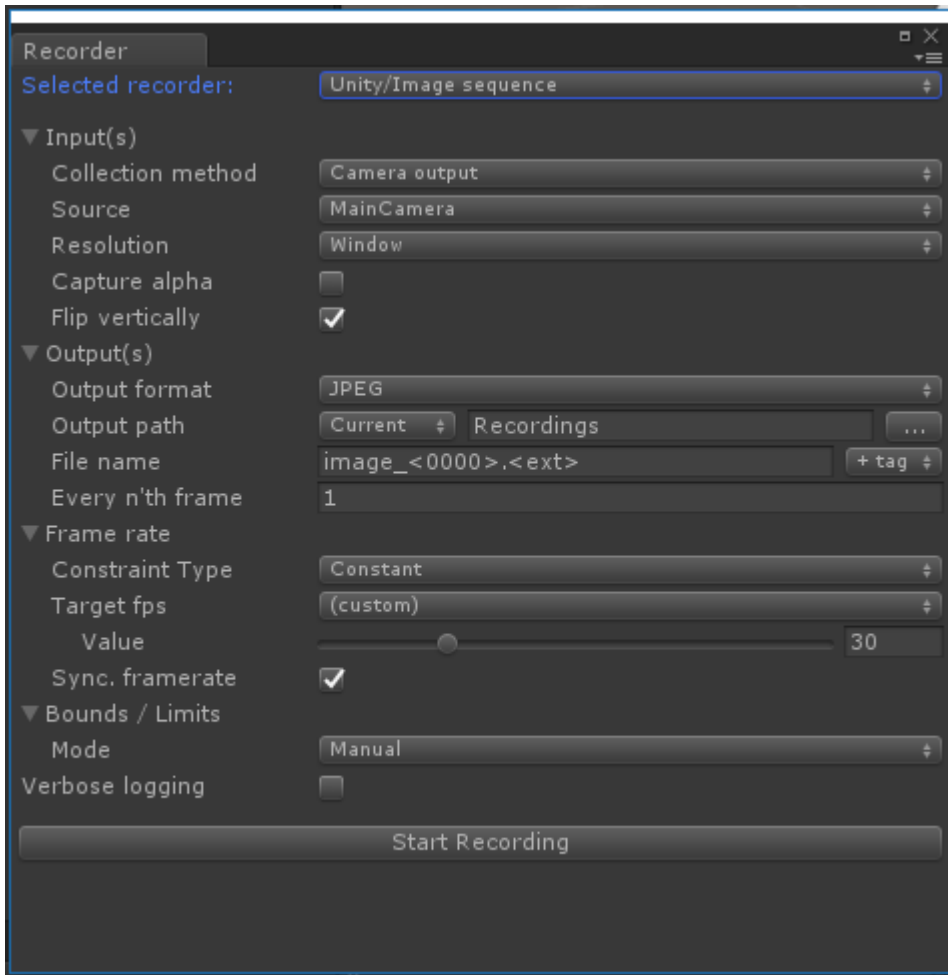
The Recorder Clip properties are the same properties as shown in the Recorder window except for the following differences:

- The Clip Timing section replaces the Bounds/Limits section. Instead, use the Start, End, and Duration properties to set when recording occurs.
- Use the Recorder Category property to select which recorder the clip uses to capture video or image sequences.

The Recorder Clip properties are stored in the Timeline Track and do not affect the properties in the Recorder window. See Recorder Properties.

RECORDER PROPERTIES

The Recorder properties appear in the Recorder window. The Recorder properties also appear in the Inspector window when you select a Recorder Clip in the Timeline Editor window.



This section provides information on each group of recorder properties:

RECORDER CATEGORY AND/OR SELECTED RECORDER

Use these properties to select the category of recorder and the type of recorder. The category and selected recorder determines what will be recorded, the destination format, and impacts the other available recording properties. The Recorder Category property appears in the Inspector window

INPUT(S)

Use these properties to specify what is being recorded. This group of properties also specifies the method used to collect the data that is passed to the recorder for encoding. The Input properties change depending on the selected recorder.

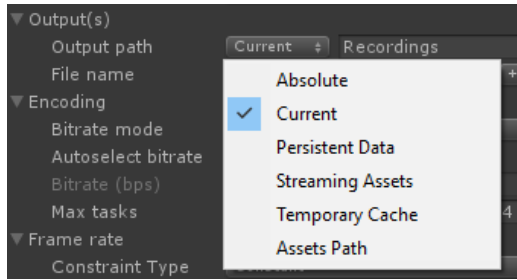
OUTPUT(S)

Use these properties to specify the destination, file format, file name, and other output properties. The Output properties change depending on the selected recorder. The common Output properties are documented below.

- **Output Path**

Use the Output Path property to specify the path where the recorded file(s) are saved. Use the

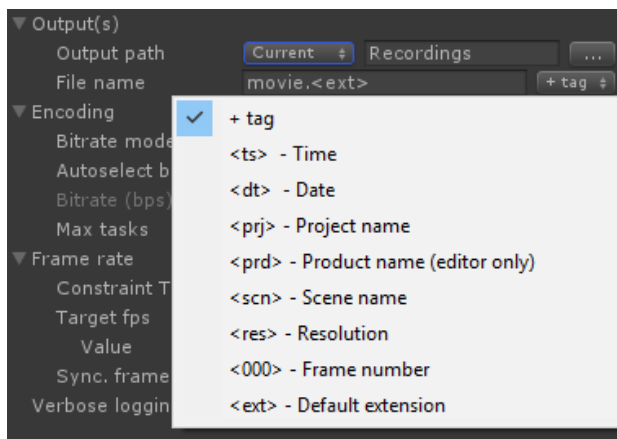
selector to target specific Unity directories, or non-Unity related paths.



Use the text field to create a new directory or reference an existing directory. Click the “...” button to navigate to a specific directory. Hover over the “...” button to display the absolute path as a tool tip.

- **File Name**

Use the File Name to specify the name of the output file or the pattern when saving many output files. Use the text field to specify the pattern used during recording many files. Use the “+ tag” button to insert or append text from specific tags. The list of supported tags is shown below:



Note: The <000> tag can have from 1 to 9 zeros.

ENCODING (OPTIONAL)

Use these properties to specify fine control over how recorder input is converted to the specified output format. The Encoding properties are provided for some selected recorders. For example, the MP4 recorder includes Encoding properties for adjusting the bitrate.

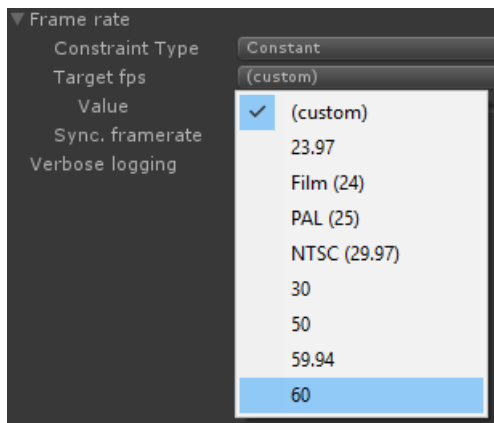
FRAME RATE

Use these properties to specify how to constrain the frame rate during recording. The frame rate affects the size and number of the captured output files. The common Frame Rate properties are documented below.

- **Constraint Type**

Use this property to specify how to constrain the frame rate during the recording. Possible values are Constant and Variable:

- Select **Constant** to limit the Unity Recorder to a specific frame rate. When Constant is selected, use the Target fps property to specify an industry-recognized frame rate or a custom frame rate.



The Unity Recorder captures at the target frame rate regardless of whether the game is played at a higher or lower frame rate. For example, if the Target fps is set to a custom value of 30 fps but the game plays at 60 fps, the recording is captured at 30 fps.

- Select **Variable** to set a maximum frame rate. The Unity Recorder limits the maximum frame rate to the value specified by the Max fps property. For example, if the Max fps property is set to 60 fps, the recording is captured at 60 fps or lower.
- **Sync. Framerate**
Use the Sync. Framerate property to fix a synchronization issue that occurs when the Unity Recorder is constrained to a constant frame rate lower than what the machine is capable of producing. In this case, Play mode is accelerated but the resulting recording is captured at the correct frame rate. This can make controlling the game difficult since the game play interactions occur too fast. Enable Sync Framerate to slow down the display so that simulation is run in real-time, but at the requested fps.

BOUNDS/LIMITS

Use these properties to specify when the recording session begins and ends. The Bounds/Limits properties only appear in the Recorder window. These properties are replaced by the Clip Timing properties when using Recorder Tracks and Recorder Clips in the Timeline.