

ISO Recording Information and Changes for Version 14.1

Introduction

ISO (or Isolated Output) is a Wirecast Pro feature that allows you to create clean recordings of your system devices (cameras, capture cards, or mics) even when they are not being displayed in the *Live* canvas window. This is often helpful when you want to edit together a video-on-demand version of your live show – you can have recordings of all your cameras even when they weren't live in your broadcast.

In versions prior to 14.1, Wirecast offered the option to record one source for video and another source for audio in a single ISO recording.

Starting in version 14.1, we've made 2 major changes to ISO recording:

- 1) Our Capture Source ISO capability, which previously allowed you to add one video and one audio source to ISO record, now only allows you to choose one source. So, you can no longer combine separate audio and video raw sources into one ISO recording.
- 2) We added a Shot ISO recording capability to let you record any "shot" that's on the Main Shot Display. This lets you mix two or more sources into a single shot, and record that, or also ISO record sources that were previously not available for ISO recording.

Why the changes?

Previously, Wirecast's Capture Source ISO capability allowed you to create a clean ISO recording of almost any video or audio source. However, there were several types of sources that we categorize as unreliable such as WebRTC (Rendezvous and Wirecast Go), NDI, Webstream, and Elgato capture sources. These sources tend to drop out, change their resolution mid-stream, or deliver bad timestamps. These characteristics lead to unusable ISO recordings.

Additionally, our ISO capability used to allow you to mix two different sources into a single ISO recording such as video from a CamLink device and audio from an external mixer. The problem with mixing different sources is that their clocks tend to drift apart over time and that could lead to sync issues in the recording.

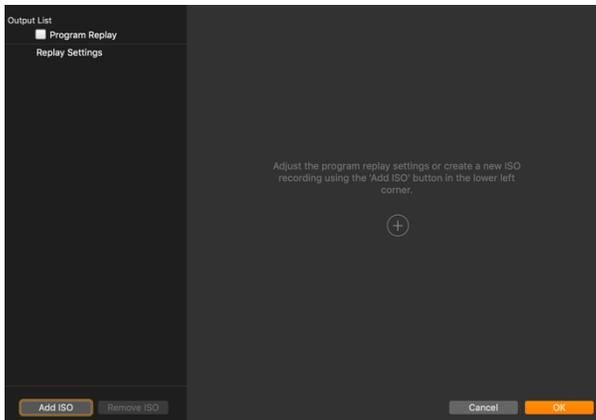
Now we offer two ISO options: the option to record individual sources and an added ability to record individual shots. You can now choose any shot in your document to record, including shots that you can specifically compose for the sake of ISO recording, and shots can also contain any set of sources, including those that might be considered unreliable.

Configuring Your ISO Recordings

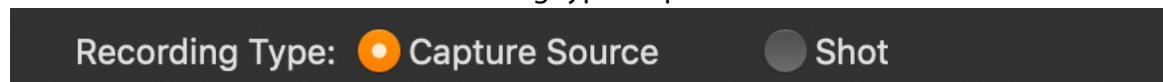
- Select “Configure” from the Replay+ISO main navigation



- Click on “Add ISO”

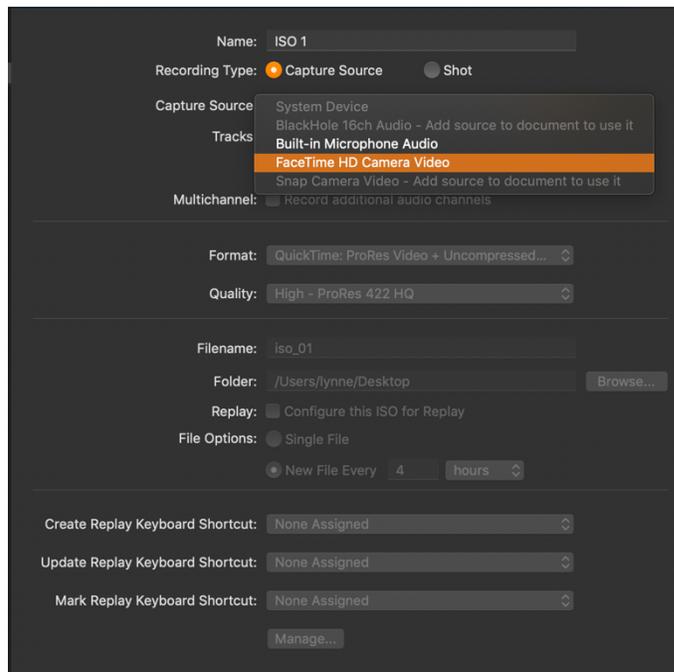


You now have two choices for Recording type: Capture Source ISO or Shot ISO.



Capture Source ISO

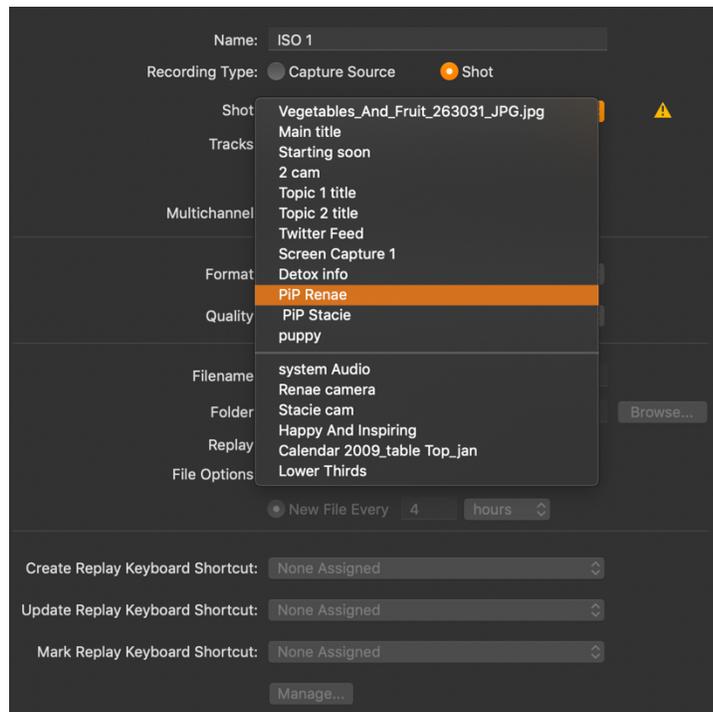
- **Capture Source ISO** lets you ISO record an individual camera or audio source, (e.g. your Facetime Camera, or a camera plugged in via a capture card) and is similar to Wirecast’s previous ISO recording functionality.
 - NOTE: certain sources, such as Rendezvous guests, Web Stream sources, IP Cameras sources, Web Page plugin sources, or Wirecast Go sources will not show up as available Capture Source sources, as noted above.



- If your chosen source produces both video and audio, you will have the option to include which media tracks are included from your single source.
- If you want to record audio that is coming from a separate source (like from a separate microphone), you can either set up another Capture Source ISO for that audio separately, OR you can place your chosen video and audio sources into a single SHOT on the Main Shot Display, and use SHOT ISO to record that shot.
- Legacy ISO recordings that mix video and audio from two different sources will be split into two separate source recordings (one for Audio, one for Video).

Shot ISO

- **Shot ISO** lets you ISO record any shot on the Main Shot Display. The advantage of this, is you can combine any audio and video sources into a shot. You can also record shots that contain sources that aren't available in Capture Source ISO, like Rendezvous guests, and IP camera sources.



- If your chosen shot has both video and audio, you will have the option to include which media tracks are included from shot.
- Shot recordings will produce video at the canvas resolution and frame rate. Audio will match our internal mixer which is stereo, 32-bit float, 48 kHz.
- Note: Any animated graphic or media file contained in your shot will not play as part of a Shot ISO recording. So, if you don't want a static image where your media is, you should place that source in a different shot on a different layer.
- Audio-Only Recordings: In prior releases, it was not possible make audio-only ISO recordings. Now Wirecast allows this.

The ISO configuration dialog now displays the selected source's current video resolution and framerate so you know what to expect in your recording. The same goes for audio channels, bits per sample, and sample rate. When no source is selected or the source does not produce a certain type of media, 'None' is displayed where the source media information would normally appear (next to the corresponding video/audio media track checkboxes).

Recording Type: Capture Source Shot

Shot: PIP Renae

Tracks: Video (1280x720p30)
 Audio (Stereo 16 bit 48 kHz)

Multichannel: Record additional audio channels

Format and Quality:

In prior releases, Wirecast used MJPEG encoding for ISO+Replay recording on Windows and ProRes on Mac. Now Wirecast offers ProRes and x264 on both Mac and Windows.

- **Format**
 - **QuickTime: ProRes Video Video + Uncompressed Audio:**
 - ProRes is better suited for NLE work. Also, color space information is less ambiguous.
 - **QuickTime: x264 Video + Uncompressed Audio:**
 - x264 is a compressed video file that results in significantly smaller file sizes.
 - x264 recordings are still placed in QuickTime files and still paired with uncompressed audio. Uncompressed audio offers top quality and minimal CPU drain for archival purposes.
 - You can choose the bitrate and keyframe interval for recordings that use x264 encoding. The default values are 10 Mbps with 15 frames/second. The defaults were chosen for high quality full HD archival. We use the high-profile encoder setting and the "fast" x264 algorithm with variable bitrate encoding.

File names

Filename: iso_01

Folder: /Users/mike/Desktop Browse...

Replay: Configure this ISO for Replay

- Each new ISO recording you create in a document includes the next number in a sequence that begins with 1 and is incremented when you create a new ISO configuration. For example, the first ISO will be named "ISO 1", the second will be named "ISO 2", third "ISO 3", and so on. Likewise, filenames given will be "iso_01",

"iso_02", "iso_03", and so on. (Savvy users will appreciate that name-sorted listings of recordings on disk will remain in order beyond the 9th ISO configuration.)

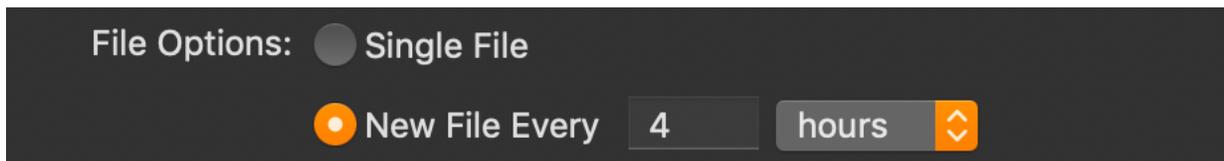
- You can always choose another name for the files, but that will not affect the sequencing. So if you rename "ISO 1" to "Names Don't Matter", the next ISO will still be named "ISO 2" by default.

Folder:

- Wirecast will now remember the last folder you assigned to an ISO recording configuration and uses that folder as the default for the next configuration that you create. This setting is app-wide so it will transfer between projects.

Replay:

- Check this to configure your ISO recording to be available for instant replay within your broadcast. This can be applied for Capture Source ISOs as well as Shot ISOs (See tutorials on Replay for more information on configuring this).



File Options:

- Single file: This is best used if you have shorter broadcasts and have plenty of disk storage space. When the user chooses the "Single file" option, what you're really choosing is the maxed-out 12-hour file duration.
- New File every X time-period: This will ensure you don't have files that are so big you run out of disk space. If you have a long broadcast or have limited space, you may want to limit your file sizes with this option.

Error Reporting

Lots of things can go wrong when configuring and executing an ISO recording. This is compounded by the fact that ISO Recording is designed to perform multiple recordings simultaneously.

When starting ISO recordings, Wirecast will now send any number of specific error messages to the user-log and present you with a very generic modal dialog that reads: "Avrecording failed to start." "View the user log for details and edit the Replay+ISO configuration to resolve issues." The dialog contains an Edit button which opens the ISO configuration dialog.

Also be aware that many ISO recording errors occur after you start recording and some occur soon after. These asynchronous errors are reported only to the user-log and no modal dialog is shown.

Configuration Errors and Warnings

Wirecast tries to catch a number of configuration errors and potential problems while you are interacting with the ISO configuration dialog.

Warnings are shown in the dialog as warning icons next to the configuration fields. If you hover the mouse over each warning icon, a tooltip will appear detailing the problem. Also, the topmost warning message will appear in red text at the bottom of the dialog until all warnings are cleared for the selected configuration.

Each ISO configuration listed on the right-hand side of the ISO configuration dialog will have a warning icon if it has a problem. Below is a list of the configuration problems we currently detect.

- No source/shot is selected for recording.
- The recording uses a source/shot that no longer exists.
- The recording uses the same source/shot as another recording.
- No media tracks are enabled for recording.
- The source does not produce media that matches the enabled tracks.
- The selected output file is the same as another recording.
- The file name contains restricted characters.
- The selected output folder does not exist.
- The space available on the selected drive is insufficient for recording.
- The file duration must be between 10 seconds and 12 hours.