

ISO Best Practices Guide

Introduction

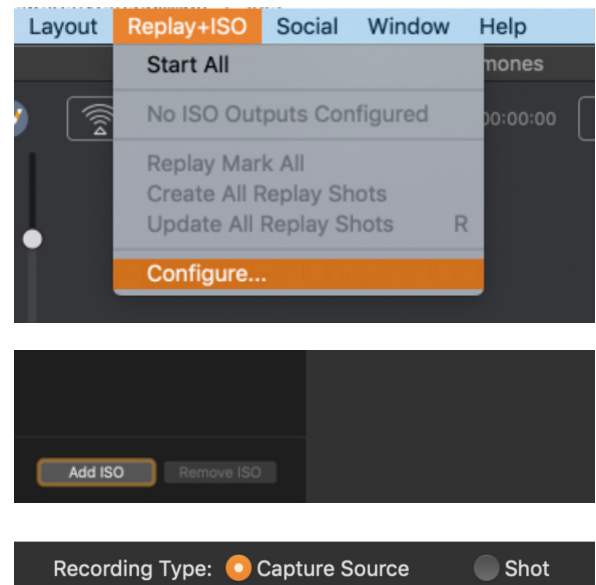
ISO (or Isolated Output) is a Wirecast Pro feature that allows you to create clean recordings of your system devices (cameras, capture cards, or mics) even when they are not being displayed in the *Live* canvas window. This is often helpful when you want to edit together a video-on-demand version of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

There are two ways to ISO record :

1. The **Capture Source ISO** capability allows you to choose one source (such as your webcam, or a microphone). This is truly an isolated source recording, so it doesn't enable you to combine a separate audio and video raw sources into one ISO recording. However if your source includes audio, you can capture that as part of your Capture Source ISO.
2. The **Shot ISO** capability lets you record any "shot" that is on your Main Shot Display. This lets you mix two or more sources into a single shot and record that. It also lets you ISO record sources that are not available in the Capture Source ISO option such as WebRTC sources (Rendezvous and Wirecast Go), NDI, Webstream, or Elgato capture sources.

Configuring Your ISO Recordings

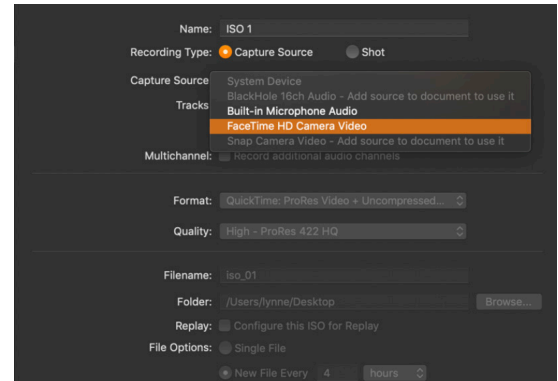
- Select "Configure" from the Replay+ISO main navigation.
- Click on "Add ISO".
- You have two choices for Recording type: Capture Source ISO or Shot ISO.



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).

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. To record these, you should use Shot ISO.



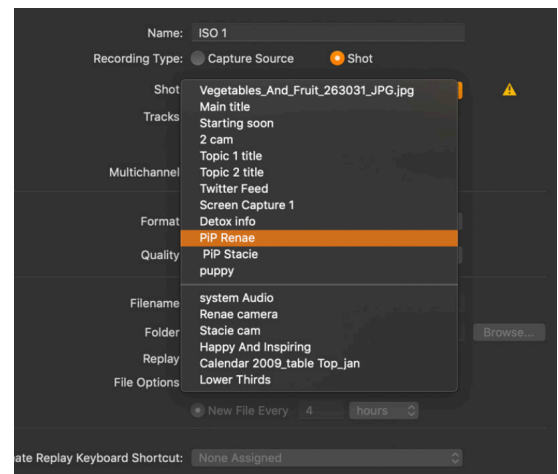
- If your chosen source produces both video and audio, you will have the option to include which media tracks are included from your single source.
- If you want to record audio that is coming from a separate source (like from a separate microphone), you can either set up another Capture Source ISO for 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.

Note: Documents created prior to Wirecast version 14.1 that had ISO configured that included video and audio from two different sources will be split into two separate source recordings (one for Audio, one for Video).

Shot ISO

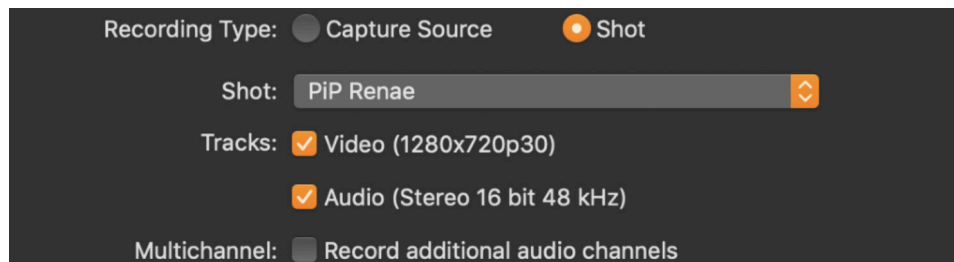
Shot ISO lets you ISO record any shot on the Main Shot Display. The advantage of this, is you can combine any audio and video sources into a shot. You can also record shots that contain sources that aren't available in Capture Source ISO, like Rendezvous guests, and IP camera sources.

- If your chosen shot has both video and audio, you will have the option to include which media tracks are included from the shot.



- Shot ISO recordings will produce video at the canvas resolution and frame rate. (This can be adjusted in Preferences>Canvas) 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 Wirecast versions prior to 14.1, it was not possible make audio-only ISO recordings. Now Wirecast allows this both as a Capture Source (if your source is audio) or as a Shot ISO (if your shot only includes audio).

The ISO configuration dialog displays the selected source's current video resolution and frame rate 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).



Format and Quality:

Wirecast offers the ability to encode your files using ProRes or x264 on both Mac and Windows.

Format

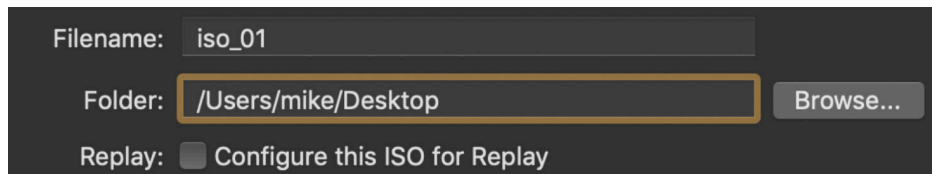
- QuickTime: ProRes Video + Uncompressed Audio:
 - ProRes is better suited for NLE work. Also, color space information is less ambiguous.
- QuickTime: x264 Video + Uncompressed Audio:
 - x264 is a compressed video file that results in significantly smaller file sizes.
 - x264 recordings are still placed 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

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.



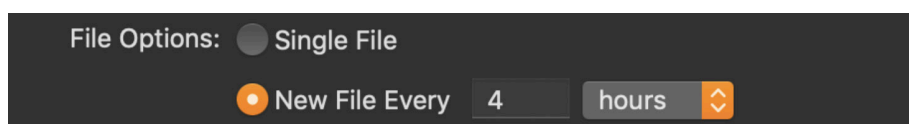
A screenshot of a software interface for configuring an ISO recording. It features three rows of controls on a dark background. The first row is labeled 'Filename:' and has a text input field containing 'iso_01'. The second row is labeled 'Folder:' and has a text input field containing '/Users/mike/Desktop' with a 'Browse...' button to its right. The third row is labeled 'Replay:' and has a checkbox that is currently unchecked, followed by the text 'Configure this ISO for Replay'.

Folder

Wirecast will remember the last folder you assigned to an ISO recording configuration and use 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).



A screenshot of a software interface for configuring file options. It features two rows of controls on a dark background. The first row is labeled 'File Options:' and has two radio buttons: 'Single File' (which is selected) and 'New File Every'. The second row is labeled 'New File Every' and has a numeric input field containing '4', a unit dropdown menu showing 'hours', and a small orange square icon with a white double-headed arrow.

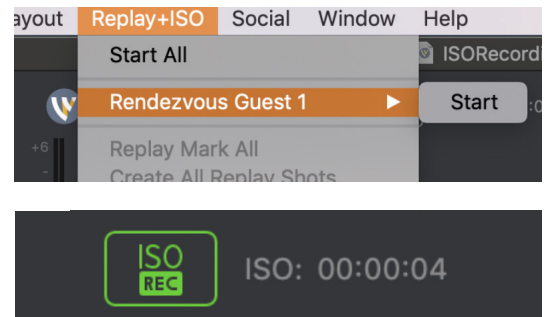
File Options

- 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. This will break the recordings up and start a new file at the increment you specify.

Starting your ISO Recording

When you finish configuring your ISO recordings, you’re ready to start recording. There are a couple of ways to start your ISO recordings.

1. Go to “Replay+ISO” in the main navigation bar. There you have the choice to “Start All” or choose to start only a specific ISO that you have set up.
2. Alternatively, you can click the ISOREC button at the top of the User Interface, which will start all your configured ISO recordings.



Error Reporting

When starting ISO recordings, Wirecast will 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 in the 'Notifications' window (accessed from the Window menu item in the main navigation window) 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.



A Note about Resources

Keep in mind that this feature is very resource intensive. Because you are recording individual cameras or shots alongside your actual production you will need a rather powerful system.

We recommend that at minimum you have:

- an i7 processor
- a high-end dedicated graphics card
- and an SSD for recording

Something similar to our [Wirecast Gear 420 system](#) would do.



You are recording a lot of data at the same time as running a production, so there's a lot of processing going on that your system will need to manage. And this can also be impacted by other features you're using that rely heavily on your computer's GPU - such as Multi-viewer, or if you have your live icons on.

We recommend that you practice using the ISO recording in a full rehearsal, so you can gauge how your system handles the loads.

