Wirecast
User Guide

Wirecast 6.0 User Guide for Mac

telestream

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Preface

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MPEG-2 License Requirements

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- Sales: sales@telestream.net

- Support: desktopsupport@telestream.net

Website Links:

- How to Buy: http://www.telestream.net/purchase/store.htm

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Introduction

Introduction

This guide is intended to help you understand how each feature of Wirecast operates and to provide you with information to help you make the best presentations possible.

Topics

- *Editions and Options*
- *Wirecast Workflow*
- *Tutorials*
- *Two Ways to Use this Application*
- *Using AutoLive*
- *Main Window Layout*
- *Scripting APIs*

Editions and Options

Wirecast is available in multiple editions. The editions of Wirecast, each with its own set of features, are presented in this guide. The term "Wirecast" is used, generally, to describe all major features.

Editions

Wirecast is available in two editions: *Studio* and *Pro*.

Wirecast *Studio* allows an unlimited number of cameras and inputs, titling overlays, chroma keys, multiple layers, shot editing, and the ability to preview shots prior to broadcast. But, *Studio* does not provide HD video capability. This is only available in Wirecast *Pro*.

Features that pertain specifically to Wirecast *Studio* are indicated by the *Studio* icon (shown below):

STUDIO

Wirecast *Pro* is the professional edition of Wirecast and includes all the features of Wirecast *Studio*. It adds an audio inspector, advanced audio controls, virtual sets, scoreboards, and many other professional features. Wirecast *Pro* also provides full HD video capability. Features that pertain specifically to Wirecast *Pro* are indicated by the *Pro* icon (shown below):

PRO

Options

STUDIO

Wirecast *Studio* provides support for multiple cameras and inputs, selected Blackmagic, Osprey by Variosystems, and Matrox Multi capture cards and LiveU video-over-cellular backpack. Users can broadcast their computer desktop (including computer audio) using Desktop Presenter. Other key features include chroma key support, 3D graphics, titles, transitions and up to 35 layers of live compositing. Additionally, you can use HDV when you purchase an HDV option license. Without the license you can still experiment with HDV input, but all HDV output is water-marked.

PRO

Wirecast *Pro* provides Virtual Sets (a library of professionally designed 3D sets), a powerful Audio Inspector with synch delay, Web stream support, integration with Teradek Cube. Wirecast Pro also provides live scoreboards and includes the HDV option license which adds support for HDV codec encoding.

Note: If you do not have a Wirecast *Pro* or *Studio* license, Wirecast still enables you to experiment with *Pro* or *Studio* features, but all Wirecast *Pro* and *Studio* output is water-marked. Additionally, you can not save a document that has *Pro* or *Studio* features enabled.

Wirecast Workflow

Wirecast is a powerful cross-platform live video switching, production, and encoding software. Because of its versatility in handling a variety of inputs and outputs, it typically fits in the middle of your broadcasting workflow. Wirecast can take the place of more traditional *T-bar* hardware switchers, graphics and title generators, or simply act as the back-end encoder for large switching systems.

Below is a diagram of the basic Wirecast workflow. In general, you will capture your live input devices (such as live camera feeds, iOS cameras, computer desktop, web feeds and more), produce your show using the full range of Wirecast production features (chroma key, graphics, titles, scoreboards, etc.), and then stream it live to web, LAN, or record locally.

Plug in your cameras → Capture your content → Produce your show → Stream it live

Audio/Video Sources

Devices:
- Cameras: USB, Thunderbolt, SD/HD SDI, HDMI
- iOS
- Microphones: USB, XLR, unbalanced
- Audio mixers

Web/IP:
- RTMP
- Web streams
- Screen capture
- IP cameras

Hardware

Computers:
- Mac
- Windows
- 64-bit

Capture cards:
- PCIe
- Thunderbolt
- USB 3.0
- Blackmagic, Matrox and more...

Software: Wirecast

Live production:
- Live switching
- Transitions
- Lower thirds
- Chroma key
- Picture-In-Picture
- Mix Audio
- Live scoreboards
- Audio delay
- Replay
- Create playlists
- Twitter integrations
- Animated 3D titles with NewBlue Titler Pro Live option and more...

Encoding:
- x264, H.264, ProRes, Flash, WMV, ProRes, MJPEG

Destinations

Deliver to:
- Streaming services
- Streaming servers
- CDNs
- Record to disc
- Virtual camera out
- External monitor
- Progam feed out and more...

Wirecast works with cameras, capture cards, audio devices. It prepares media and then outputs it either by streaming to the Internet, CDNs, multicast/unicasts via LAN, locally via virtual output or second display.

———— Go button

Capture your content

📷 Devices
- Cameras: USB, Thunderbolt, SD/HD SDI, HDMI
- NEW! iOS devices with Wirecast Cam
- Microphones: USB, XLR, Unbalanced
- Audio mixers
- See full list

Capture Cards
- PCIe
- Thunderbolt
- USB 3.0
- Blackmagic Design, Matrox, Epip and many more

🌐 Web/IP
- Screen capture with Desktop Presenter (locakl or remote)
- RTMP (PRO)
- Web streams (PRO)
- IP cameras (PRO)
- See full list

Other Inputs
- NEW! NewBlue Titler Pro Live for
- Teradek Cube – 100 &150 (HD-SD 200 & 250 (HDMI) (PRO)
- Teradek Bond, Teradek Sputnik Server (PRO)
- Sportzcast LiveScore Service (PR
- LiveU portable 3G/4G backpack

Tutorials

It is suggested that you first work through the tutorials in the *Tutorials* section. They are quick, informative, and the easiest way to become familiar with Wirecast.

Wirecast also provides a built-in tutorial environment that corresponds with the tutorials provided in *Tutorials*. The tutorials take about thirty minutes and provide a brief overview of how to set up a basic presentation and create your own broadcast.

It is also suggested that you read *Making Great Broadcasts*. This topic shows you how you can easily make changes in your setup and improves the quality of your presentations.

Two Ways to Use this Application

There are two different ways you can use Wirecast:

- **Presenter Is Operator** The person conducting the presentation also operates Wirecast.

- **Presenter Plus Operator** The presenter concentrates on the content and someone else operates Wirecast. In this mode, the presenter never needs to know in detail how Wirecast works.

Presenter Is Operator

In this mode of operation, the person conducting the presentation simultaneously operates Wirecast.

Here are some suggestions for using Wirecast when you are both the presenter and operator:

- **Keep it simple** Set up Wirecast to make it easy for you to be the operator and the presenter. Set up your logo and titles so that you need to make very few changes during your presentation. Use a minimum number of shots so it's easy for you to see which shot to choose.

- **Keep the AutoLive feature on** This enables you to present your shots with just one click. Though this limits your ability to perform complex presentations, it is the best way when the presenter is also the operator. To turn AutoLive on or off, select it under the Switch menu.

- **Pre-configure your shots** Make sure that all the shots are created prior to your presentation. Do not try to create or modify shots while broadcasting them.

- **Use hot-keys for switching shots** If your shot has a number in its name, you can press the Option key plus that number's key to immediately display the shot. For example, if you have a shot named "Me With Title 1", press the Option key and the 1 key to display this shot. Make sure you rename a shot and add a number to take advantage of using hot keys.

Presenter Plus Operator

STUDIO

In this mode of operation, an engineer (or operator) is responsible for using Wirecast, and the presenter concentrates on the content of the presentation.

Here are some suggestions for using Wirecast when you have both an operator and a presenter:

- **Keep the AutoLive feature off** This enables you to make several changes at one time before taking the changes live. However, to quickly make a shot live, press the Command+Ctrl keys and click the shot.

- **Open the Preview window** The operator should use Preview mode to examine everything before it becomes live.

- **Use the Layer Windows to make more shots available** Select New Layer Window from the Window menu to open additional layer windows so you can quickly flip between shots on several layers.

- **Use the Inspector window to open and edit shots** The Inspector window acts exactly like the edit window but always edits the last shot you changed. To open the Inspector Window, click on the Window menu and select Inspector.

Using AutoLive

Some users of Wirecast may want to single-click a shot to make it become live. Other users may want to make several changes to the broadcast before making them live. You can use both methods in Wirecast.

The AutoLive feature is designed to offer a single-click operation for those users who want to simply click from shot to shot. The Edit window (or other windows) is not affected by the status of AutoLive.

When AutoLive is on, clicking a shot in the Main Window makes it become live. As a result, the Go button becomes inactive. Command+Ctrl+Click loads a shot into the preview but does not make it live.

 Go button

When AutoLive is off, you click on a shot in the Main Window to display it in Preview, then the Go button is required to make the shot live. Command+Ctrl+Click takes a shot live immediately.

Sometimes you may want to temporarily turn on and off (toggle) the AutoLive state. Hold down the Command and control keys at the same time to temporarily turn on Autolive. This enables you to quickly switch AutoLive on for one action (i.e. a mouse-click), then off again.

Main Window Layout

Wirecast enables you to select which functions are displayed in the Main window. These functions are added or removed from the main window using the Layout menu.
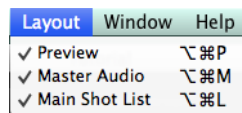
There are three layout options: Preview, Master Audio, and Main Shot List. Each option represents a pane in the Main window and is turned on or off by selecting it. A check mark indicates that the option is turned on.

Preview

Master Audio

Main Shot List
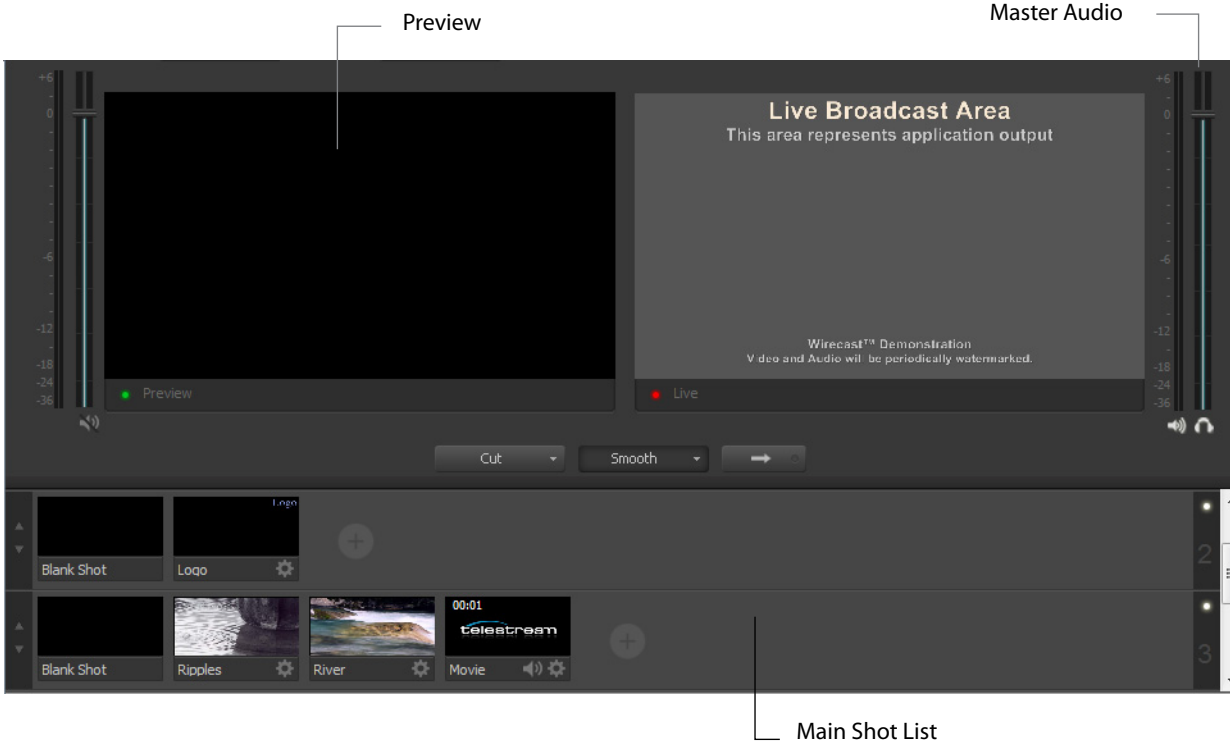
Preview

STUDIO

Preview displays what the broadcast will look like when you click the Go button. (The Go button is only active when AutoLive is off.) To display the Preview window, click select *Layout >Preview*.

Preview window   Live Broadcast Area

Go button
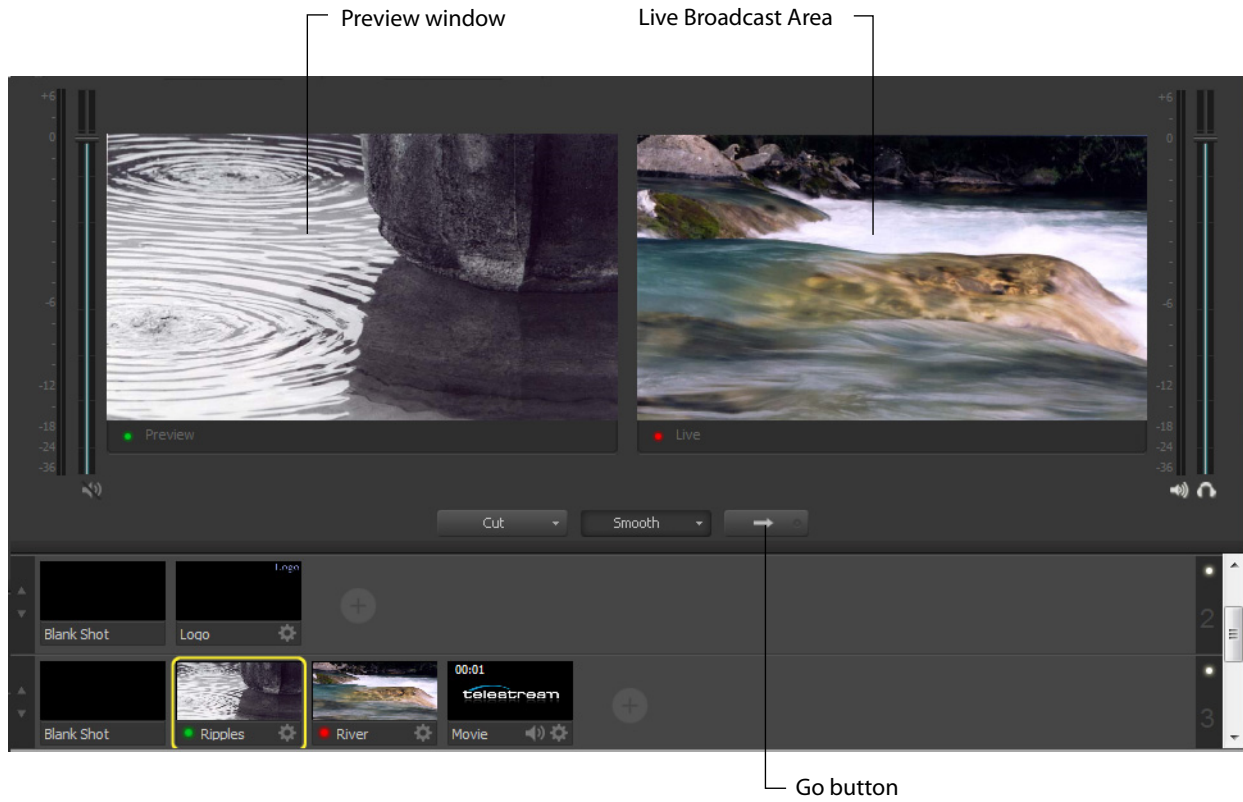
Master Audio

The Master Audio panel enables you to control the output volume level, mute audio output, and mute the line-out feed for Preview and Live displays. To display Master Audio for Preview and Live displays, click *Layout > Master Audio*. Click again to hide the Master audio controls.

Preview Decibel scale

Preview Master Volume

Preview Line-Out Mute button

Live Decibel scale

Live Master Volume

Live Line-Out Mute button

Live Master Mute button
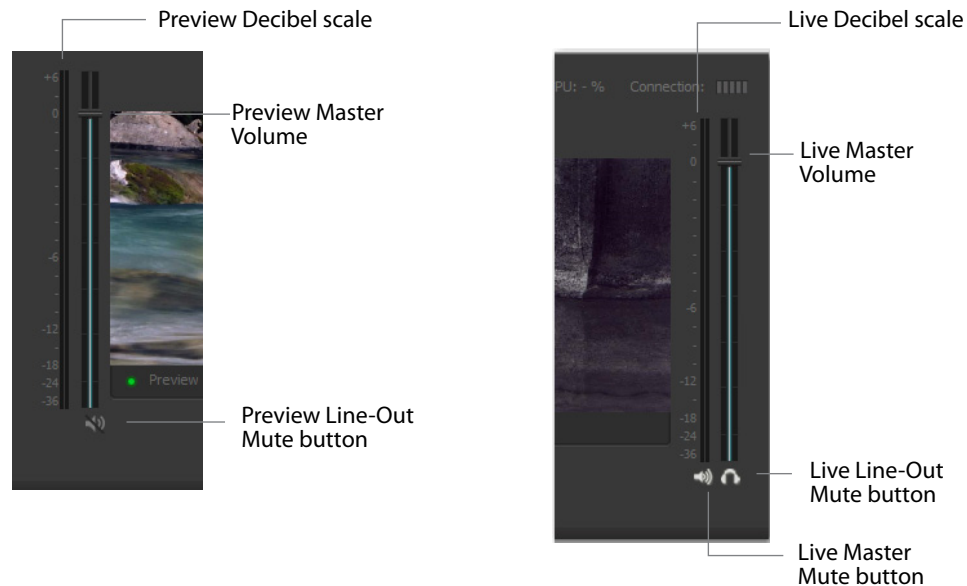
The Preview and Live Master Volume control enables you to adjust the master audio volume for Preview and Live separately. Click and drag the slider control up or down to set the volume. The decibel scale next to the slider indicates the audio level. When you take a Preview shot live, the Live audio controls are set to the levels set in Preview.

The Master Mute button controls the mute of the Live master audio (what your viewers hear). Even when you mute the output, the encoder still generates audio but it is silent. If you do not want to broadcast audio, modify the Encoder Presets to not process audio through the encoder.

The Preview and Live Line-Out Mute buttons control what you hear locally. When line-out is muted, audio is not sent to your headphones or speakers, but your viewers still hear it. The two controls are mutually exclusive -- you cannot have both on at the same time, but you can mute both.

Main Shot List

Normally, the Main Window displays the Shot List at the bottom of the window. However, you can hide the Shot List display by unchecking *Main Shot List* in the Layout Menu. This is useful if you want to open up multiple Shot List Layer windows.
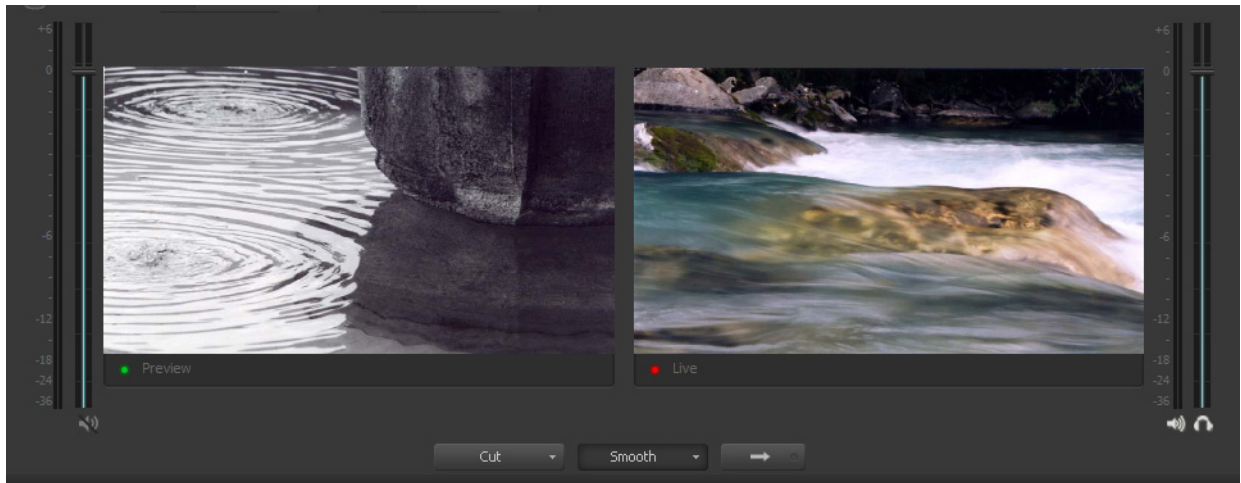
(Shot List is not displayed at bottom of window)

Control/Status Bar

Control buttons and status information are displayed at the top of the Main window.

Wirecast displays the following controls and statistics:

- **Stream button** Click to begin streaming.
- **Streaming time** This displays how long you have been streaming. This value does not reset when you start/stop the broadcast. It is cumulative. This enables you to save portions of a broadcast to disk and still know the total amount of time.
- **Record Button** Click to begin recording.
- **Recording Time** This displays how long you have been recording. This value does not reset when you start/stop the broadcast. It is cumulative.
- **Gear Icon** This is an Output Settings shortcut. Click to open the Output Settings window. (Same as selecting Output > Output Settings).

- **Frames per Second** Displays the broadcast frame rate (fps).
- **Bitrate** Displays the broadcast bitrate (kilobits per second).
- **CPU usage (percentage)** This displays the current load on your CPU when streaming or recording in percent of usage. The encoder affects the CPU usage more than any other parameter in Wirecast. If this value is high, you should use a different encoder, or modify your encoder settings. If the CPU usage is near 95%, use a lower quality video output to lower the bandwidth.

Note: To avoid decrease in video quality, Wirecast should not be used at CPU usage above 80%. See the Telesteam Website for suggested configurations.

- **Connection** This displays the current connection quality. The bars indicate the amount of buffer memory used. High bar count reflects low buffer use (good connection). Low bar count reflects high buffer use (poor connection and in danger of broadcast errors). When one orange bar is displayed, the buffer is full.

Layers

STUDIO

Wirecast displays five layers in the Main Shot List window. They are numbered 1 through 5 along the right side of the window. Each layer contains shots that can be selected by clicking them. A red LED light indicates that a shot is Live. (If AutoLive is turned on, when a shot is selected it is displayed in the Live window.) If you select multiple shots -- by selecting shots on multiple layers -- they will all be displayed in the Live window. But the shots are displayed in a layering manner, where layer 1 is on top and layer 5 is at the bottom (and layers 2 through 4 are layered in between). In the example below, the Logo in layer 2 is displayed on top of the River shot in layer 3.

Layered shot

Red LED lights

Layer numbering
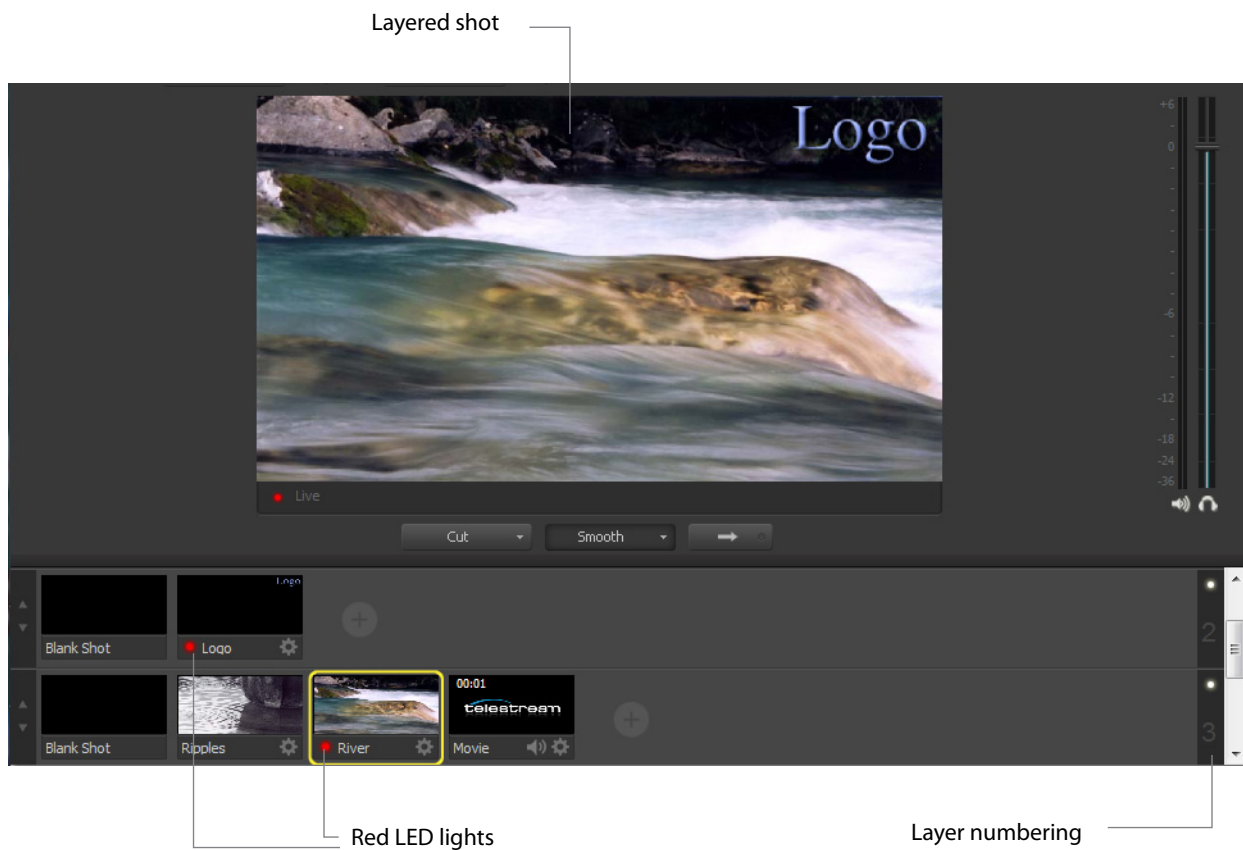
Layer Windows

STUDIO

You can also open the Shot List in a separate window. Select *Window > New Layer Window* to display a list of the layer windows you can open (Master Layer 1 through 5). Select the layer you want to open and a new, separate layer window is displayed.
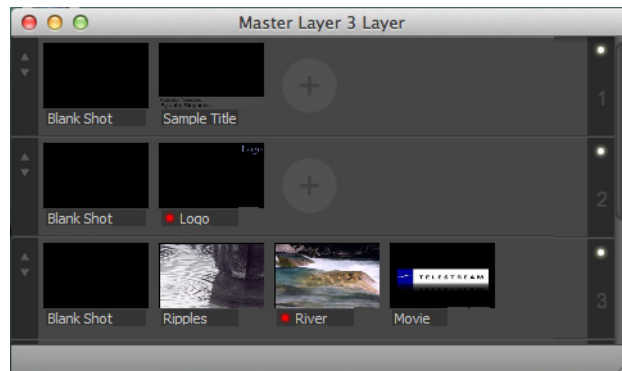
This panel works exactly like the Shot List panel in the Main window, but enables you to open multiple layer panels. You can change which layer is displayed on each panel by selecting the *Window*s menu and selecting a different layer.

Scripting APIs

Wirecast provides scripting which enables you to control and automate the Wirecast environment.

Scripting is all handled via AppleScript. To access the documentation, open up Apple Script Editor (select *Applications -> Utilities -> Apple Script Editor*), then select *File -> Open Dictionary*, and select the */Applications/Wirecast.app* bundle from the list.

Installation

Introduction

This topic guides you through installing (or upgrading) and activating Wirecast.

Topics

- *Installing*
- *Activating*
- *Uninstalling*
- *System Requirements*

Installing

To install Wirecast, follow these steps:

1. Download the installer from the Website at: http://www.telestream.net/wirecast/overview.htm

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Note: During installation, you will be asked if you want to install the Virtual Microphone feature. If you do (recommended), check the displayed check box and continue the installation. Installing Virtual Microphone requires administrative rights.

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2. Run the installer (.dmg) program.

3. Click Agree to the license terms.

4. Open the Wirecast in the downloads folder, then click and drag the icon into the Applications folder. If a version of Wirecast already exists, the installer asks you if you want to replace the previous version.
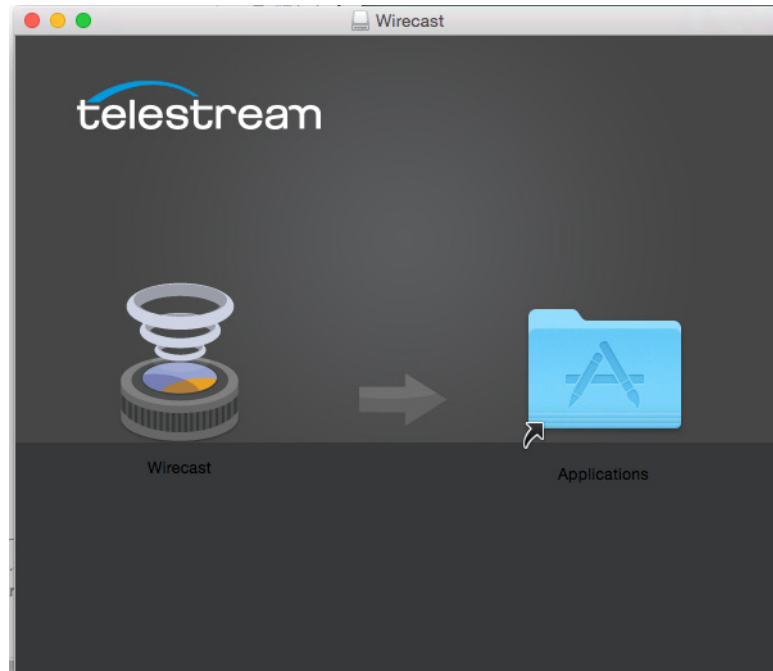
Activating

When you purchased Wirecast a serial number was provided. This serial number must be registered in the Wirecast program to unlock the features of Wirecast. To register Wirecast follow these steps:

1. Run the Wirecast program.

2. Select *Preferences* from the Wirecast menu, select *Licenses*, then click *Purchase License*.

Select License

Click Purchase License
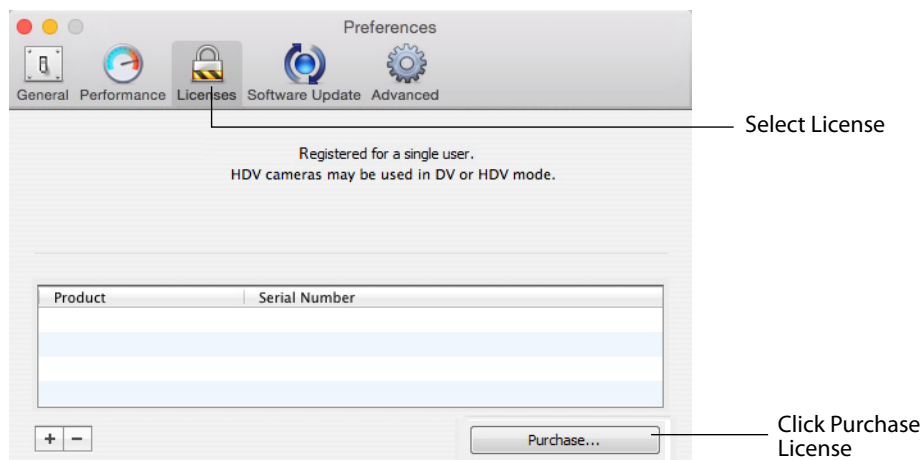
3. Enter your serial number. (If you do not have a license, click *Purchase* to purchase a license on-line.)

Enter Serial Number
Enter a serial number or press the 'Purchase...' button
to access the Telestream, Inc. online store.

BCX43801-T2Q8-A4AS-RQ37-Y9AX-6YR9 ——————— Enter your serial number

[Purchase...]   [Cancel]   [**OK**] ———— Click OK
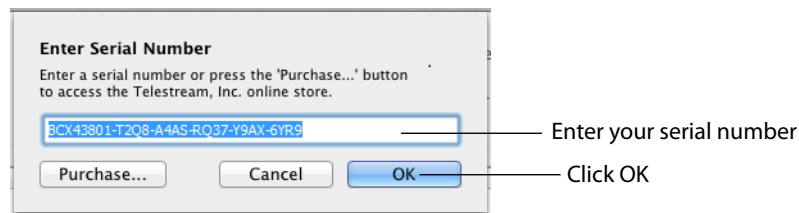
4. When the unlocked message displays, click OK.

5. Close the Preferences window.

Your Wirecast program should now be fully activated.

Uninstalling

1. To uninstall Wirecast, place the Wirecast program in the Trash folder.

System Requirements

Wirecast

- Operating Systems: OS X 10.9 Mavericks, 10.10 Yosemite and 10.11 El Capitan (Wirecast 6 does not support OS X 10.8 or previous versions)
- Mac computer with Intel Core 2 Duo processor
- Core i5 or later recommended for 720p streaming
- Core i7 recommended for 1080p streaming
- 2GB RAM minimum
- 4GB recommended for 1080p streaming
- 300MB free hard disk space for installation
- Hard disk space for recording to disk
- Compatible Flash streaming server, or account with a supported Flash streaming portal required for Flash H.264 streaming
- 512 MB PCI-Express graphics card with 3D acceleration
- GeForce or Radeon class card recommended
- Sufficient upload speed for streaming
- Minimum recommended is twice the bandwidth of the total bit rate of the stream

Desktop Presenter

- Use the remote version of Desktop Presenter 2.0.6 with Wirecast 6.0; it's available as a separate download at: http://www.telestream.net/purchase/store.htm.

Tutorials

Introduction

The best way to get started using Wirecast is to quickly work through all its main features. This tour presents a series of three tutorials, each designed to help you understand how to create and broadcast presentations using Wirecast.

As you work through these tutorials, you will also become familiar with important Wirecast concepts and how you can use them to deliver high quality broadcasts. The more you know about Wirecast, the better it will serve your broadcasting objectives.

Because each tutorial builds on the skills and knowledge you learn in the previous tutorials, it is recommended that you take the tutorials in succession. Working through all the tutorials takes about thirty minutes.

As you gain hands-on experience creating video and audio presentations - which leads to a working knowledge of Wirecast and its components and architecture - you will gain proficiency in using Wirecast.

Tutorials

- *Tutorial 1: Basic Concepts*
- *Tutorial 2: Editing Shots*
- *Tutorial 3: Broadcasting*

Note: You can run all of the tutorials without a license. However, a watermark on the video and an occasional voice-over on the audio are present until a valid license is activated.

Note: For licensing information, select Preferences from the Wirecast menu, select *License*, then click *Purchase License*. Or, you can contact sales@telestream.net.

Tutorial 1: Basic Concepts

The goal of this tutorial is to provide you with a quick but successful experience creating and broadcasting a presentation using Wirecast.

This tutorial requires that you open the tutorial document in Wirecast. To do this, select *Create Document for Tutorial* from the Help menu in Wirecast.
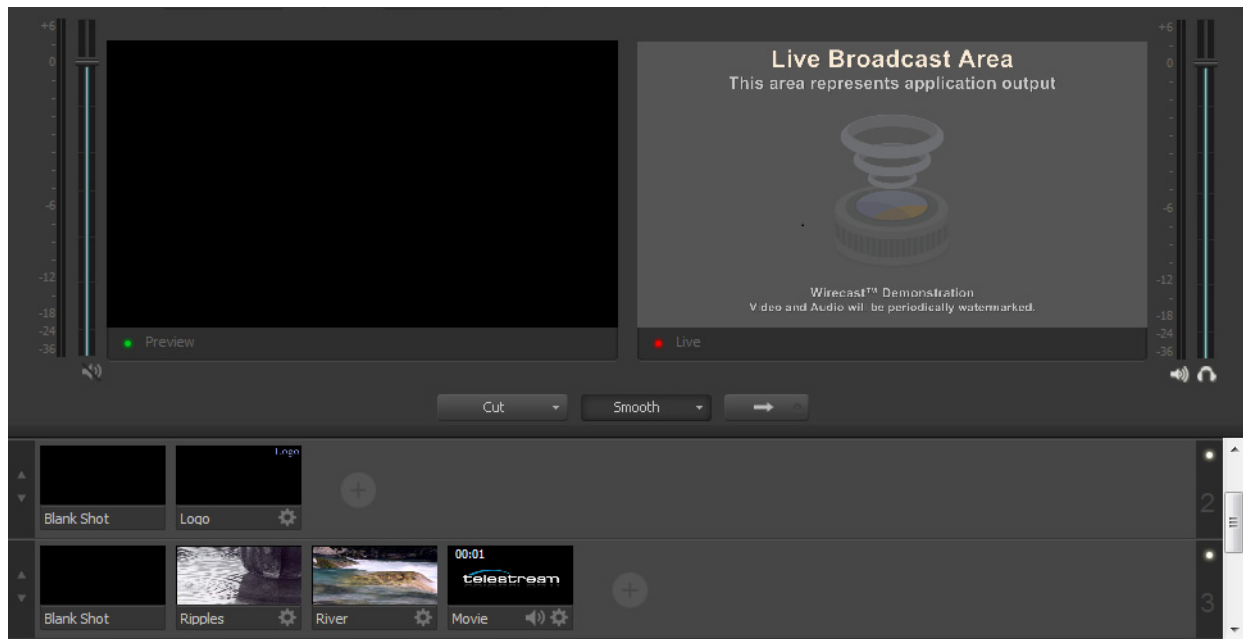
Note: If you are running the tutorial with Wirecast in demonstration mode, the Wirecast logo appears from time to time and audio output has a periodic voice-over.

Tutorial Prep

To prepare for this tutorial you need to make two changes.

First, select *Switch >Auto Live* to turn on the Auto Live option. But also select Layout > Preview to turn off the Preview option. Both of these options will be changed back later in the tutorial.

The Wirecast Main Window shows the AutoLive LED as turned on.
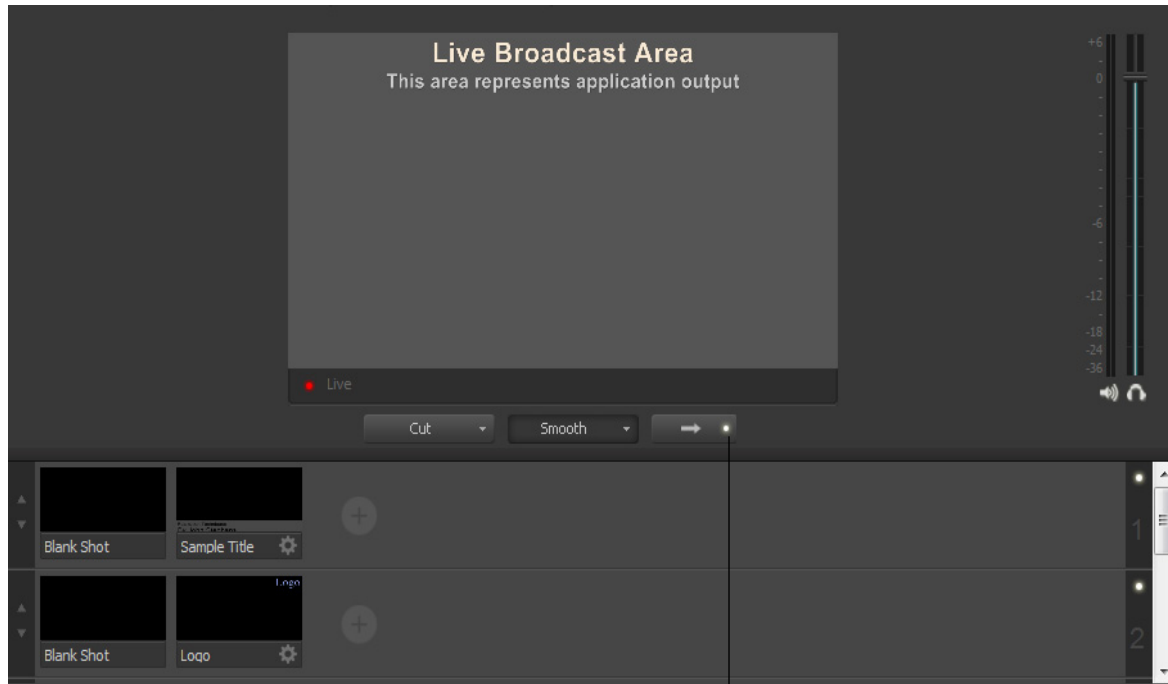
AutoLive LED on

The Main Window

Wirecast has two main display areas: Live Broadcast and Shot List. The Live Broadcast area is in the upper portion of the window displaying what Wirecast broadcasts to your viewers (or what it records to disk). The Shot List, in the lower half of the window, displays the shots available for broadcast.

Live Broadcast Area

Shot List
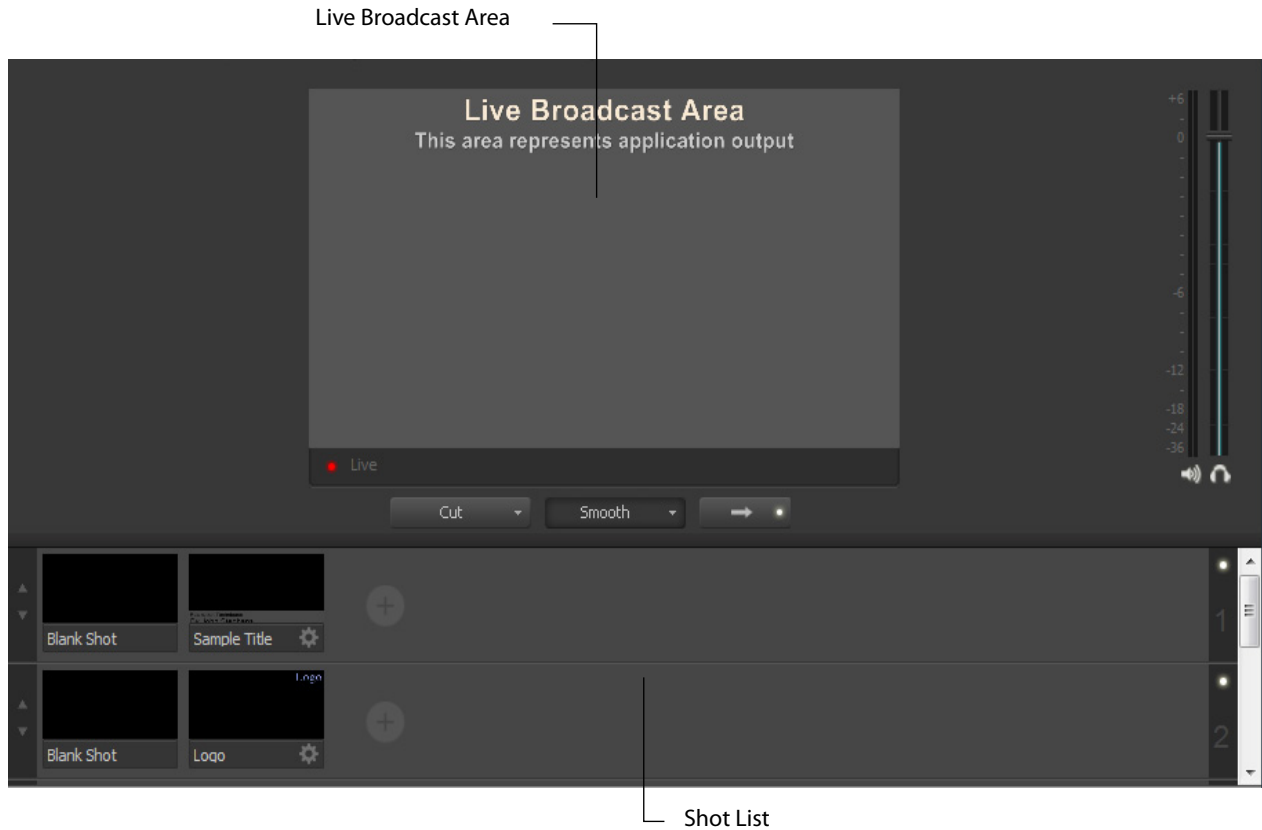
What Is a Shot?

Wirecast uses the concept of a shot to construct presentations. A shot contains media, along with the settings for that media. In its simplest form, a shot contains one piece of media such as a photo or a video clip. But it can also be something more complex, like a live camera with a title, and background music, or even a Playlist of shots.

A shot can be edited and its settings can be changed (See *Tutorial 2: Editing Shots*). Shots are important because they enable you to configure a lot of information before you broadcast your presentation. This enables you to concentrate on creating a good production during your broadcast.

Switching Between Shots

Individual shots are displayed in the Shot List. Click the Ripples shot in the Shot List area and the image fades into the Live Broadcast Area display. This is called "taking a shot live".

Shot in Live Broadcast Area
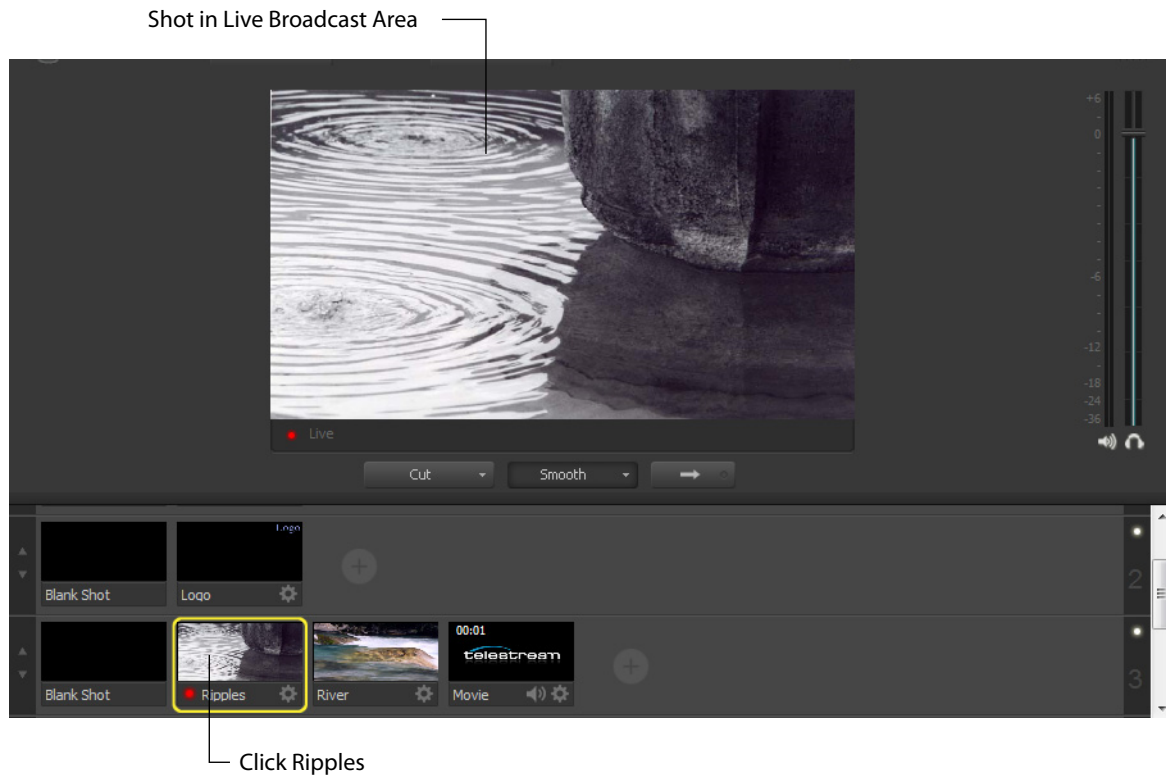
Click Ripples

Click the shot labeled Blank Shot and the Ripples image fades to a blank screen. The Blank Shot enables you to display nothing, which is sometimes useful.

Blank Shot in Live Broadcast Area
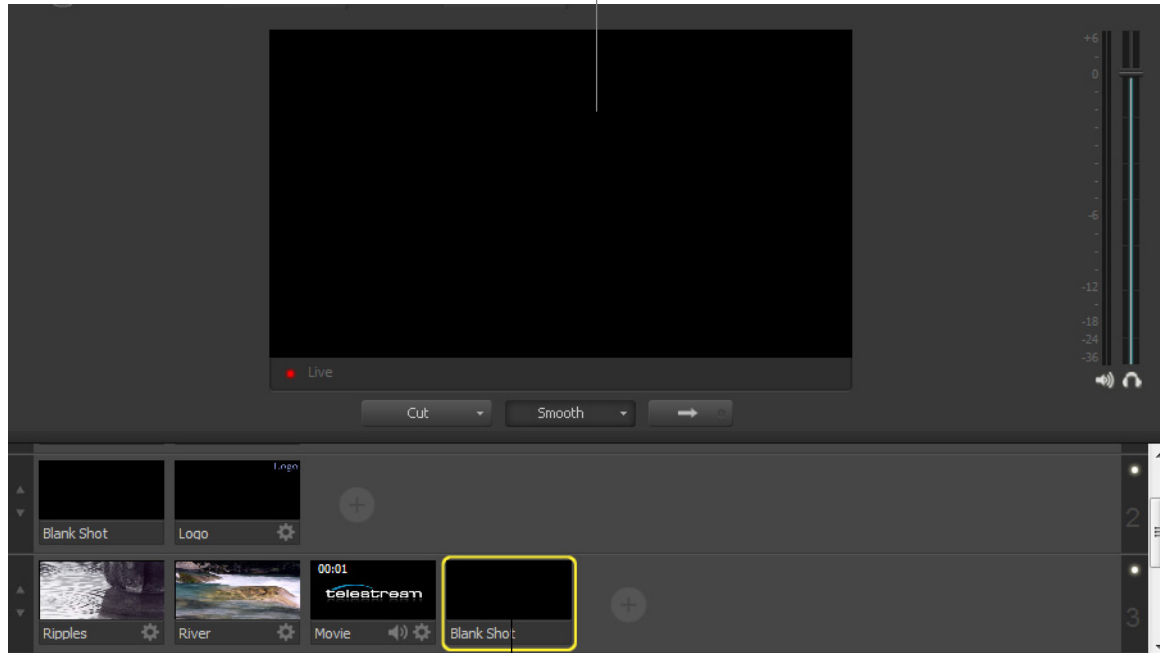
Click Blank Shot

Transitions

In the previous examples, a fade occurred when you clicked on a shot. This is because a smooth transition is the default.

Transition controls are located just below the Live Broadcast Area where two kinds of transitions are shown: Cut and Smooth.
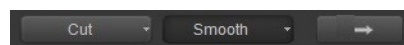
When Cut is selected, transitions are immediate. When Smooth is selected, transitions fade in (as demonstrated above).

There are more than just two kinds of transitions to choose from, but only two can be assigned to the Transition Panel. To select a different transition type, click the small arrow on the right side of either transition button. When the list appears, select a new

transition to assign to the button. You can also click the transition button and drag the mouse downward until the menu of selections is displayed.

Click arrow to open menu

Select a transition type
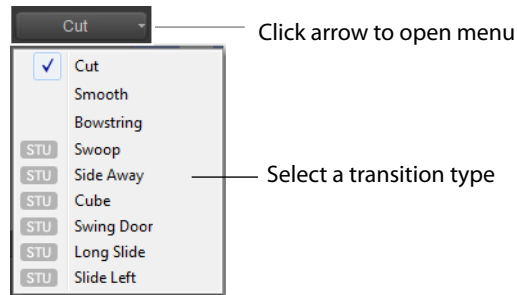
For example, to change the first transition button from Cut to Swoop, click the Cut button and dragging downward until the menu appears. select *Swoop* from the menu. Swoop should now be selected for the first button.
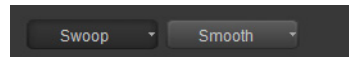
Now click back and forth between River and Ripples using Swoop.

These two transition buttons can also be selected by using the following key combinations: Command+1 and Command+2.

Transition Speed

You can also control how fast a transition occurs, by selecting the *Switch >Transition Speed*. Your choices range from *Slowest* to *Fastest*.
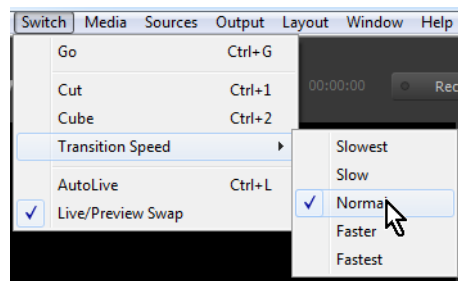
Go Button

The Go Button (or Command+G) enables you to make a transition.

Go button

Clicking the Go button does nothing when Wirecast is in AutoLive mode. The only exception is that it will update a live shot if you have made changes to it using the Shot Editor. Later in this tutorial you will discover how to use the Go button to transition between different shots when AutoLive is off.

Layers

> **Note:** Before you start this section, please select Smooth as your transition.

STUDIO

Wirecast enables you display several shots in the Preview and Live windows at the same time by rendering them one on top of another according to Wirecast's Layer system. This is an excellent way to add and remove objects in your broadcast.

Wirecast displays five layers in the Main Shot List window. They are numbered 1 through 5 along the right side of the window. Each layer contains shots that can be selected by clicking it. A red LED light indicates that a shot is selected. When a shot is selected it is displayed in the Live Broadcast window. If you select multiple shots (by selecting a shot on more than one layer) they will all be displayed in the Live Broadcast window. The shots are displayed in a layering manner, where layer 1 is on top and layer 5 is at the bottom (and layers 2 through 4 are layered in between).

Select the Logo shot in layer 2 and the River shot in layer 3. The result is a layered shot containing both images.

Layered shot

Select Logo shot

Select River shot

Layer numbers

Layers are displayed in a particular order: Layer 1 is on top, Layer 2 below it, Layer 3 below Layer 2, etc. This tutorial, so far, has been operating on Layer 3. Blank, Ripples, River shots and Movie shot are on Layer 3 (as seen previously in this tutorial), but Layer 2 has only a logo and a blank shot.

Master Layer 3
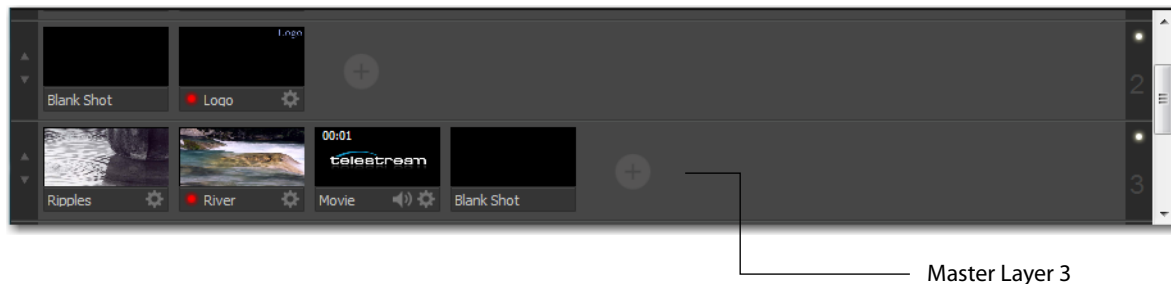
Each layer can be turned on or off by clicking the white LED light on the far right side of the layer window. Click the Layer 2 LED to remove the Logo shot.

Logo removed

Click to turn Layer 2 off
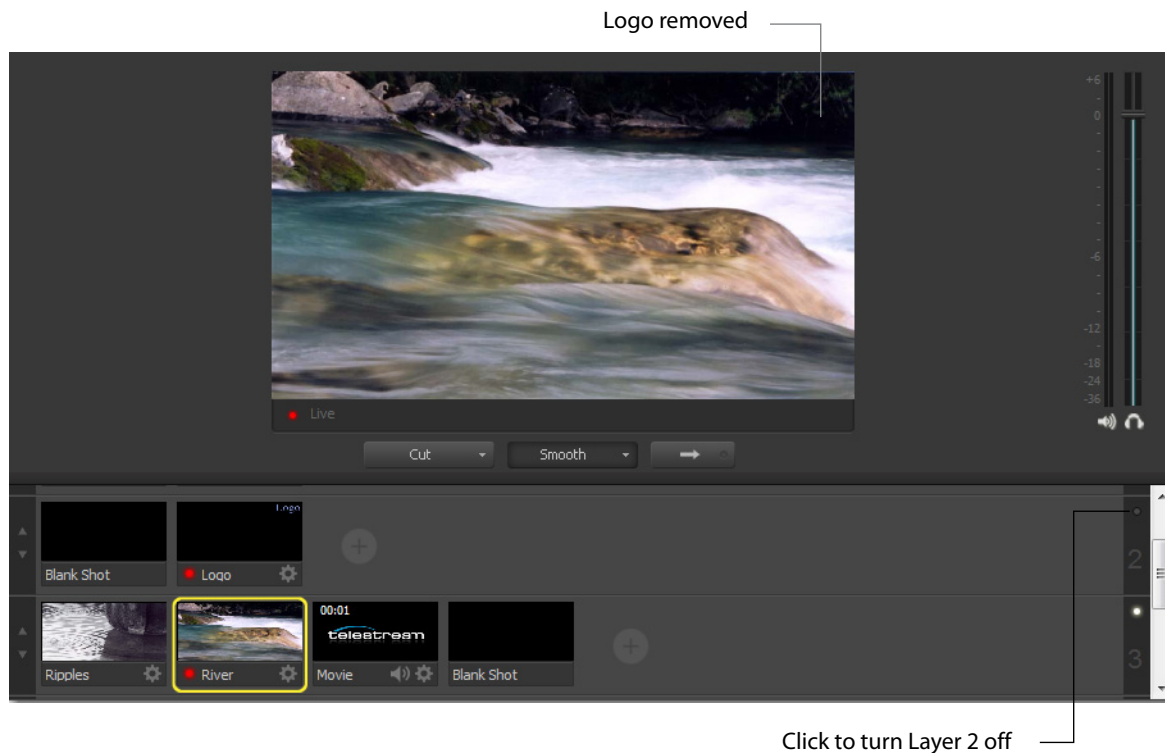
Click the LED again to turn Layer 2 back on.

Auto Live

So far in this Tutorial, Wirecast has been running in AutoLive mode. What this means is that any change you make in the Shot List is automatically made live in your Broadcast. This mode is very useful for those users who want to set up all of their shots at once and then single-click them as they run their presentation. But the disadvantage of this

single-click method is that you can only see one shot change at a time. Once you click a shot, your viewers also see it (with no preview of how it looks on your part).

Turn AutoLive Off

An LED light, next to the Go button is lit when you are in AutoLive mode.
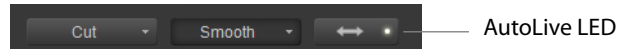
AutoLive LED

Make sure AutoLive is off by unchecking *AutoLive* in the Switch menu. A dialog box is shown informing you that AutoLive is off and transitions must be made using the Go button. Click OK in the dialog box to continue.

Try clicking the Ripples and River shots. Nothing happens because AutoLive is off. Now click the Ripples shot and click the Go Button. The Ripples shot is taken live in the Live Broadcast window. Click the River shot and, as expected, nothing happens. Click the Go button again and the River shot becomes Live.

Note: When AutoLive is off, you must always click the Go button (or press the Command+G keys) to display the selected shot in the Live Broadcast Area.

Multiple Changes

The benefit of having AutoLive off is that you can make several changes first and then have them occur all at the same time. To do this, first verify that AutoLive is off. Click *Sample Title* in layer 1, click *Blank Shot* in Layer 2, and click the *Ripples* Shot in Layer 3. Click the Go button (or Command+G) to make the *Ripples* and *Sample Title* shots live at the same time.

Select Ripples — Select Sample Title — Click Go button — Layered shots

Select Blank Shot
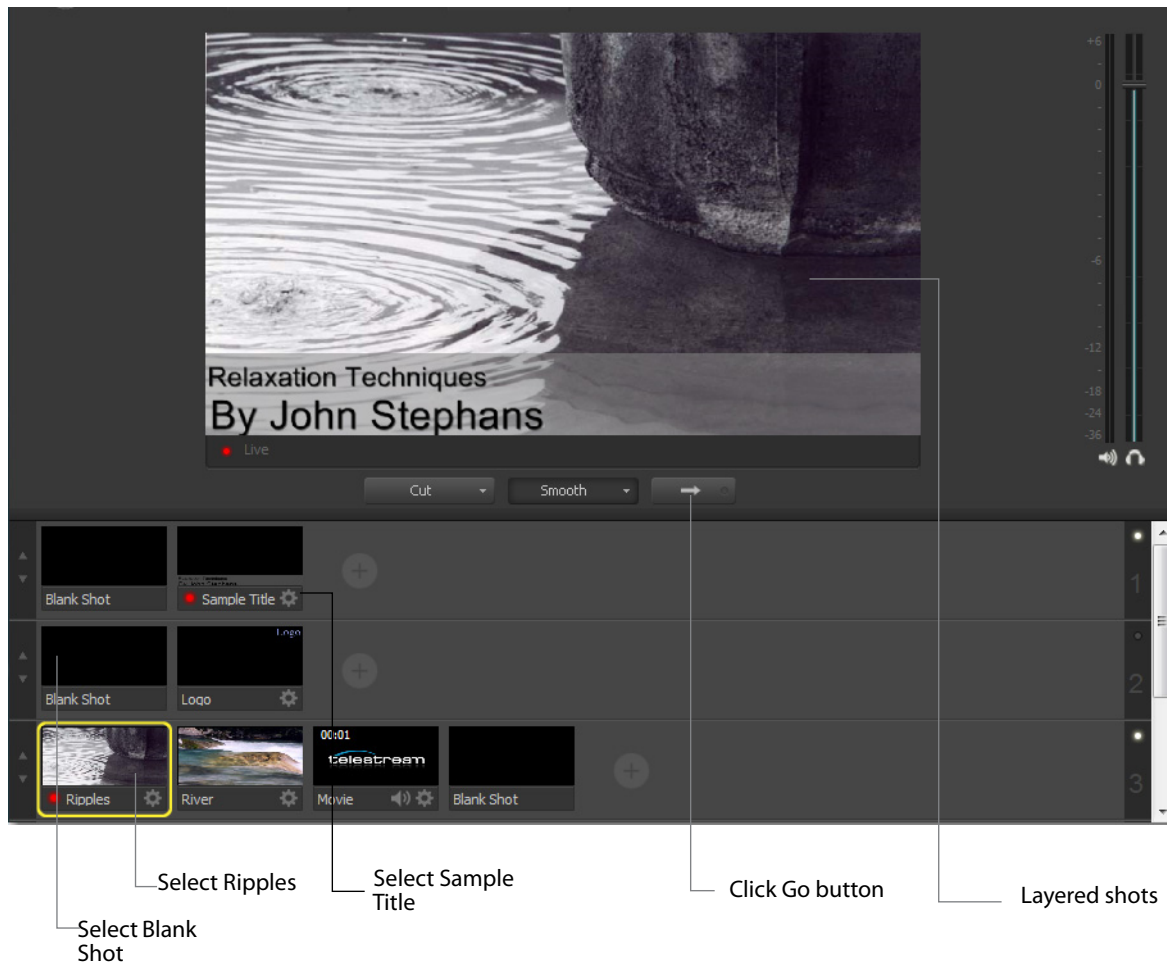
Preview

STUDIO

One problem you may have noticed while running this tutorial is that you cannot see the changes you are making before broadcasting them. To solve this problem, Wirecast enables you to see a preview of what you broadcast.

Select *Preview* from the Layout menu. A preview window is displayed to the left of the Live Broadcast window.

Click the River shot on Layer 3. The River shot is displayed in the Preview window. The Preview windows uses a green LED light to identify it. The Live Broadcast window uses a red LED. When shots are selected they display a green or red LED to indicate selection for preview or live broadcast.

Preview window

River selected for Preview window

Sample Title and Ripples
selected for Live window
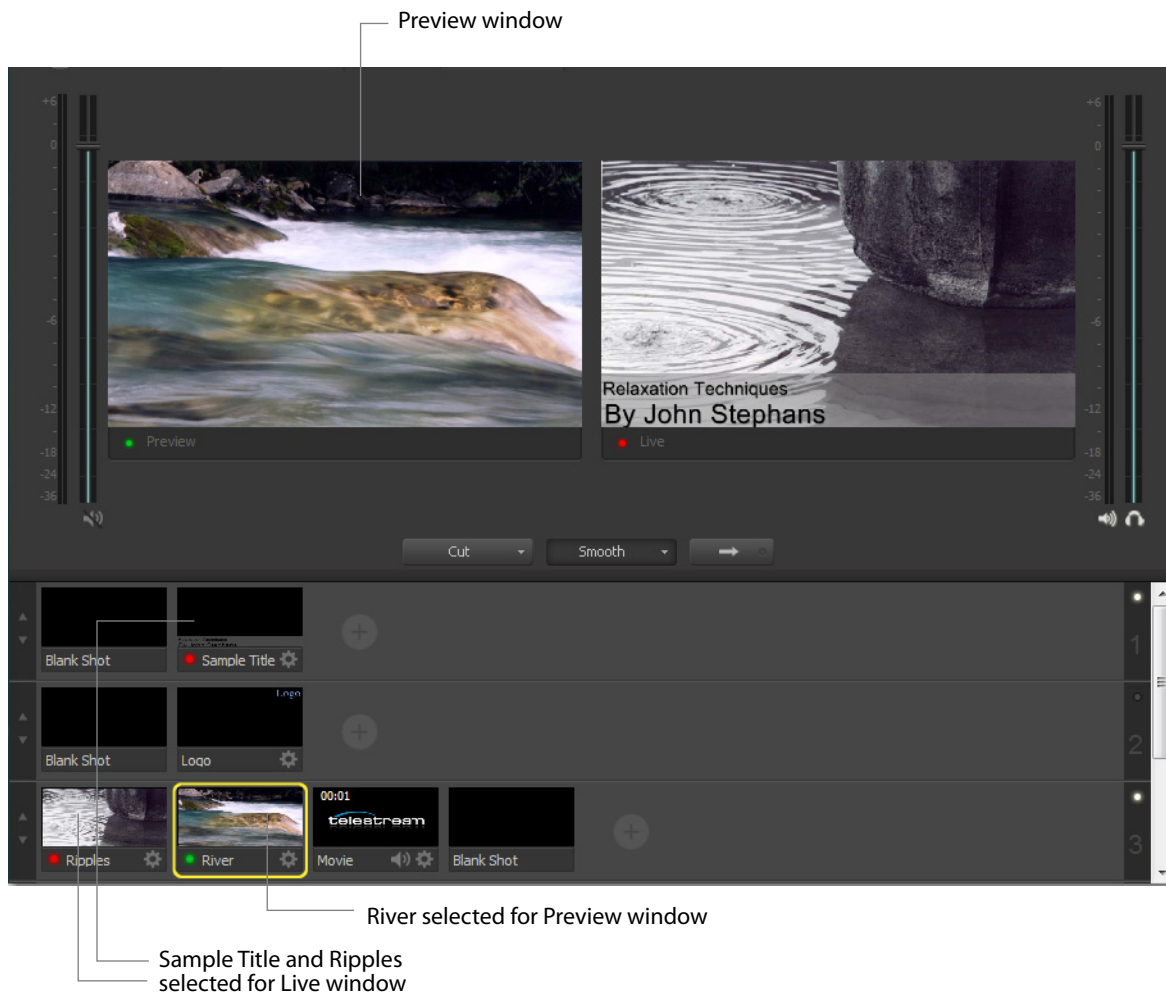
Click the Go button to make the River shot live. Click Blank Shot in Layer 1 to remove the title from the ripples shot.

Click Go button

Click Blank Shot
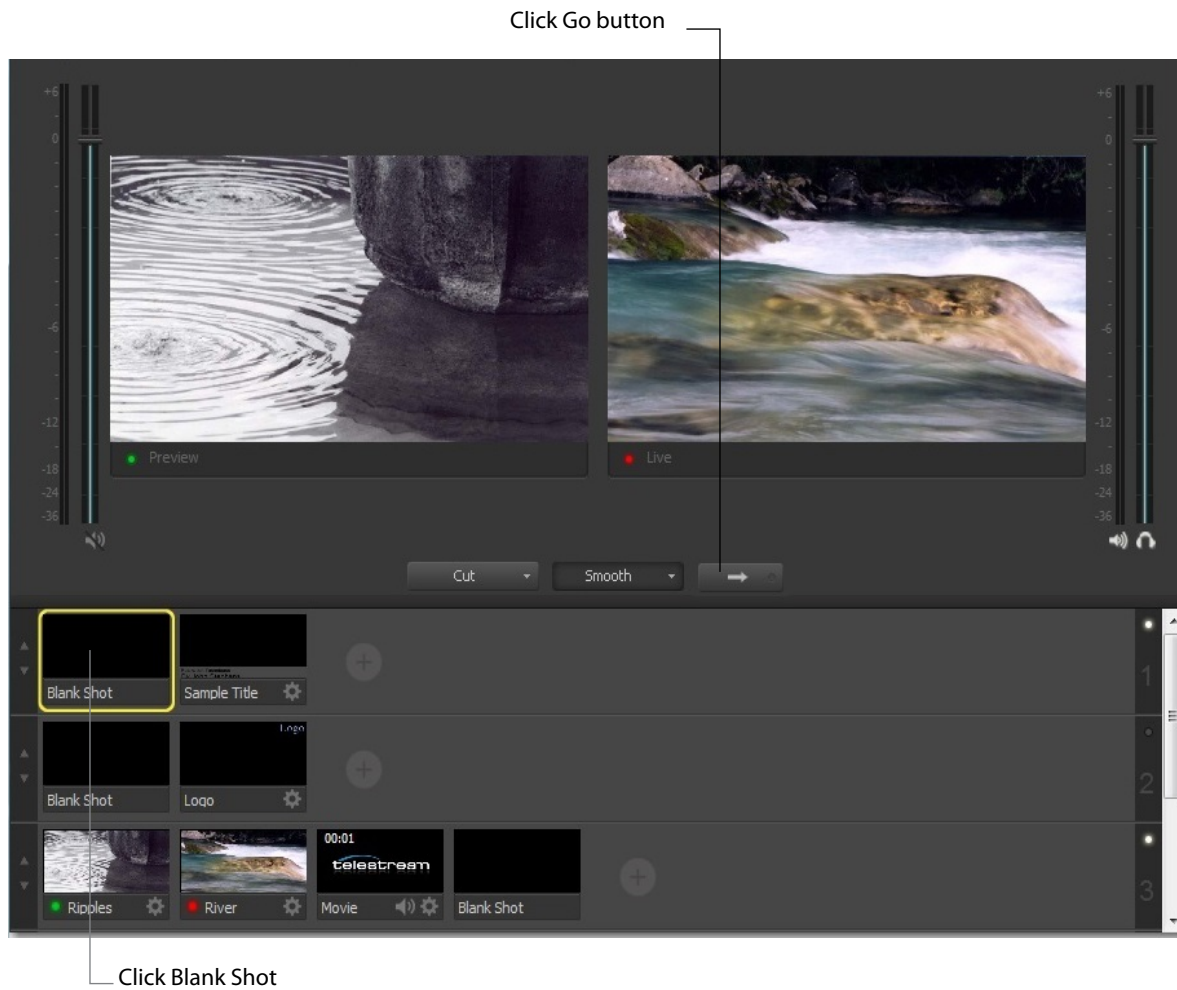
Note: Taking a shot live will set the Master volume slider to the value of the Preview volume slider.

Click the Go button again to make the Ripples Shot live. Notice that the Ripples and River shots LED's have change color because the Preview and Live windows exchanged images. This lets you know what your last live window looked like as you prepare your next shot in the Preview window.

Click Go button again
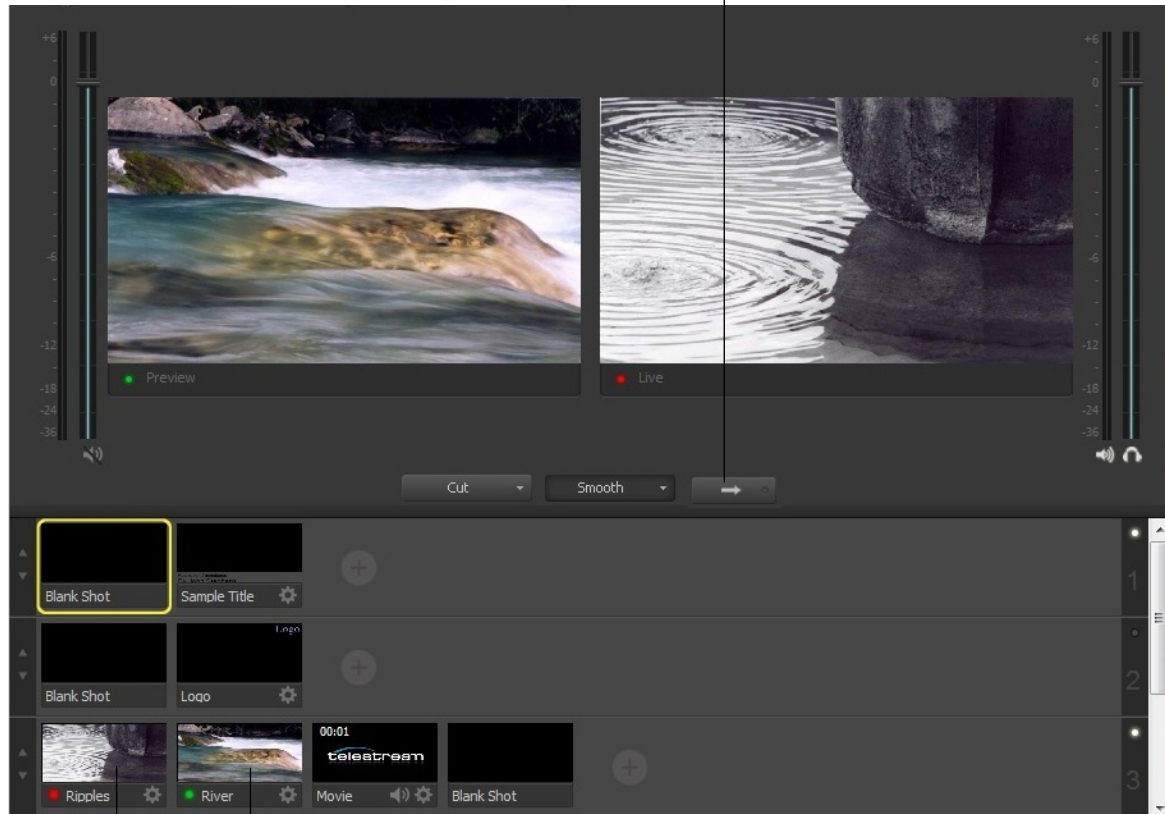
Shot LED's changed color

Tutorial 2: Editing Shots

The first tutorial used only the Main window, and explained various ways in which you can use an existing shot. But shots can also be created and edited. This tutorial demonstrates how to edit your shots.

You create shots for use in broadcast presentations. Shot editing enables you to make shots you need for your broadcast. Shots can be configured in different ways. Some shots have only titles and some just a logo, others may have only a picture. When you broadcast you are choosing -- in real time -- the shot you want to display.

Note: Before you start this tutorial, create a new tutorial document by selecting Create Document Tutorial from the Help menu. You should see a new Main window as shown below.
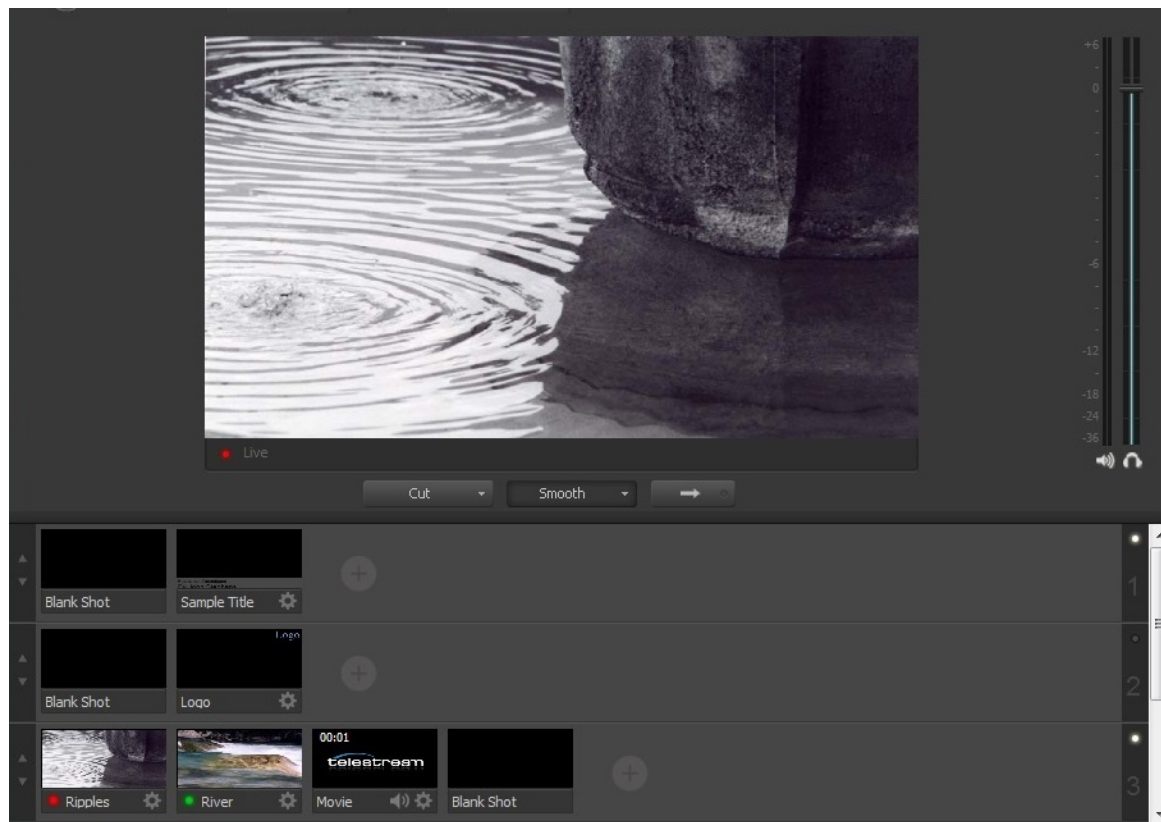
Shot Editor Overview

Double click the Ripples Shot. This opens the Shot Editor window.

Note: If you save a document with the Shot Editor window open, Wirecast remembers this and re-opens the edit window when the document is re-opened.

The Shot Editor window has three main areas: Shot Preview, Configuration Area, and Source Layers.
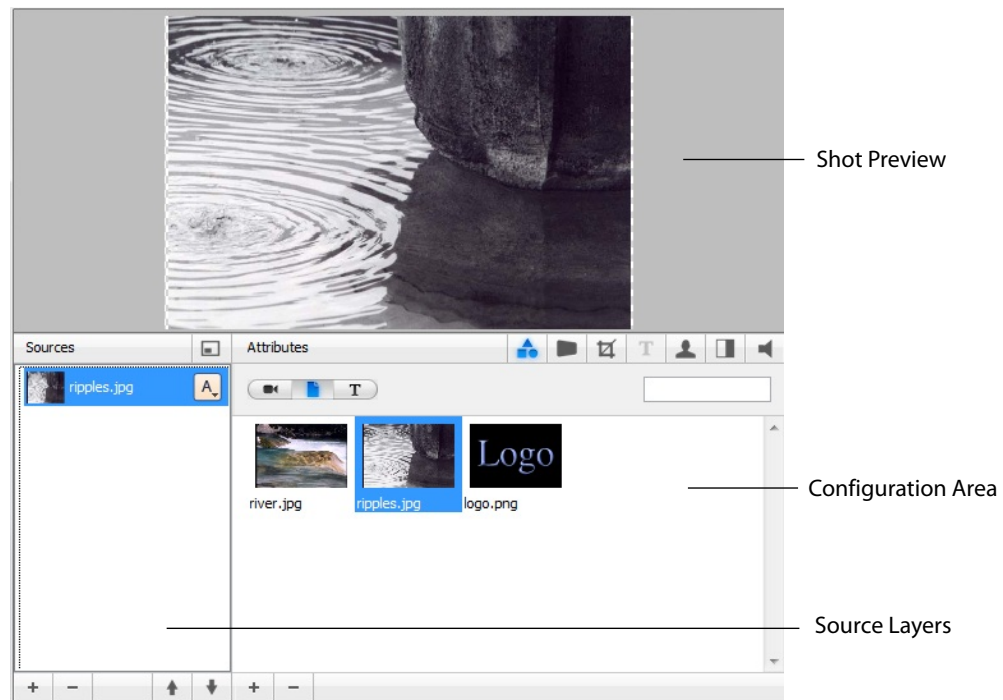
Shot Preview This area shows exactly what this shot looks like to your viewers when you take this shot live.

Configuration Area This is where you make changes to the content of the shot, and set its parameters. The configuration area changes appearance depending on the selected Source Layer.

Source Layers This area enables you to add, remove, and reorder the sources in your shot. Sources are ordered visually from top to bottom. For example, the first source in the Source Layer List appears on top of all other sources in the preview. This list also controls visibility of each of the elements in the shot.

Source Layers

The bottom left part of the Shot Editor window lists the sources that make up your shot.
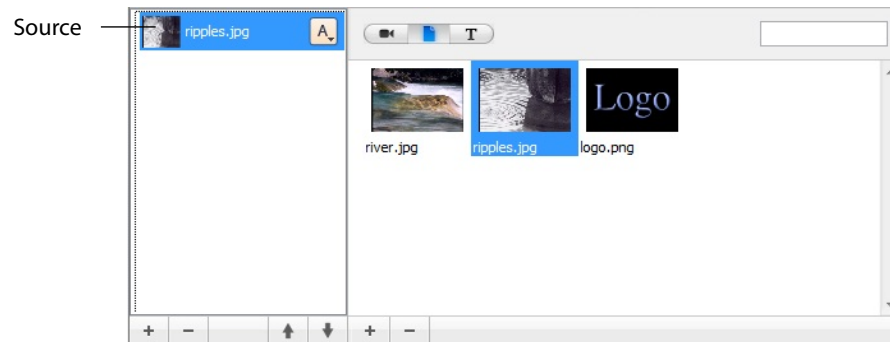
Click on the Logo icon (source) in the Configuration Area. Notice that the Logo is displayed in the Shot Preview area. Click the Ripples icon (source) and the Preview switches to Ripples. This is how you change the source media for this layer in the shot.

Template Window

The Template window icon is located in the controls bar in the middle of the window.
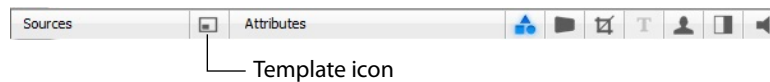
Template icon

Click on the template window icon to open the Template window. Select the *Angled In* template and click the *Apply* button:

Select Angled In

Click Apply
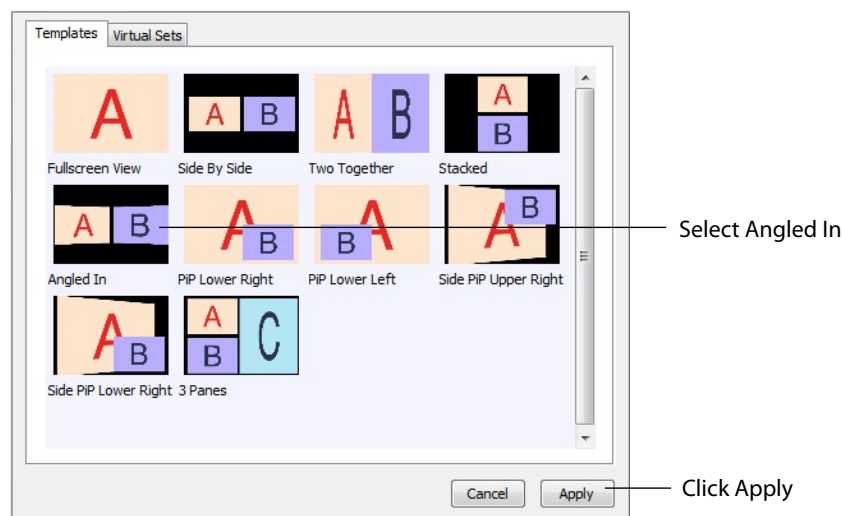
Notice the Preview has changed again in the Shot Editor window, and now shows the Ripples image on the Left side. This is because the template selected has an A and a B

portion to it. Two different sources can be assigned to A and B, but for now only A is assigned (with the Ripples source):
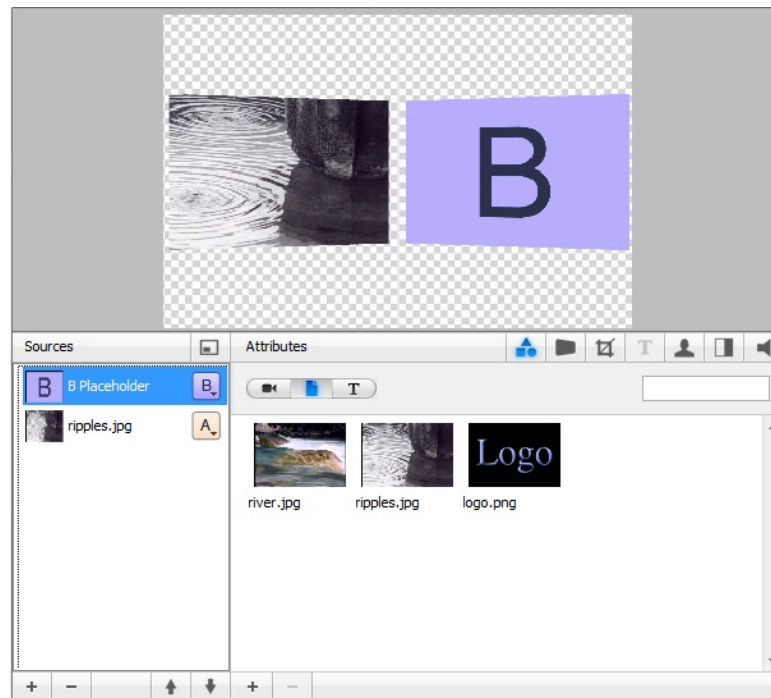
Sources in Wirecast can be assigned either A, B or C in the Source Layers list. To change the assignment, click the A (or B or C) icon and make a selection. This makes choosing a new template much simpler because Wirecast automatically positions the correct sources on screen.

For example, to change the media for the source that is identified as B, select the source identified as B, then click the River icon in the Configuration area. Your Preview should now look like this:

Click on the
B source

Click on the
River icon

River source is
displayed as B
in Preview
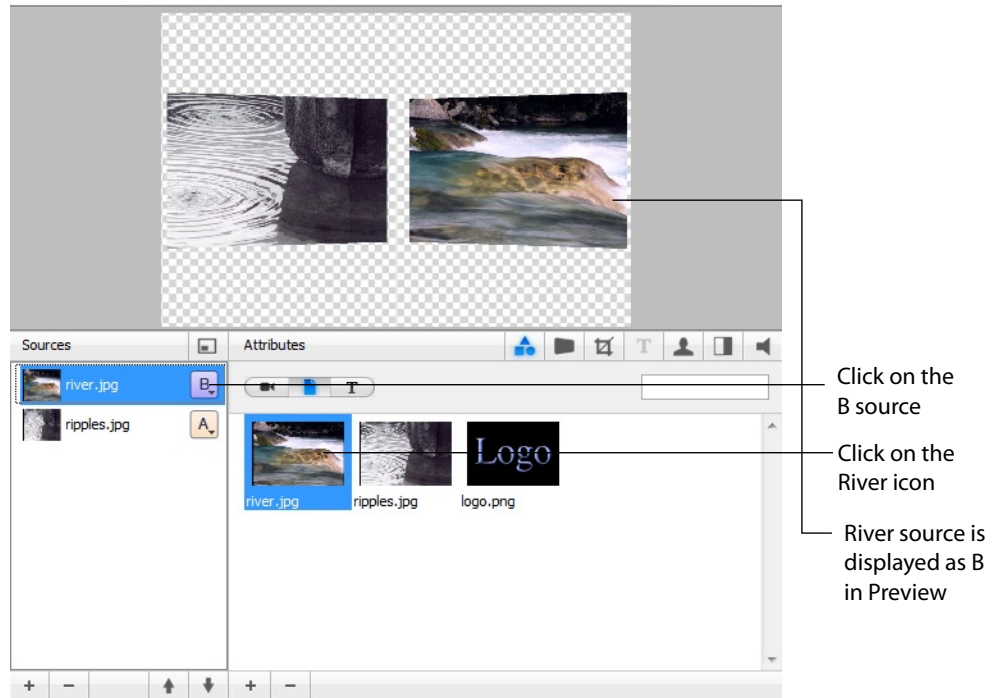
Titles

STUDIO

You can also add a title to a shot. First click the plus (+) button on the bottom of the Source list to add a new layer:

Click the
plus button

New source
layer added
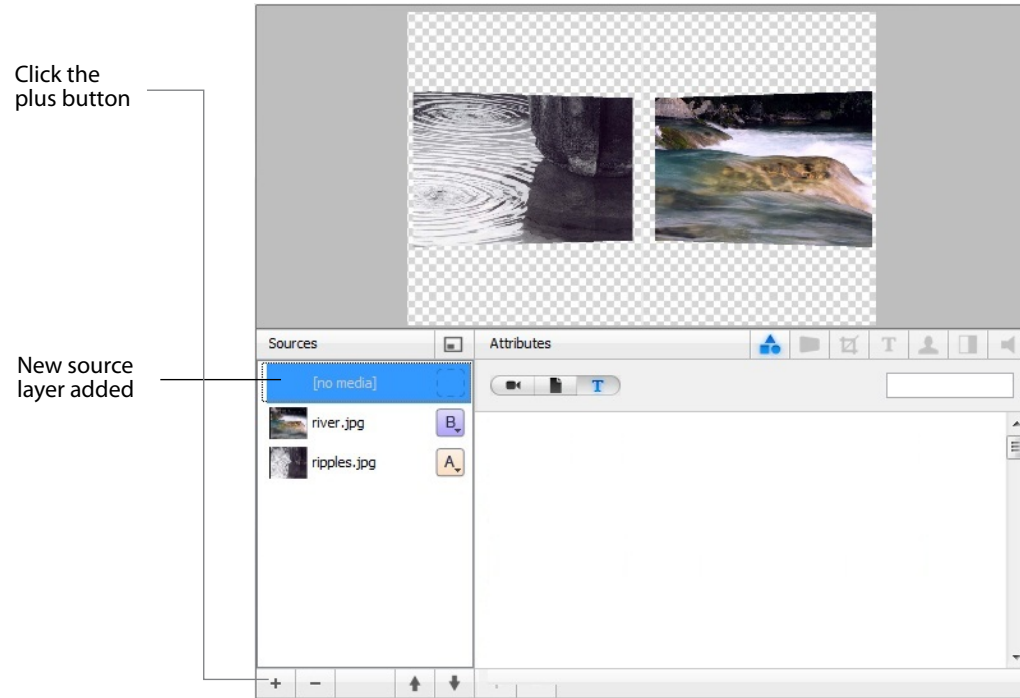
To add a title template, click the T button on the control panel:

Click T button
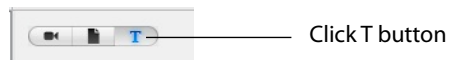
Select the title template called *Blue Banner 3* (items are not listed alphabetically) and your preview adds the title:

Select Blue Banner 3

Blue Banner 3 displayed
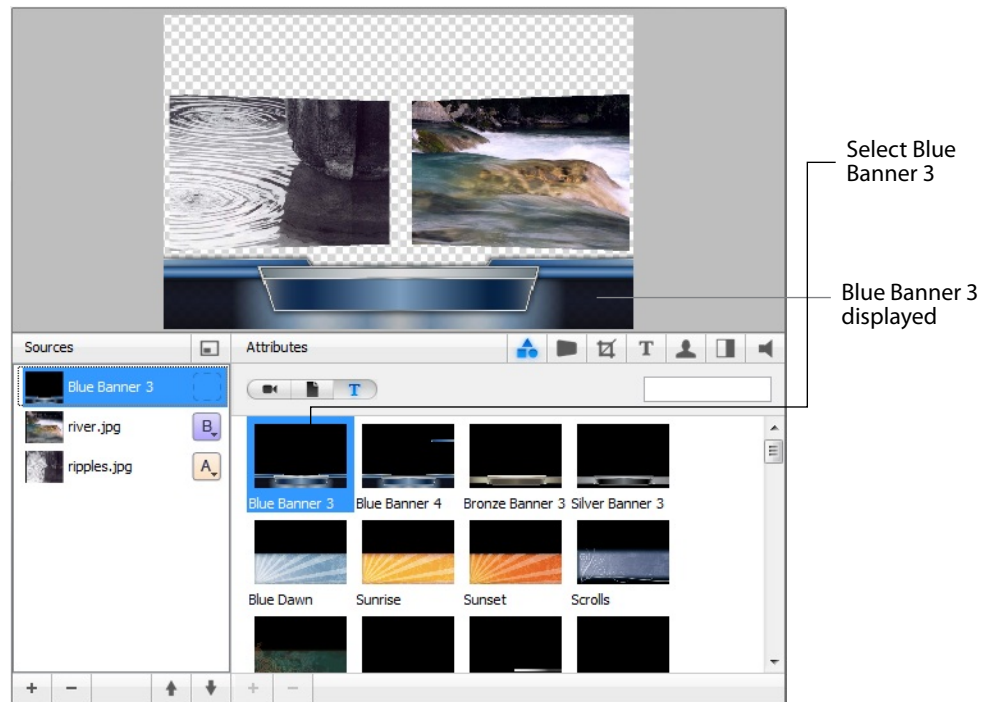
Next, click the **T** icon in the Attributes bar to enable text editing:

Click T icon
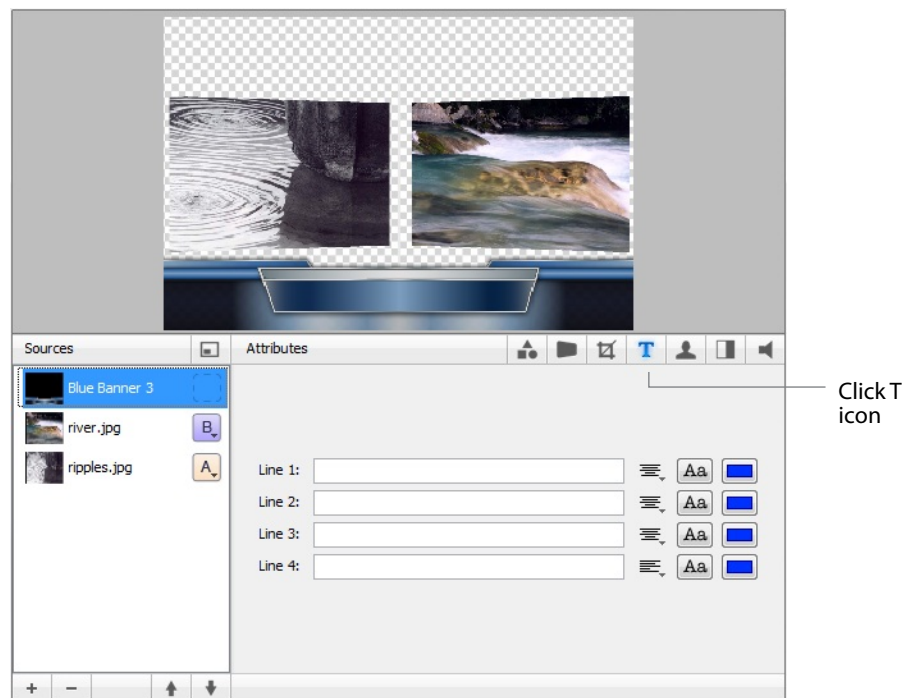
Type text into lines 1 & 2 to display it in the preview window:

Text lines displayed

Type two lines of text
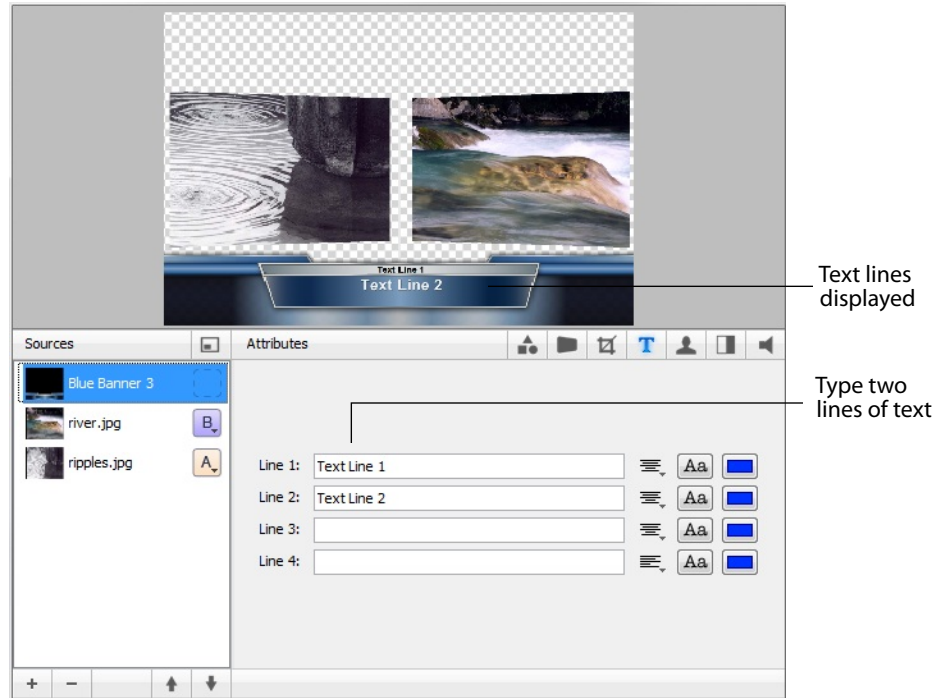
Effects/Motion

Positioning Objects

The sources in a shot can be positioned anywhere on the screen. Make sure Blue Banner 3 is selected. Click the *Effects* icon in the Shot Editor.

Select Blue Banner 3

Click the effects icon
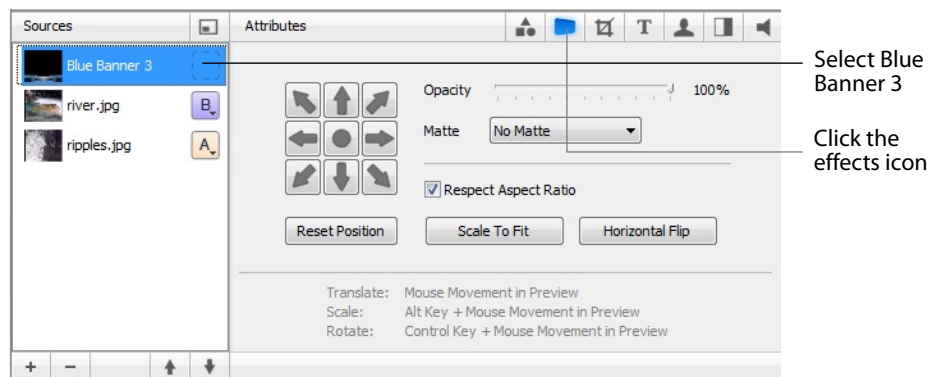
Though the title element is initially placed in the bottom middle of the Preview screen, it can be moved anywhere. To move the title, click and drag it to a new location. You can

also move the title to an edge, corner, or center by clicking on one of the repositioning buttons in the configuration area:

Click a button to move an element
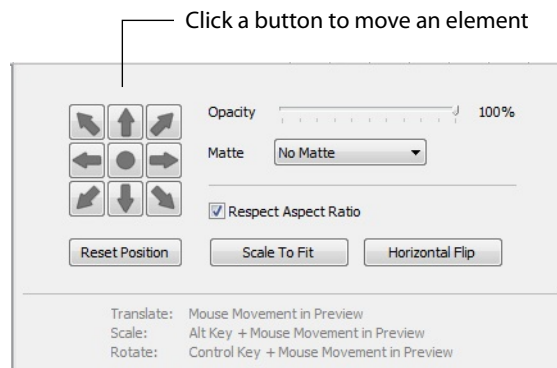
You can also resize or rotate the title.

To resize the title (while respecting aspect ratio), hold the Command key down while moving the mouse vertically. To resize (independent of the aspect ratio), hold the Command key and the shift key down while moving the mouse vertically and horizontally. The Respect Aspect Ratio checkbox in the configuration area must be unchecked.

To rotate the title, hold down the Option key while moving the mouse vertically and horizontally.

Motion for Objects

All objects (including the title) can have motion assigned to them. Click the Motion tab, to open the Build-In/Build-Out configuration panel:

Click the
Motion tab

Build In / Build Out
configuration panel
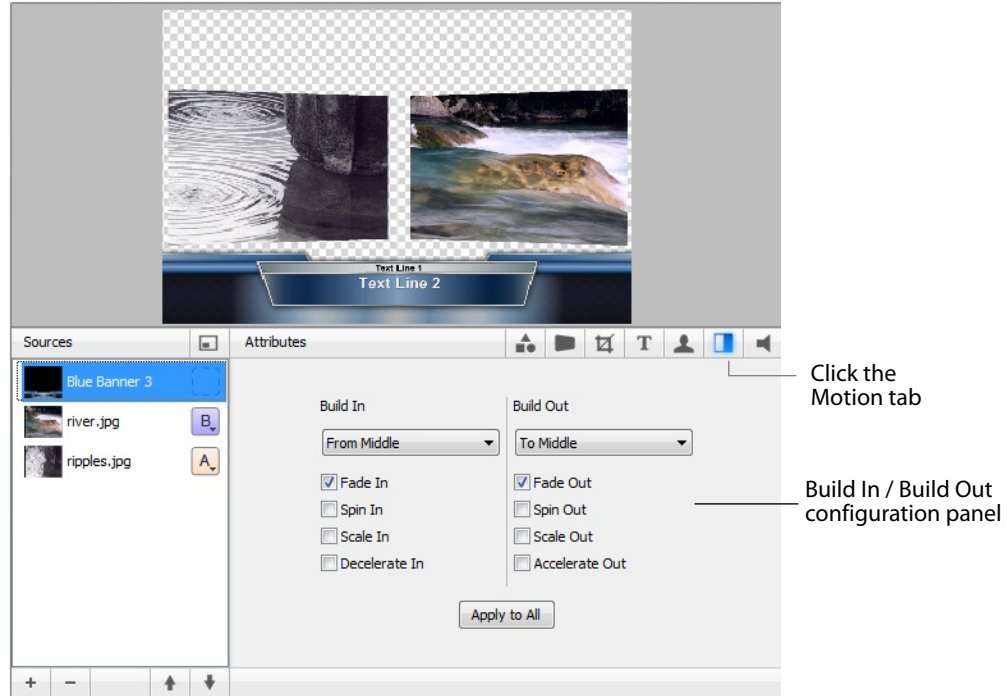
Motion only occurs during a transition (when you click Go, or click a shot in AutoLive mode). Motion defines how to add (Build-In) or remove (Build-Out) a shot element.

There are two forms of Motion:

1. **Build In (add)** Build In motion occurs when the shot is added to the Live Broadcast display.

2. **Build Out (remove)** Build Out motion occurs when the shot is removed from the Live Broadcast display.

Changing Motion Options

Click the menu under Build In in the configuration area and select *From Left*. Also check the *Decelerate In* checkbox:

Select "From Left"

Check Decelerate In
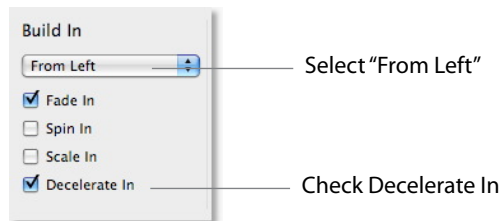
To see this behavior in action, you must go back to the Main window and trigger the Build In action. To do this, follow these steps:

1. Close the Shot Editor window (optionally) by clicking the X in the corner of the window.

2. In the Main window, make sure Smooth transition is selected.

3. Click on the Blank Shot, then click the Ripples shot (recently edited). Notice that when the Title appears it comes in from the left.

Tutorial 3: Broadcasting

This tutorial demonstrates how to setup and broadcast your Wirecast presentations. You can broadcast to a specific computer (Unicast), multiple viewers (Multicast), or even record your broadcast to disk.

There are two main components for broadcasting your presentation (or saving it to disk): Encoding and Destination.

You need to decide how you are going to encode the broadcast. Encoding is the type of compression used (JPEG, MPEG4, etc.). Wirecast comes configured with many common encoding options. (see *The Encoder Presets Window*)

A destination for the broadcast must be selected. You can send it to a server for broadcast or save it to disk.

Streaming

You can stream your broadcast to any streaming service provider you choose. The Broadcast section of this user guide provides details on how to do this for many popular providers. This tutorial will show how to stream to Bambuser.

To stream to Bambuser (as an example), follow these steps:

1. Select *Bambuser* from the Destination menu.

2. Select an encoder.

3. Enter your Bambuser username.

4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default RTMP port is 1935. You may need to configure your firewall to enable connections on this port.

Note: If you do not have a username and password, you can sign up with Bambuser by clicking the Bambuser icon or by clicking *Sign Up*.

5. Select your Bambuser channel.

6. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from

0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is displayed when you enter the amount of delay.

7. Click OK.

Select Bambuser

Select an encoder

Enter user name

Click Authenticate and enter password

Select Channel

To stream your presentation, click the *Stream* button at the top of the Main window.

Click Stream   Click Record

If you have not already selected a destination and logged into it, a dialog box displays. Select a destination, log in when asked to do so, then click OK.

Select Destination

Click OK

The Stream LED will blink until a connection is made. Once you are connected the LED turns full on and a red box is placed around the Stream button. If you cannot connect an error message will display.

Red LED and red box

Connection strength bars are displayed on the right. Fewer bars indicates a weaker (slower) connection.

Green connection strength bars

If the connection is ever broken, the green bars are reduced to a single red bar, then immediately a *no connection* icon is displayed in place of the bars.

No connection icon

When the connection recovered, the *no connection* icon is replaced with the green bars.

Click *Stream* again to stop streaming. You can also record your broadcast by clicking *Record*. When you stop streaming, if you

Main Window

Introduction

This section describes in detail how to use Wirecast's main window.

Topics

- *Overview*
- *Control/Status Bar*
- *Preview/Live Broadcast Area*
- *Countdown Clock Display*
- *Transition Controls*
- *Shot Tool Menu*
- *Shot Selection Area*
- *Layers*
- *AutoLive*
- *Live Icons*

Overview

Wirecast's main window is comprised of these display areas:

- **Controls/Status Area** The top area with the Stream and Record buttons.
- **Preview/Live Broadcast Area** The large area in the center.
- **Transition Controls** The area with the Transition (Cut and Smooth) and Go buttons.

- **Shot Selection Area** The area displaying the shot icons (available shots).

Preview/Live
Broadcast Area

Control/Status Area

Transition Controls

Shot Selection Area

Control/Status Bar

Control buttons and status information are displayed at the top of the Main window.

Recording time

Record button

Streaming time

Stream button

Gear icon

Frames per
second

Bitrate

CPU Usage

Connection

Wirecast displays the following controls and statistics:

- **Stream button** Click to begin streaming.

- **Streaming time** This displays how long you have been streaming. This value does not reset when you start/stop the broadcast. It is cumulative. This enables you to save portions of a broadcast to disk and still know the total amount of time.

- **Record Button** Click to begin recording.

- **Recording Time** This displays how long you have been recording. This value does not reset when you start/stop the broadcast. It is cumulative.

- **Gear Icon** This is an Output Settings shortcut. Click to open the Output Settings window. (Same as selecting Output > Output Settings).

- **Frames per Second** Displays the broadcast frame rate (fps).

- **Bitrate** Displays the broadcast bitrate (kilobits per second).

- **CPU usage (percentage)** This displays the current load on your CPU when streaming or recording in percent of usage. The encoder affects the CPU usage more than any other parameter in Wirecast. If this value is high, you should use a different encoder, or modify your encoder settings. If the CPU usage is near 95%, use a lower quality video output to lower the bandwidth.

Note: To avoid decrease in video quality, Wirecast should not be used at CPU usage above 80%. See the Telesteam Website for suggested configurations.

- **Connection** This displays the current connection quality. The bars indicate the amount of buffer memory used. High bar count reflects low buffer use (good connection). Low bar count reflects high buffer use (poor connection and in danger of broadcast errors). When one orange bar is displayed, the buffer is full.

Preview/Live Broadcast Area

STUDIO

When you open a new document, if you are not licensed for Studio or Pro, only the Live area displays. The Live area shows what is broadcast to your viewers before the encoding or compression. If you are licensed for Studio or Pro, the Preview window is displayed by default.

When AutoLive is off, you can make several changes without your viewers seeing the change. This is most useful when you are using an engineer to run your broadcast. When you are making changes to your broadcast, you may want to see those changes before broadcasting them. Preview allows you to do this.

To see the preview, select *Preview* from the Layout menu. This sets up the Main Window with the Preview Area on the left and the Live Broadcast Area on the right. Clicking the Go button makes the preview shot become Live.

Preview Area

Live Broadcast Area

Click Go button
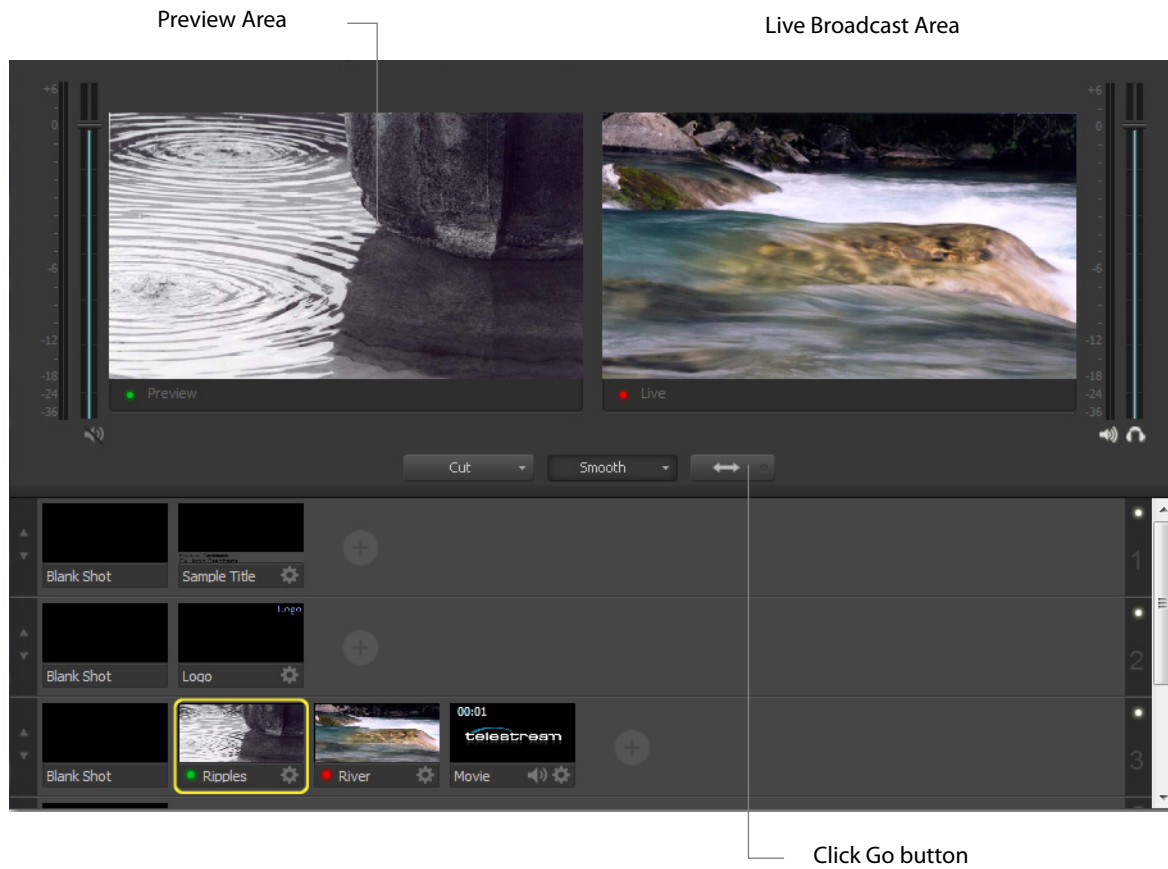
Countdown Clock Display

The Main window displays a countdown clock whenever a video shot is playing. If you have multiple video shots playing, click the gear menu icon to select which shot will be associated with the countdown clock.
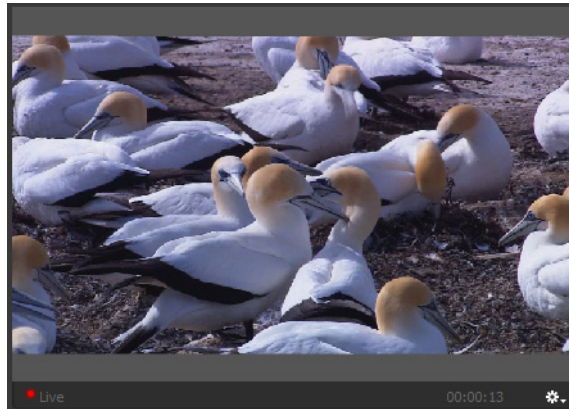
Countdown clock   Gear icon

Transition Controls

The transition area is in the middle of the Main Window:
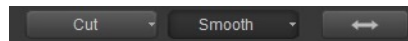
There are two Transition buttons, but each can be configured to present one of many possible transition types. In the image above, the two configured transitions are: Cut and Smooth. Since Smooth is selected (button darkened), any transition executed by clicking Go is a smooth transition.

Changing Transitions

If you click the Cut button, it becomes selected and making it the current transition type:
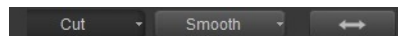
You always have two different transition types available. You can also select one of the two buttons by pressing Command+1 or 2 keys for the two transition types displayed.

If you click the down-arrow on the right side of either transition button, you can select a new transition to assign to that button.

Click arrow to open menu

Select a transition type
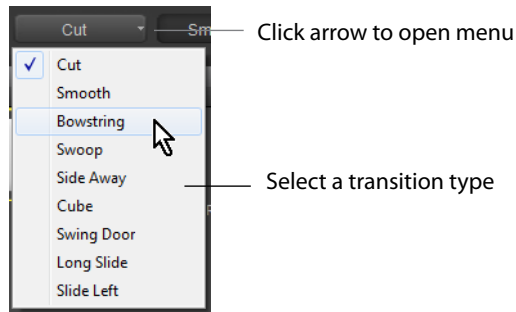
Transition Speed

The transition speed is set by selecting *Switch > Transition Speed*. There are five settings: Slowest, Slow, Normal, Faster, and Fastest.
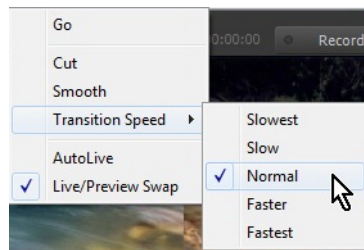
Go Button

The Go Button (or Command+G) enables you to make a transition occur at any time.

Go button

Clicking the Go button does nothing when Wirecast is in AutoLive mode, except to update a live shot if you have made changes to it using the Shot Editor.

Transition Editing

Some transitions have parameters that can be changed. To edit these parameters, select *Edit Transitions* from any of the three transition button drop-down menus (Cut, Smooth, etc.). Select the transition you wish to edit from the drop-down menu. Modify

the displayed parameters as required. Each transition type has its own set parameters. Click OK when finished.

Transition select menu
Modify parameters
Click OK
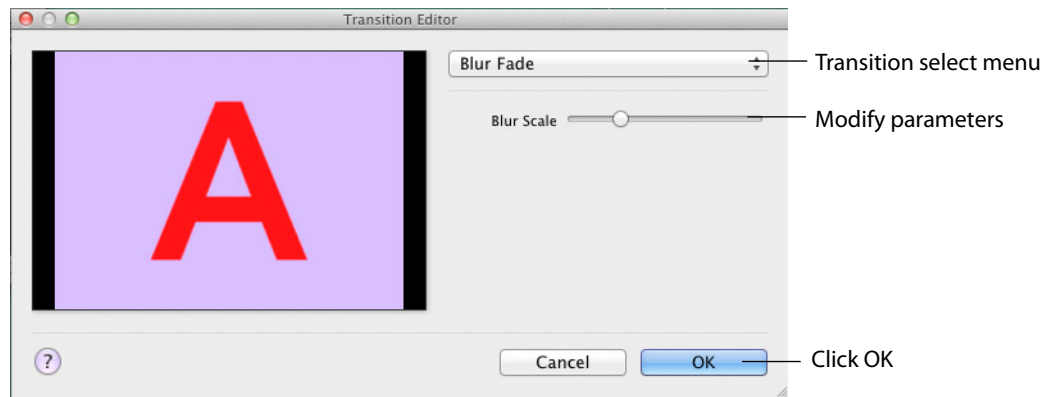
Shot Tool Menu

The Shot Tool Menu provides a way to open lives sources, file sources, the Desktop Presenter program, shot graphics, shot audio, and shot templates. The Shot Tool Menu is the circle to the right of the shot icons.
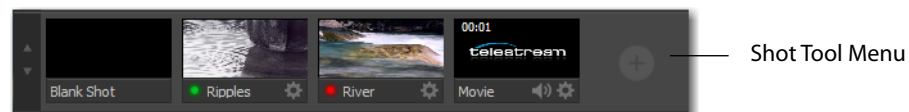
Shot Tool Menu

When you hover over the Shot Tool Menu it displays four menu items. Hover over and click a menu item to open it.

Hover over and click a menu item
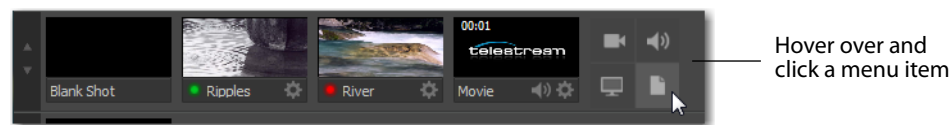
There are four menu items:

Live Sources
Desktop Presenter
Shot Audio
File Sources

Live Sources Click the Live Sources button to display a list of live sources under the categories: System Device, Web streams, and Scoreboard. When a live source is selected, it is added to the Shot Selection area as a new shot.

Shot Audio Click the Shot Audio button to add an audio file shot. When selected a dialog window displays enabling you to navigate to and select a file.

Desktop Presenter   To start Desktop Presenter, under the Sources menu select either *New Remote Desktop Presenter* or *New Local Desktop Presenter*. Remote Desktop Presenter presents a desktop from another computer in Wirecast. Local Desktop Presenter allows you to present a portion or all of the desktop of the computer where Wirecast is running.

You can also start DTP (local or remote) from the Shot Tool Menu.
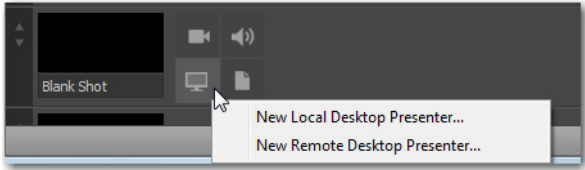
File Sources   Click the *File Sources* button to display a list of file-based source categories: Video Shots, Picture Shots, Music (audio) Shots, or a New (empty) Shot. When selected a file selection dialog window displays enabling you to navigate to and select a file to become a shot. Select Add New Shot to add a new, untitled, generic shot without any file-based resources attached.

Note:

Shot Selection Area

The bottom part of the Main Window contains the Shot Selection Area, also called the Shot List.

Shot selection area
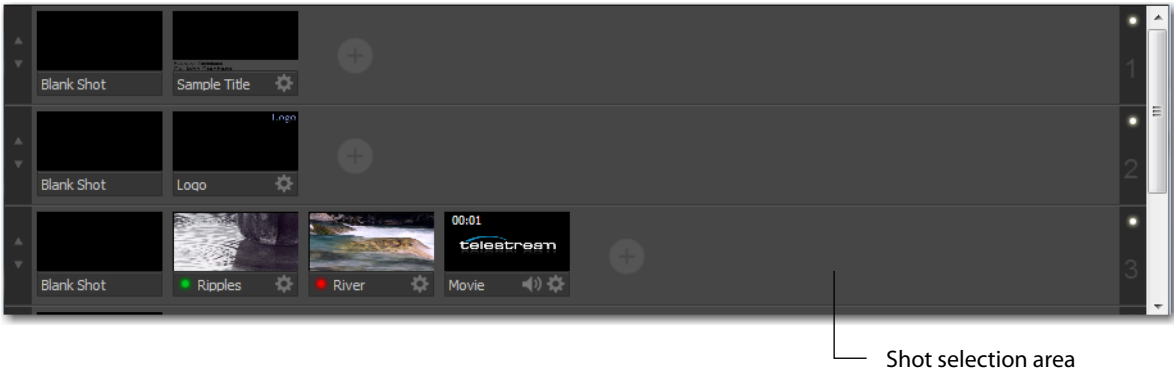
The shot icons can be made to display any live activity in the source it represents (cameras, streaming, etc.). See *Performance* in the Preferences section for turning on Live Icons.

Changing Shots

Right-click on any shot to display the shot menu.

Right-click shot
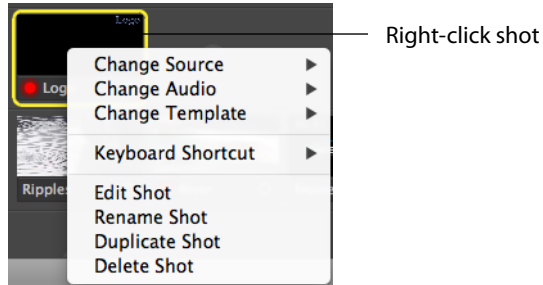
Change Source Select Change Source to change the source of your shot. Upon selection, a menu of sources will display enabling you to make a selection.

Select Change Source
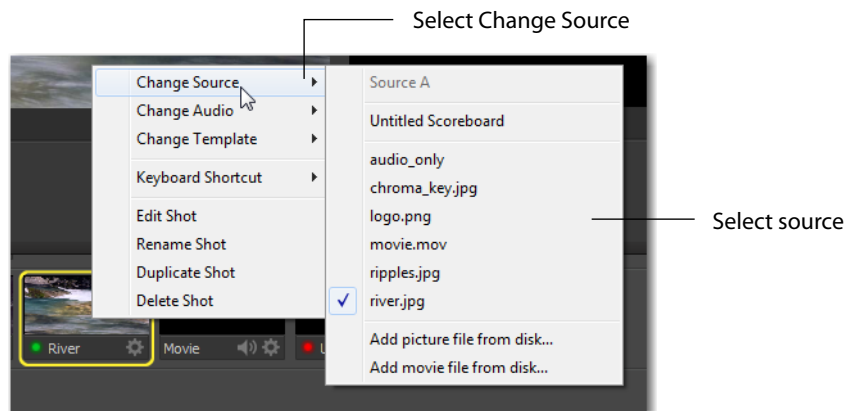
Select source

Change Audio Select Change Audio to change the audio of your shot. Upon selection, a menu of audio sources will display enabling you to make a selection.

Select Change Audio

Select audio
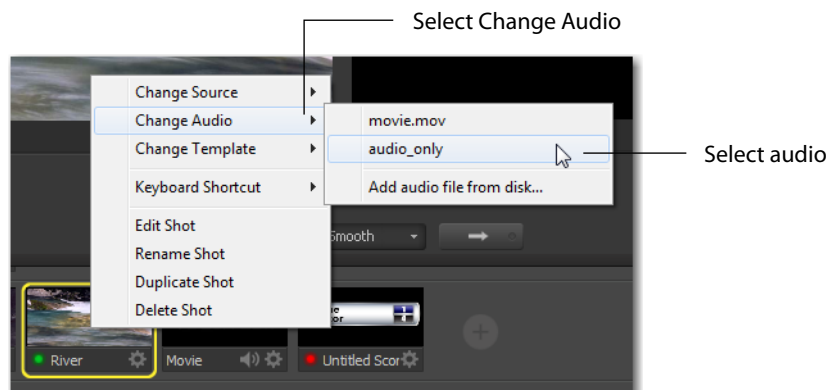
Change Template Select Change Template to change the template of your shot. Upon selection, a menu of templates will display enabling you to make a selection.
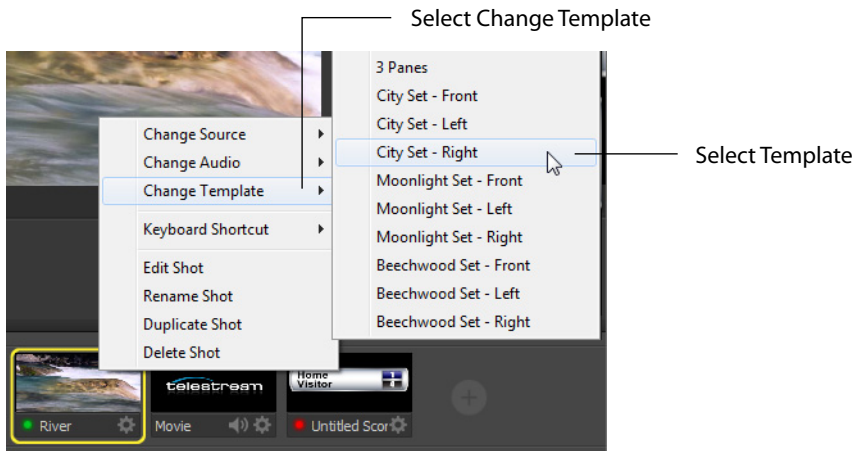
Keyboard Shortcut You can create a keyboard shortcut to any shot. To do this, select *Keyboard Shortcut*, then select a menu number to associate with that shot. After you have selected a menu number, that menu item is checked and the number is displayed in the shot icon.
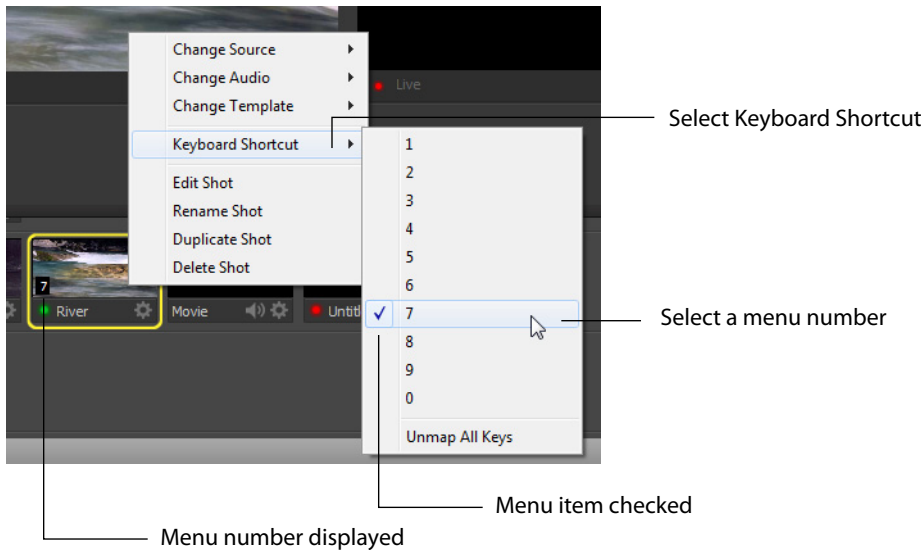
To take a shot using the assigned hotkey, press the number key assigned to that shot.

You can assign multiple shots to the same menu number as long as they are on different layers. When you use the assigned hotkey all the shots assigned to it will be taken. Selecting a checked menu item will uncheck it and unassign the shot.

Select *Unmap All Keys* to remove all hotkey assignments.

Edit Shot You can edit a shot by sliding the double arrows (located on the left side of the Preview window) to the right, revealing the shot editing panel. You can also edit a

shot by double-clicking on it, by right-clicking it and selecting Edit Shot, by selecting Edit Shot from the Edit menu, or by selecting it and pressing the Command+E keys.

Rename Shot You can rename a shot by right-clicking it and selecting Rename Shot, or by selecting Rename Shot from the Edit menu. You can also rename a shot by selecting it and pressing the Command+R keys.

Duplicate Shot You can duplicate a shot by right-clicking it and selecting Duplicate Shot, or by selecting Duplicate Shot from the Edit menu. You can also duplicate a shot by selecting it and pressing the Command+D keys.

Delete Shot You can delete a shot by right-clicking it and selecting Delete Shot, or by selecting Delete Shot from the Edit menu. You can also delete a shot by selecting it and pressing the Command+Backspace keys.

Moving a Shot to Another Layer

You can move a shot to another layer by selecting *Move to Layer* from the Edit menu, then selecting the target layer from the drop-down menu. Or, you can right-click the Shot and select *Move to Layer*. You can also click the title bar on a shot, and drag the shot to a different layer.

When shots are created, they are assigned to a specific layer. They exist on that layer until they are moved or deleted. (See *Layers*.)

Resizing the Shot Icons

You can resize the shot icons on any layer by clicking the up or down arrow on the left side of the layer window. Click the up arrow to make all the icons larger; click the down arrow to make them smaller. Clicking the down arrow when the shot icons are in their smallest state causes the layer window to become hidden.

Click up or down arrow to resize
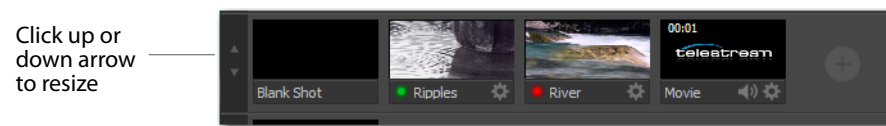
To show or hide a layer window, click the side arrow that is displayed.

Click side arrow
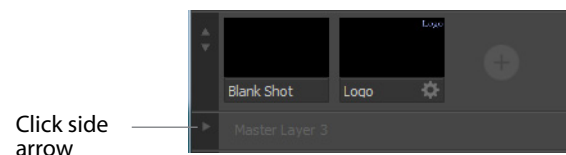
Layers

STUDIO

Wirecast allows you to put shots on any of five different layers. Layering shots enables Wirecast to merge them together, from back (lowest layer) to front, to form a single visual image during broadcast.

When Wirecast first opens, two of the five layers of shots are displayed. You must scroll down (or expand the window) to see the other three layers.

Shot Layer 1
Shot Layer 2
Shot Layer 3
Shot Layer 4
Shot Layer 5
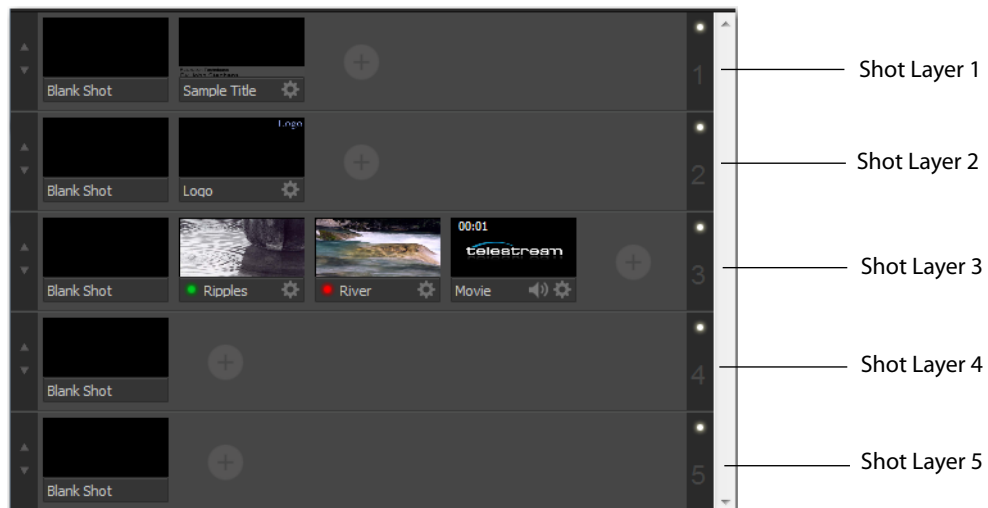
What is a Layer?

Layers are, by default, named 1 through 5. Layers determine the order when presenting images in the Live Broadcast Area. The Bottom layer (5) is drawn first, then the other layers are added, in order, up to Layer 1. Using multiple layers is a powerful way to show a company logo, a background, or a title, independent from each other.

Changing Layers

To select a layer, click its LED to turn it on (click it again to turn if off). When a layer is selected, the selected shot in that layer is displayed in the Preview/Live Broadcast area. If multiple layers are selected all selected shots are displayed.

Layered display

Click LED to select layer
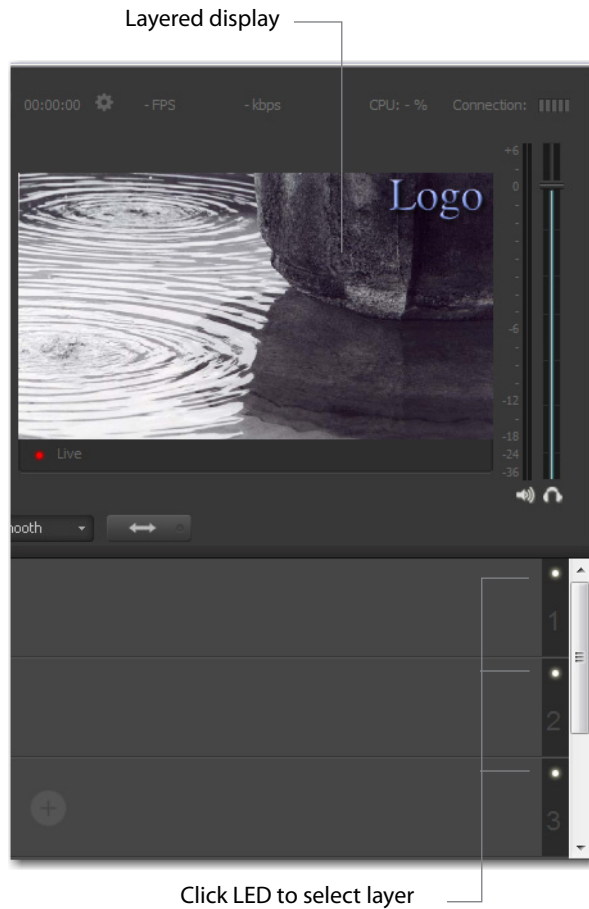
Moving a Shot to Another Layer

A shot can be moved to another layer by clicking and dragging the shot from one layer to another within the Main Shot window. When shots are created, they are assigned to a specific layer. They exist on that layer until you move them or delete them.

AutoLive

AutoLive is turned on and off by selecting *Switch > AutoLive* (or by pressing the Command+L keys). When AutoLive is on, changes made in the Shot List are automatically taken Live in the broadcast (using the current transition and duration). If you click a shot when AutoLive is off, the shot is not sent to live broadcast. In this mode

you take the shot live manually, by clicking the Go button, or by pressing the Command+G keys.

Live Icons

You can, optionally, make your live source icon display its source (camera, Web stream, etc.) in real time. This means that inside the icon, you will see what the live source sees.

Live source icon
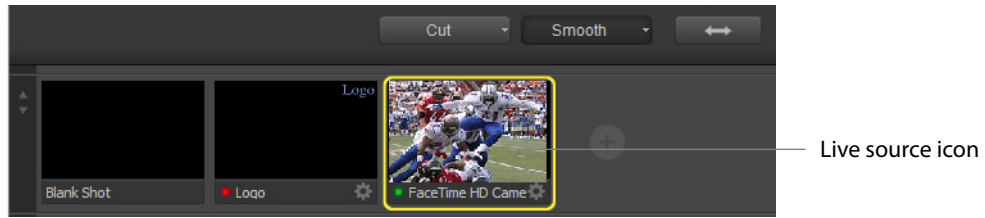
To turn on the *Live Icon* option (default is *off*), select the *Performance* tab in Preferences, then check the Live Icons checkbox. You can also adjust the frames per second rate of the display using the slider. Lower fps (frames per second) rates reduce the time taken to adjust the live icon display. Higher fps rates provides a smoother display of the live icon source.

Check to turn on

Slide to set fps
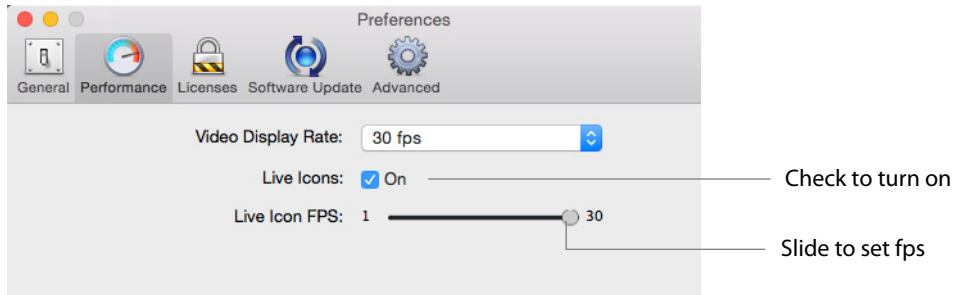
Note: There tends to be a degrading quality when an icon is live. So, if the CPU is reaching its maximum, turn off Live Icons to reduce CPU usage.

Keyboard Shortcuts

Introduction

This section provides a list all of keyboard shortcuts used in Wirecast. They are arranged according to how they appear in the drop-down menus in the main window.

General Shortcuts

Misc Shortcuts	Keyboard Shortcut
Display Shot	<shot number key*>
Enter	Selects left-hand transition button and clicks Go button
Space bar	Selects right-hand transition button and clicks Go button
i	Sets the media IN point
o	Sets the media OUT point
e	Sets the Replay IN point
r	Creates a Replay shot
=	Increments Home score
-	Decrements Home score
]	Increments Visitor score
[	Decrements Visitor score

* See Keyboard Shortcut in Changing Shots.

Wirecast Menu

Wirecast Menu	Keyboard Shortcut
Preferences	command+comma
Hide	command+H
Hide Others	control+command+H
Quit	command+Q

File Menu

File Menu	Keyboard Shortcut
New	command+N
Open	command+O
Import Media	command+Shft+I
Save	command+S
Save As	command+Shft+S
Close Window	command+W

Edit Menu

Edit Menu	Keyboard Shortcut
Undo	command+Z
Redo	command+Shft+Z
Cut	command+X
Copy	command+C
Paste	command+V
Select All	command+A
Edit Shot	command+E
Rename Shot	command+R
Duplicate Shot	command+D
Delete Shot	command+Delete

Switch Menu

Switch Menu	Keyboard Shortcut
Go	command+G
Cut	command+1
Smooth	command+2
AutoLive	command+L
Live/Preview Swap	control+command+W

Media Menu

Media Menu	Keyboard Shortcut
Start Playing All Movies	command+P
Pause All Movies	command+Shft+P

Source Menu

Output Menu

Output Menu	Keyboard Shortcut
Output Settings	command+Y
Start/Stop Broadcasting > Start All	command+B
Start/Stop Recording > Start All	command+K

Layout Menu

Layout Menu	Keyboard Shortcut
Master Audio	control+command+M
Main Shot List	control+command+L
Go to Layer > Master Layer 1	Shift+command+T
Go to Layer > Master Layer 2	Shift+command+F
Go to Layer > Master Layer 3	Shift+command+N

Replay Menu

Replay Menu	Keyboard Shortcut
E	Replay Mark In
R	Create Replay Shot

Social Menu

Social Menu	Keyboard Shortcut
	NO SHORTCUTS

Window Menu

Window Menu	Keyboard Shortcut
Minimize	command+M
Inspector	command+I
Encoder Presets	control+command+E
	command+T

Help Menu

Help Menu	Keyboard Shortcut
	NO SHORTCUTS

Adding Media

Introduction

In addition to live video from your cameras, Wirecast enables you to work with media created outside of Wirecast. This section introduces some common media types you can use with Wirecast.

There are three ways to add media to Wirecast:

1. **Drag & drop into a new shot**. The simplest way to add media to a shot is to drag & drop the media directly into the Shot List in the Main window.

2. **Drag & drop into an existing shot**. To add media to an existing shot, drag & drop the media directly into the Shot Editor's media list.

3. **Select directly.** You can add media by selecting Import Media from the File menu, by pressing the Command+Shift+I keys, or by clicking the plus (+) button in the Shot Editor.

Topics

- *Images/Opacity*
- *Supported Codecs*

Images/Opacity

Wirecast supports a wide variety of still images types (TIFF, GIF, JPEG, PNG, etc.). Some of these formats offer some form of opacity (or transparency). This is often called an Alpha Channel. Wirecast works seamlessly with these formats making them the preferred methods for using graphics and logos, which have transparency.

GIF and Transparency

GIF files are a special case because they only offer transparency and not a true Alpha Channel. The GIF format enables you to define part of the image as transparent (completely invisible), but does not enable you to define it as partially transparent.

Some GIF images use transparency for much of the image. However, near the edges of the visible data, transparency cannot be used. This happens quite often when there is a shadow near the edges of the visible data. The author of the GIF often assumes a certain background color (white, for example) and that color becomes embedded in the actual image.

When Wirecast displays these types of images, the edges of the visible data shows the background that was saved in the GIF. This is not a defect in Wirecast and, therefore, Wirecast can only present the data as it exists in the GIF. The solution is to obtain the original image and re-save the image as either TIFF or PNG. Both of these formats offer full Opacity.

Keynote Movies

Wirecast supports some special features of Keynote Movies which enable you to move back and forth between the pages from within Wirecast. With this feature you can visually annotate and walk through your Keynote for your viewers.

Exporting from Keynote

To take advantage of these features within Wirecast, export the movie into a QuickTime file:

1. Open your presentation in Keynote.
2. Select Export from the File menu.
3. Choose QuickTime and click Next.
4. Choose Interactive Slideshow.
5. Click Export, enter your file name, then click Export again.

Using Movies

To use the movie in Wirecast, follow these steps:

1. Drag & drop the Keynote movie into the Shot List in the Main Window.
2. Click the movie to take it live in the Live Broadcast Window. (Or, if you have AutoLive off, click the Go button.)
3. To go forward in the Keynote movie, select Play to next point from the Media menu (or, press the Command+Right Arrow keys). The Keynote movie plays to the next section using the transition you selected in Keynote.
4. To go backward in the Keynote movie, select Jump to previous point from the Media menu (or, press the Command+Left Arrow keys). All media in the Live area jumps to the previous point.

Windows Media

Windows Media Files (WMV and WMA) are not supported by Wirecast. The solution is to convert the media into a different type, such as MPEG-4.

Real Media

Real Media Files (.RM) are not supported by Wirecast. The solution is to convert the media into a different type such as MPEG-4.

Supported Codecs

Shown below is a list of supported video and audio codecs.

Video Codec	MOV (M4V)	MP3	MPEG-4 ISO (MP4)	WAV	AIFF (AIFF, AIF)	ASF (WMV)
AVC	YES	NO	YES	NO	NO	NO
H264	YES	NO	YES	NO	NO	NO
DVC25	YES	NO	NO	NO	NO	NO
DVCPRO50	YES	NO	NO	NO	NO	NO
DVCPRO100	YES	NO	NO	NO	NO	NO
MJPEG	YES	NO	NO	NO	NO	NO
ProRes	YES (mac only)	NO	NO	NO	NO	NO
Windows Media Video	NO	NO	NO	NO	NO	YES (windows)
Audio Codecs:						
AAC	YES	NO	YES	NO	NO	NO
MP3	YES	YES	NO	NO	NO	NO
PCM	YES	NO	NO	YES	YES	NO
Windows Media Audio	NO	NO	NO	NO	NO	YES (windows)

Titles

Introduction

STUDIO

Wirecast offers a wide variety of title banner templates to use in your broadcast. Adding a professional looking title is as simple as selecting a template and adding your text.

Topics

- *Adding Titles*
- *Modifying Titles*
- *Title Area*
- *Placing Titles*
- *Creating New Templates*

Adding Titles

To add a title to a shot, double-click the shot to open it in the Shot Editor:
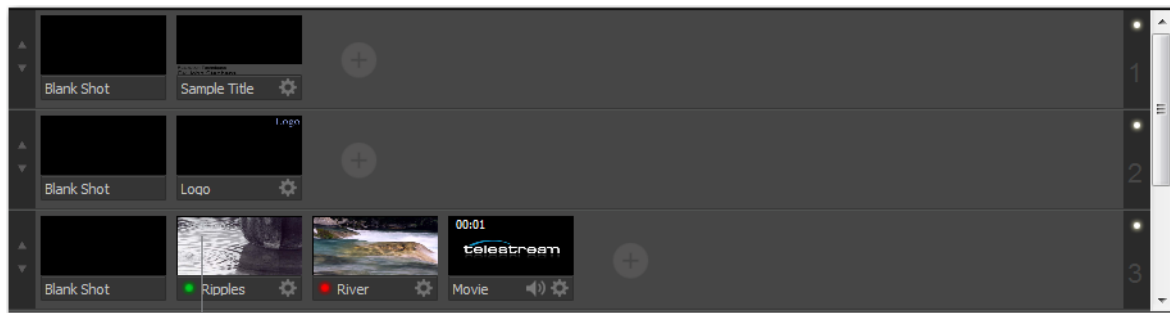
Double-click a shot to edit

Wirecast displays the shot you selected in the Shot Editor window:
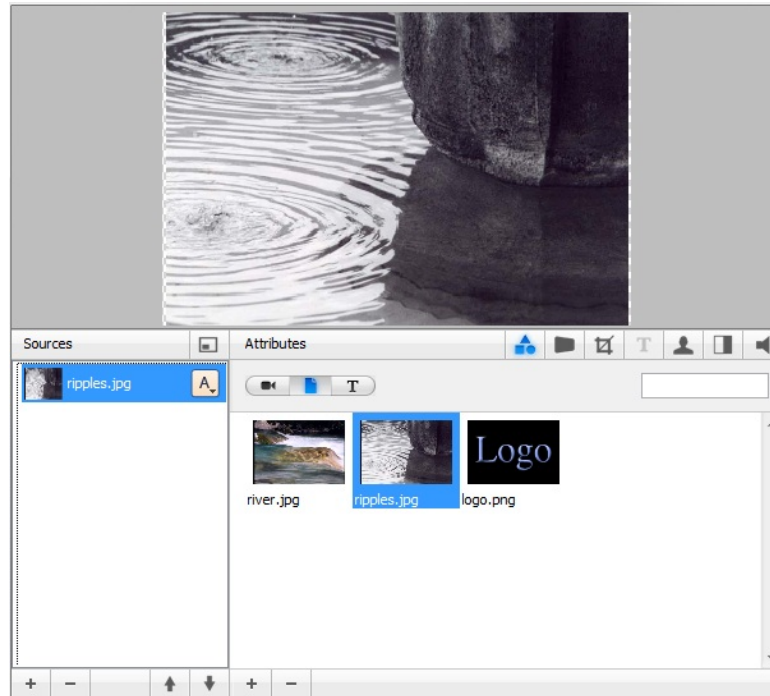
Adding New Source

To add a new source, click the plus (+) icon in the Sources Toolbar at the bottom-left corner of the Shot Editor window. Wirecast adds a new source entry, labeled *[no media]*.

Newly added source

Click plus to add new source
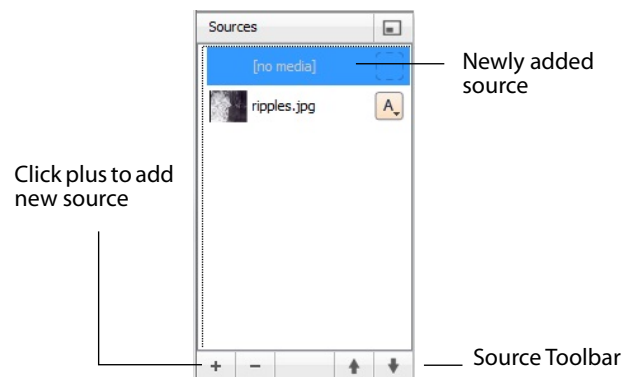
Source Toolbar

Using the tools in the Attributes Toolbar and the Media Panel, you can configure your source so it displays as requires:

Change Media icon
Visual Effects icon
Crop icon
Text icon
Chroma icon
Motion icon
Config Media Settings
Filter icon

Attributes
Toolbar

T icon
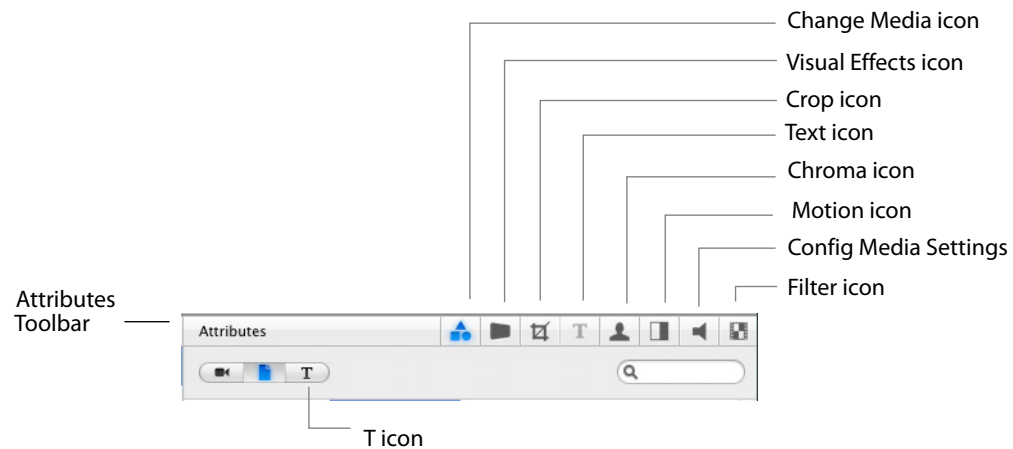
Configuring Titles

The basic configuration for a media source is a title bar with text captions. Other attributes are optional. As you configure the media, you can view your progress in the Preview area at the top of the Shot Editor window. To configure a title, follow these steps:

1. Select the Change Media icon in the Attributes toolbar. (Each time you create a new source, the media icon is selected for you).

2. Click the T icon in the Media Panel to display titling templates. Scroll through the icons and select the banner graphic you want to use for a title. Be sure to select a title banner that is graphically designed to display the number of lines (1 to 4) you intend to use for this source. Wirecast provides many templates, but you can also create your own.

3. Click on the Visual Effects icon in the Attributes toolbar to adjust the position of the banner, control its opacity and matting, and set other visual effects. Usually, no adjustments are needed.

4. Click on the Crop icon in the Attributes toolbar to crop the banner graphic as needed. As you adjust crop values, you can see the effect in the Preview window.

5. Click the Text icon in the Attributes toolbar and enter up to 4 lines of text to display in the title. You can adjust paragraph formatting, font characteristics, and font color using the buttons to the right of each line.

6. If you plan to chroma key the title, click the Chroma icon in the Attributes toolbar to enable and set up the chroma key. See Shot Editor Chroma Key to learn how to enable and configure chroma key settings.

7. Click on the Motion icon in the Attributes toolbar to set up your builds.

8. Click on the Filters icon in the Attributes Toolbar to add and configure filters to use in this title.

Note: For more detailed information on the above steps, see *Edit Menu*.

Modifying Titles

To modify the titles, you have to edit the shot. Double-click the shot to open the Shot Editor. Click the title attributes tool (T icon) in the Attributes Toolbar. The title modification screen displays:
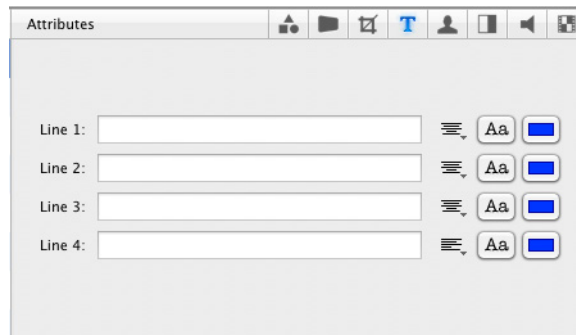
Title Area

Depending on the title source selected, you can modify up to four lines of information. Each line of text has its own justification, font, and font color settings.

Changing Text

To change the text, enter the text into the text entry area for the line to be changed. Wirecast supports all text entry (even in-line entry engines for Japanese, Korean, Chinese, etc.).

Changing Justification

Justification is controlled by clicking on the justification icon and selecting left, center, or right from the drop-down menu.

Changing Font

Click the font selection icon to open a font selection window. Click the icon again to close the font selection window.

The font selection window is a floating palette that changes the text as you make selections. So if you click in a different text entry area, the font panel notices this and configures itself to the settings of the new text entry area.

Note: The only items that Wirecast recognizes in the Font Panel are: Font Family, Typeface, and Size. All other settings are ignored by Wirecast

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Changing Font Color

Click the font color icon to change the color of the font. A standard font color selection window is displayed. Choose the color you desire and click OK.

Placing Titles

The previous sections describe how to create and edit a title for an existing shot. However, you can also create a shot which has only title data. This is very useful if you want to place the same title over several different shots or if you want to modify the title independent of the shot you are choosing. But you must decide, based on your type of broadcast, if you want your titles tied directly to specific shots or if you want them to be independent. Wirecast seamlessly supports both methods -- even both methods at the same time.

Seminar Title

You may want to broadcast a seminar and have the title of the seminar appear and disappear while switching between several other shots or cameras. In this case, create a shot which has only the title in it, enabling you to move this title to a Foreground layer. In this configuration, you can bring the title in and out of your broadcast by selecting between a blank shot and the title shot from your foreground master layer. By placing the title in this separate layer, it keeps it independent of the all other shots you have created.

Interview Title

If you are broadcasting an interview, the shot which contains the camera for the interviewee may have a title in it. In this case, when you cut to the shot of the interviewee, the title appears. When you cut to the person asking the questions, the title does not appear because it is a different Wirecast shot.

Note: Since you can turn visibility of a title on and off inside the Shot Editor, you can still turn the title on and off in the shot. To turn it off, make the shot live, then open the Shot Editor. Click the shot icon and then click Go (or press Command+G). To turn it back on, click the shot icon again and click Go.

shot icon
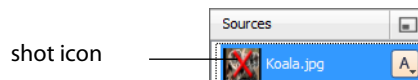
Creating New Templates

The templates that Wirecast uses are not editable within Wirecast. However, you can create new templates yourself using any graphics creation tool and an XML editor.

Example

Download the example custom templates from Telestream at:
http://www.telestream.net/downloads/Wirecast/titles/Wirecast_User_Titles.zip.

Decompress this file and copy the XML and PNG files to:
~/Library/Preferences/Vara Software/Wirecast_User_Titles.

The next time you launch Wirecast, the user titles will be available. Any media used by these templates must exist in the same template folder. For example, if user_scoreboard.png is used in one of the example templates, it must be located in the Wirecast_*User_Titles* directory.

Other Media

Any media used by these templates must exist in the same template folder. For example, if user_scoreboard.png is used in one of the example templates, it must be located in the Wirecast_*User_Titles* directory.

Editing XML Files

There is an XML file called description.xml which describes all of your titles. Edit it to add, create, or delete titles. Read the header of the XML file for a list of rules and descriptions. Backup the file before editing because syntax errors cause Wirecast not to parse the file.

Logos

Introduction

When you perform a broadcast, you may want to include a company logo in your presentation. There are two ways you can do this in Wirecast:

1. **Global Logo (logo is its own shot)** In this configuration, you create a shot which has only a logo in it. The benefit of this configuration is that you can show the logo independently of all other shots. For example, you can choose to always show the logo in a corner of your Live Broadcast display.

2. **Shot Logo (logo is part of another shot)** In this configuration, you add a logo to an existing shot. This is useful if you want to have a shot to use in the start of your broadcast.

Topics

- *Global Logos*
- *Shot Logos*

Global Logos

Logos are only displayed through shots. Wirecast treats logos the same as any other static media. To create a new empty shot and add your logo to it, follow these steps:

1. On Layer 2 in the Main Shot window, open the Add Shot menu.

Open Add
Shot menu
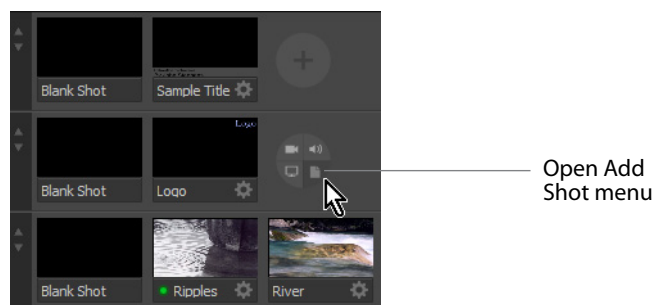
2. When the Add Shot menu displays, Select *Add New Shot.*

Select Add New Shot
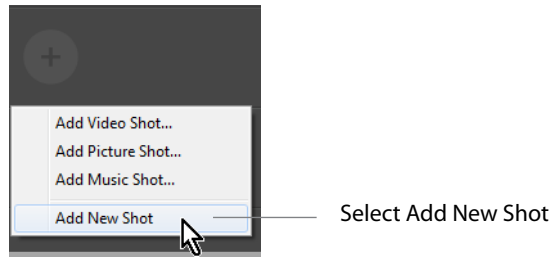
3. When the New Shot displays, double-click it to edit it.

Double-click New Shot
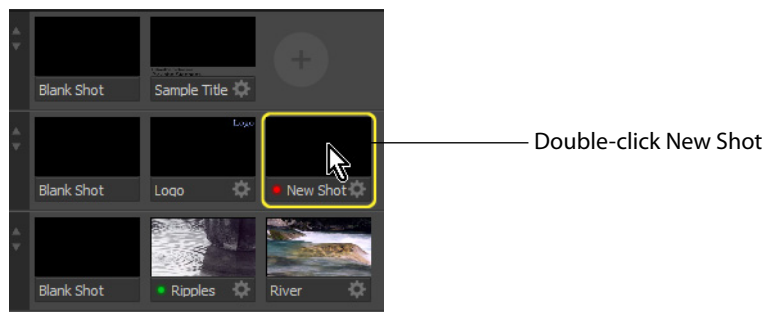
4. When the Template window displays, select *Fullscreen View* and click *Apply.*

Select Fullscreen View

Click Apply
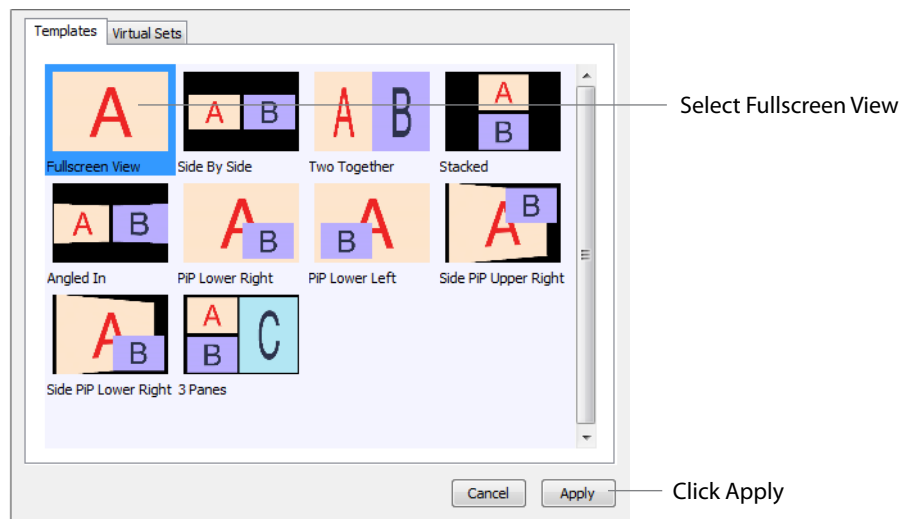
5. Click the *Show Shots* icon and select the logo image to display it in the Shot Preview window:

Click Show Shots icon
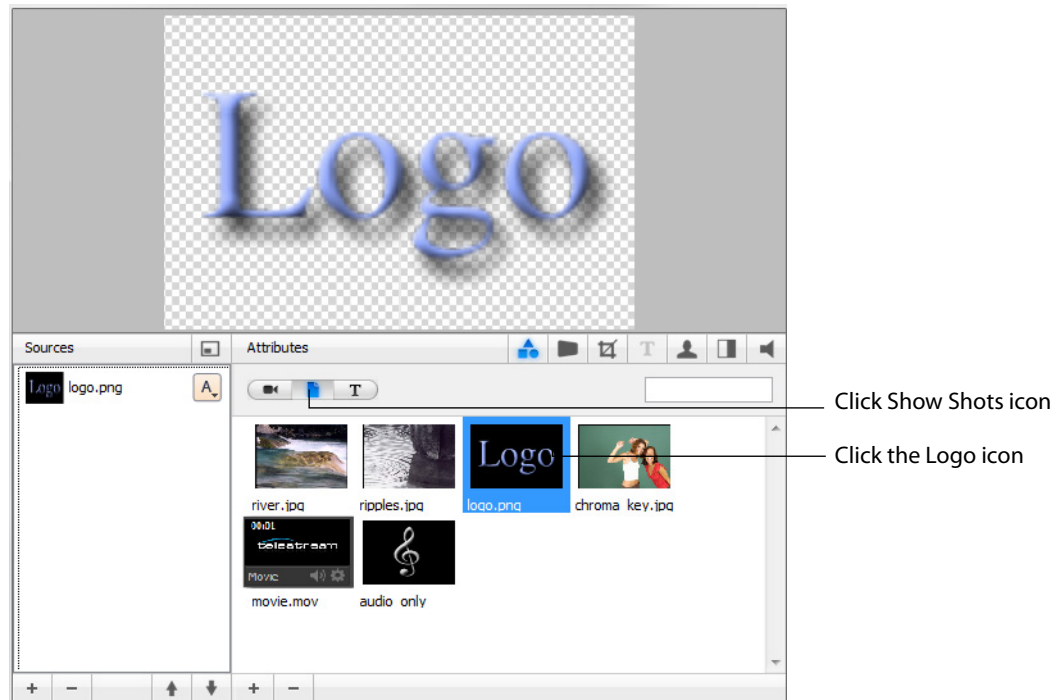
Click the Logo icon

6. Alternatively, you can click the Add (+) button, select *Add Picture* from the dropdown menu, then select the image you want to use.

Click *Add button*

Select *Add Picture*
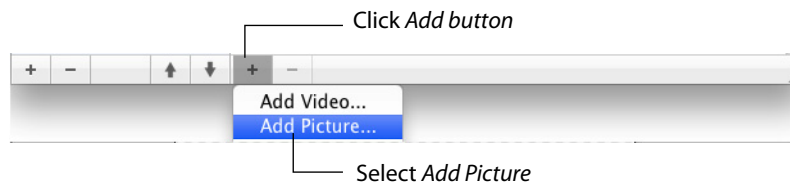
7. To resize the logo, make sure the logo shot source is selected, click on the logo in the preview window while pressing the Command key, and drag to resize the logo image.

Select the logo source

Click while pressing
Command and drag
to resize logo
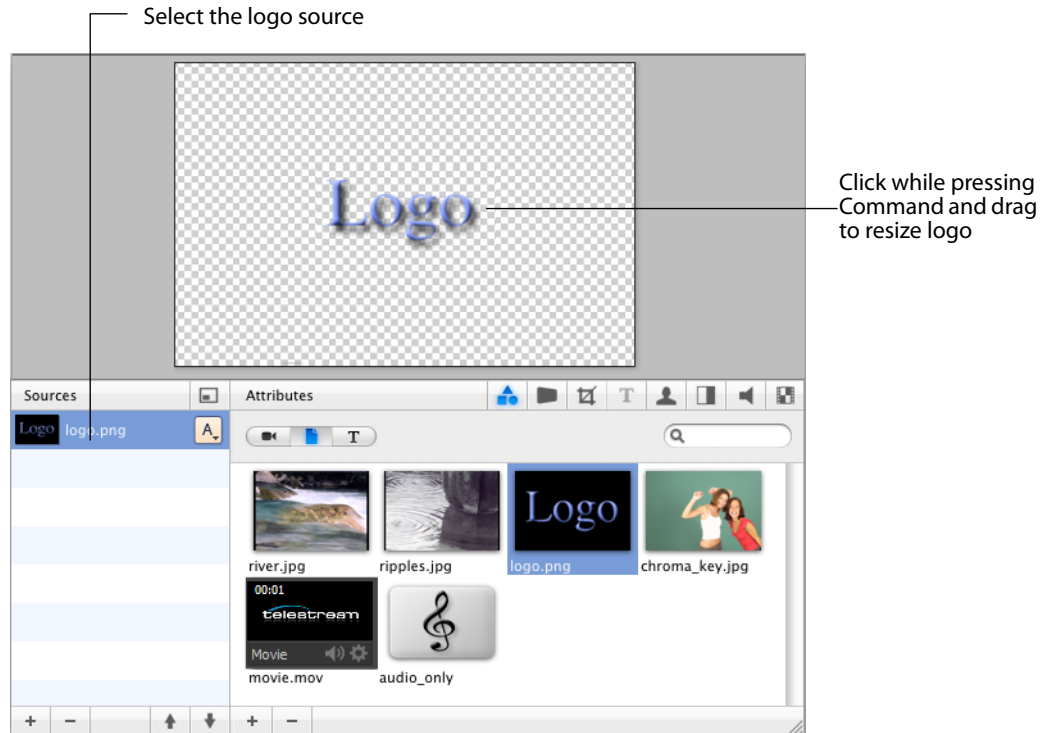
8. To reposition the Logo, click the *Position* button in the Attributes Toolbar and click
   one of the positioning arrows:
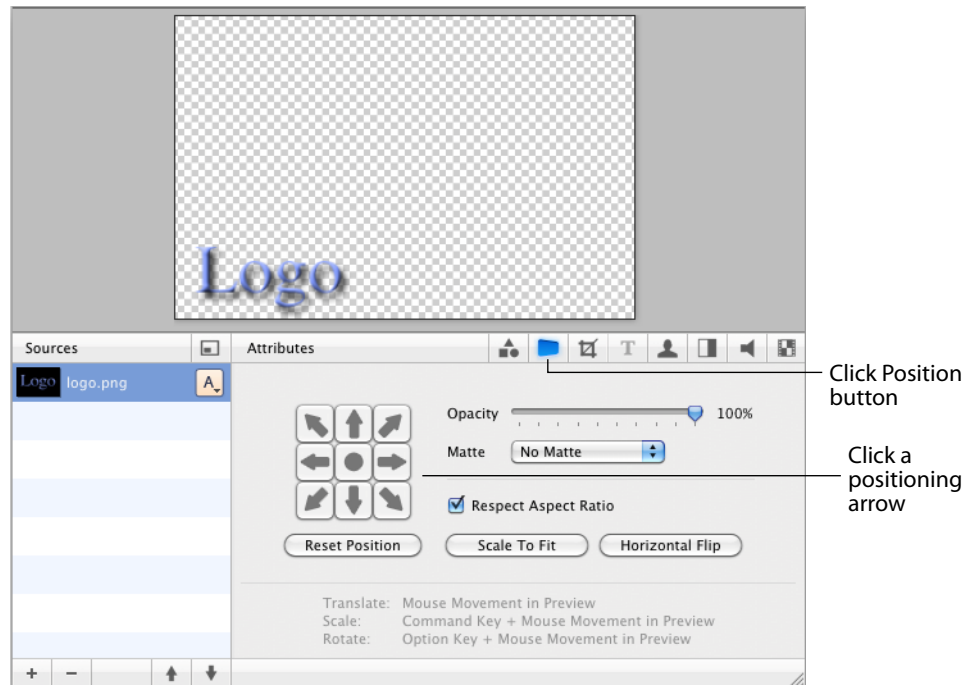
The logo can also be moved, resized, and rotated using these controls:

- **To Move:** Click and drag object to a new location.
- **To Resize (maintaining aspect ratio):** Hold the Command key down while moving the mouse vertically.
- **To Resize (independent of the aspect ratio):** Hold the Command key and the Shift key down while moving the mouse vertically and horizontally. The Respect Aspect Ratio checkbox in the configuration area must be unchecked.
- **To Rotate:** Hold down the Option key while moving the mouse vertically and horizontally.

9. To add your Logo to the broadcast, close the Shot Edit window, and click New Shot in Layer 2.
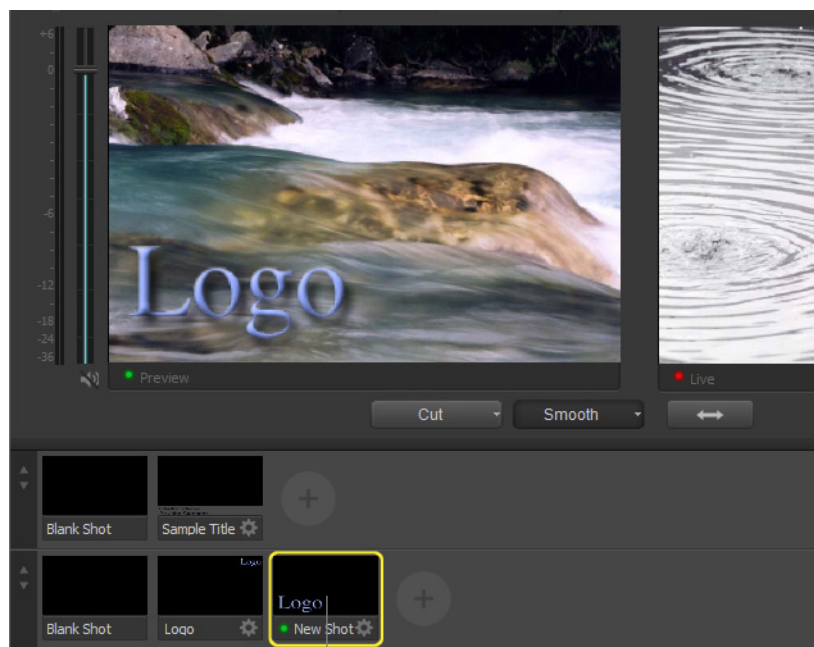
Click New Shot

10. Click the Ripples shot in Layer 3. Notice that changing shots does not affect the Logo you put on Layer 2, but it does change the background image.

Logo
remains   Image changed

Click Ripples
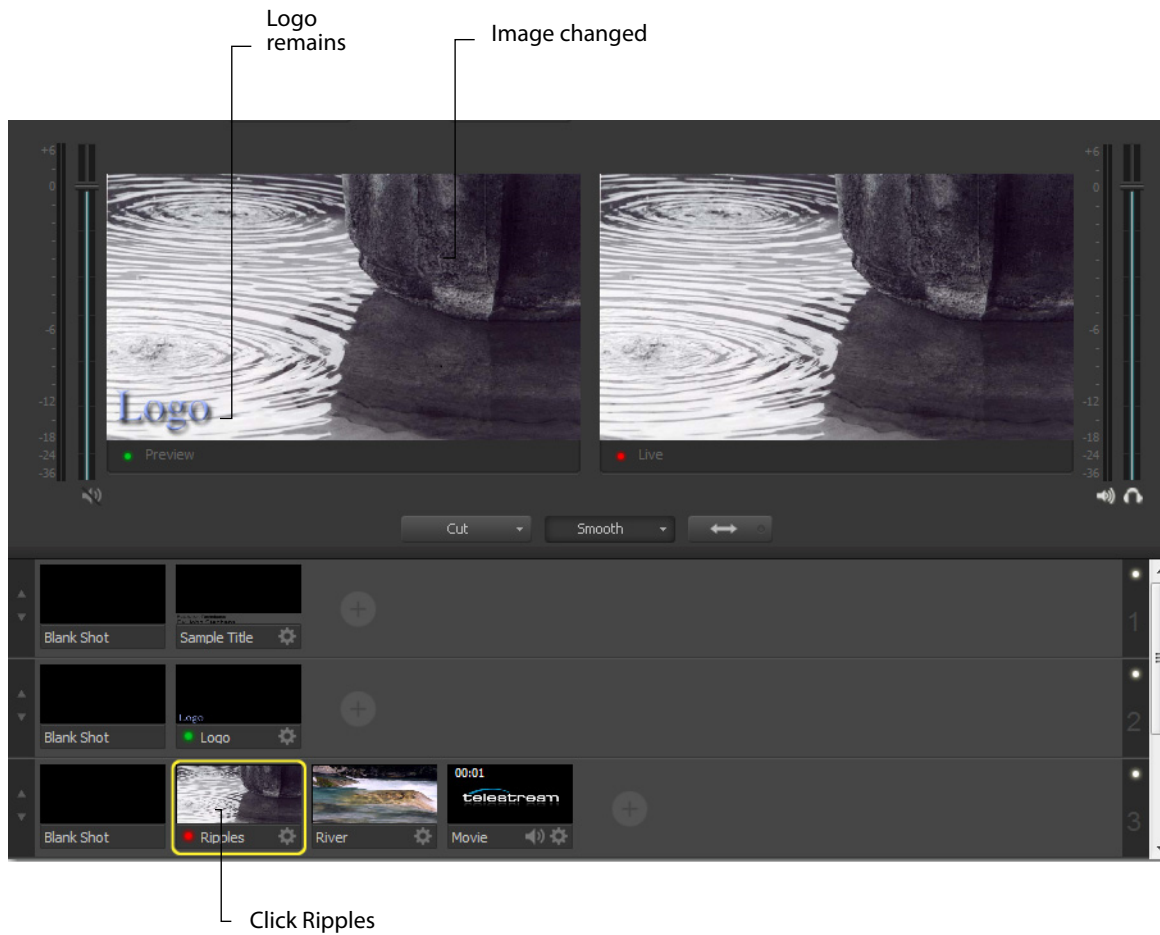
Turning Layers On and Off

One way that you can use Wirecast is to turn layers on and off. For example, Layer 2 can be turned off and then back on by clicking its white LED on the far right side. This is an effective way to have a logo ready to display.

Logo removed
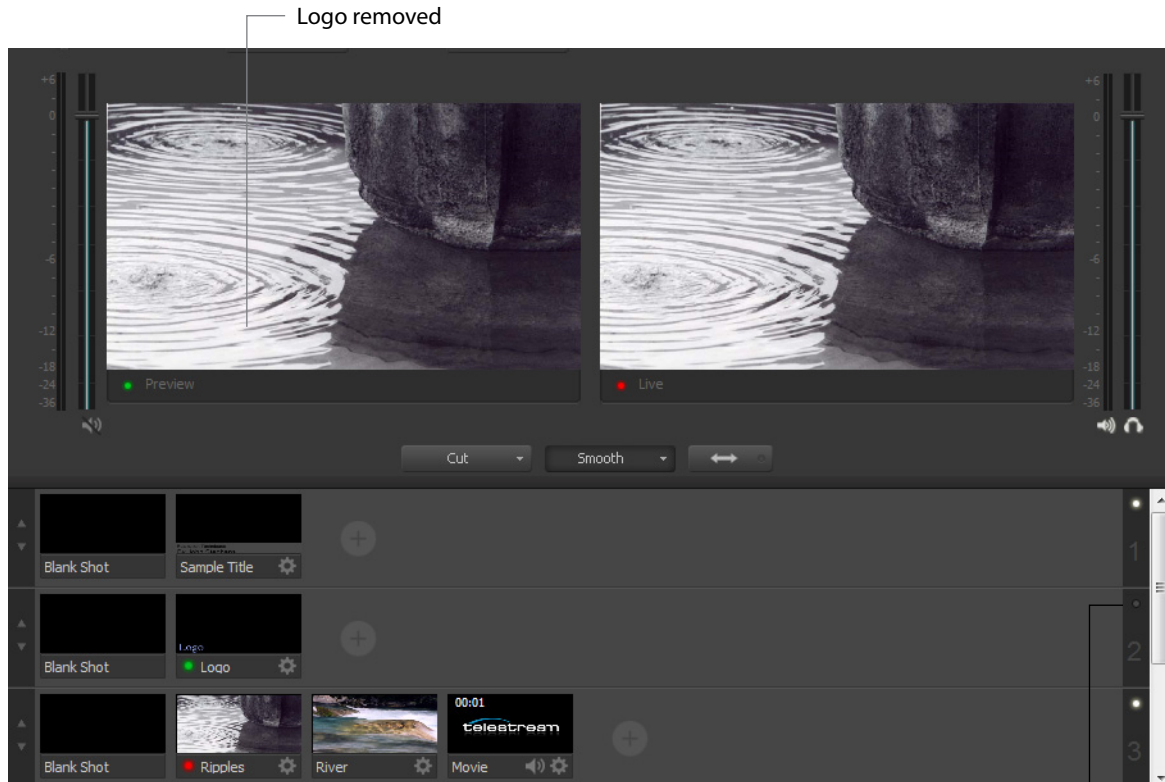
Turn off Layer 2 LED

Shot Logos

You can also create a shot with the logo embedded in it. To do this, follow these steps:

1. Double click a shot to open it in the Shot Editor.
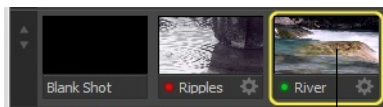
Double-click a shot

2. Click the *Add Source* button to add a new source:

Click Add Source
button
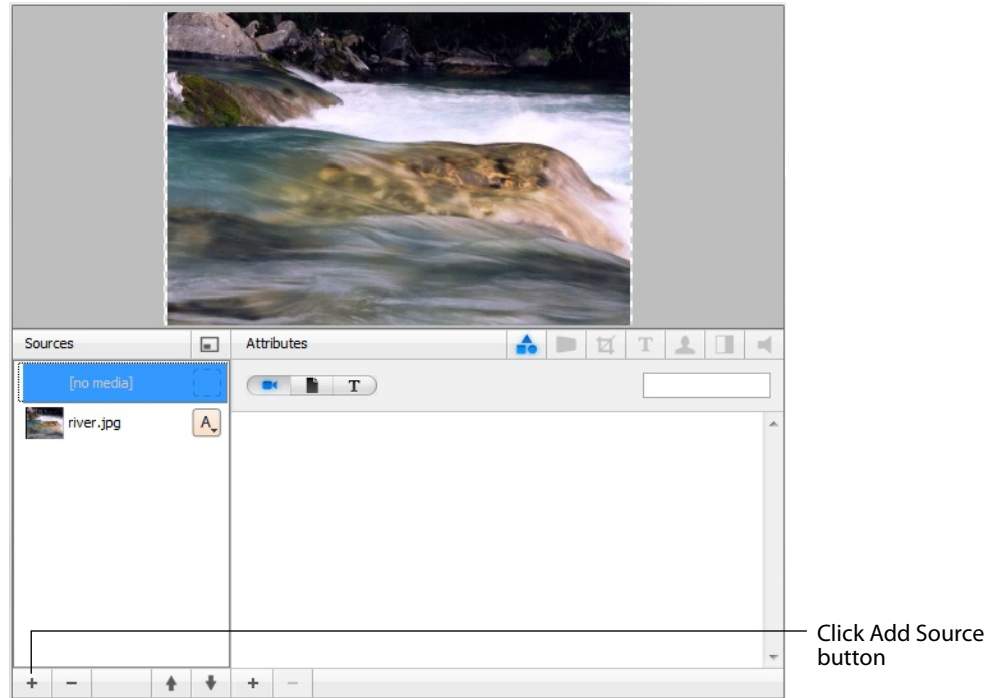
3. To add your logo click the *Add Shot* button then click the logo icon:

Click the Add
Shot button

Click logo icon
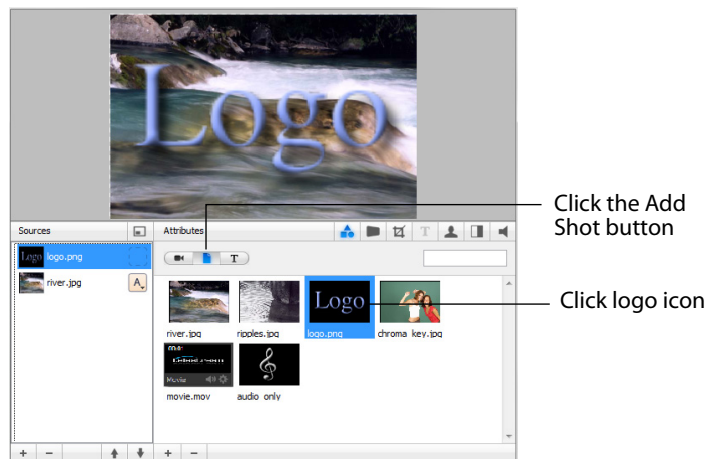
4. Most likely, you will not want to display the logo in the middle of the display. To re-position it, click the *Configure Visual effects* icon to display the positioning controls.

The nine repositioning controls move the logo to the top, bottom, side, corner, or middle of the display:

Click the Configure Visual Effects icon

Repositioning controls
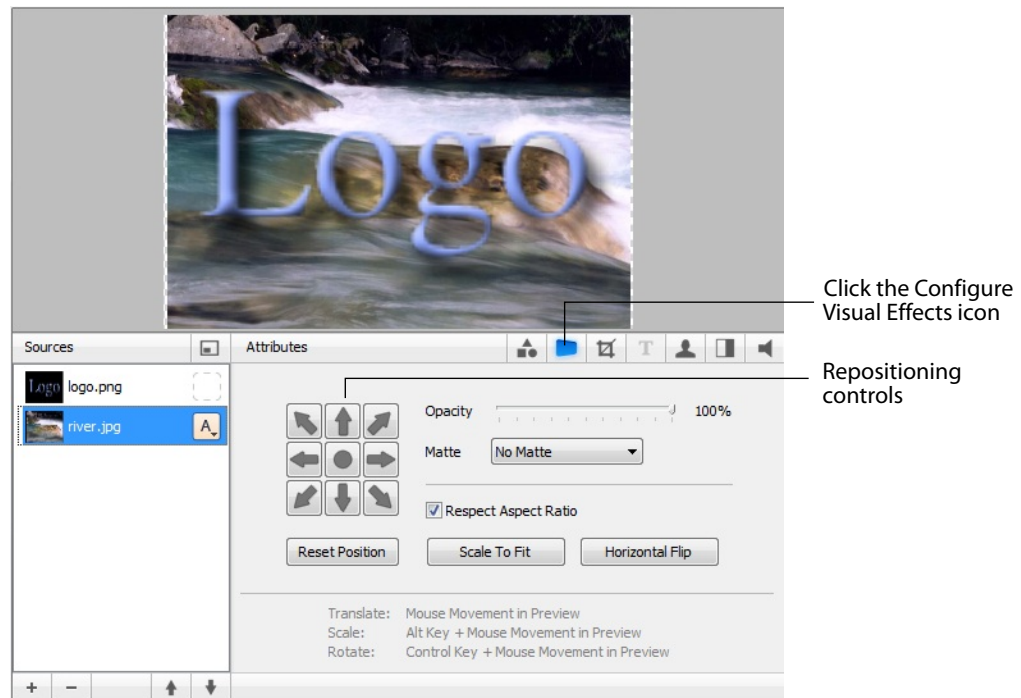
You can also reposition the logo using the mouse:

- **Move Media** Click and drag using the mouse in the Preview area.

- **Resize Media (Respect Aspect)** Hold the Command key while moving the mouse in the Preview area.

- **Resize Media** Turn off Respect Aspect Ratio. Hold the Shift-Command keys while moving the mouse in the Preview area.

- **Rotate Media** Hold the Option key while moving the mouse in the Preview area. Select between shots in the Main window.

5. To change the size of the logo, select the logo source then hold the Command key while moving the mouse over the logo in the Preview area. To move the logo to the lower-left corner, click the lower-left arrow button.

Select logo source

Hold the Command key while moving the mouse

Repositioning controls
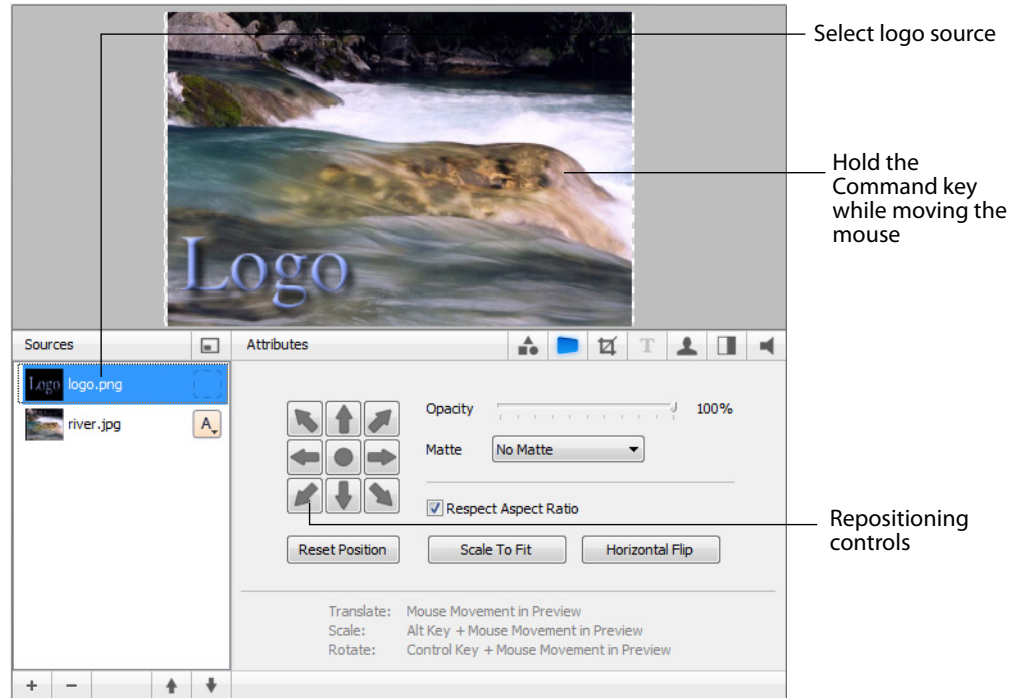
Close the edit window. Notice that the River shot now has the logo embedded in it.

Shot Editor

Introduction

STUDIO

The Shot Editor is used to view a shot, edit it, or create a new one. This section describes how to use the Shot Editor.

Topics

- *Overview*
- *Shot Editor Layout*
- *Sources*
- *Shot Editor Preview*
- *Shot Editor Media Panel*
- *Shot Editor Effects*
- *Shot Editor Cropping*
- *Shot Editor Chroma Key*
- *Shot Editor Motion*
- *Shot Editor Playback*
- *Shot Editor Filter*

Overview

To edit a shot, double-click it or right-click and select *Edit Shot*.
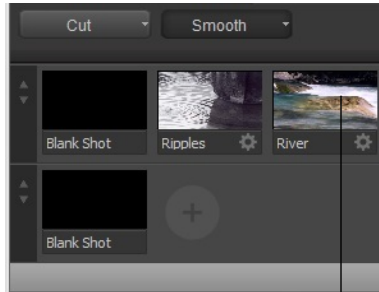
Double-click or right-click
and select Edit Shot

The Inspector

You can also edit a shot using the Inspector. The Inspector is opened by selecting Inspector from the Window menu.

When the Inspector opens, if the shot you want to edit is not displayed (or no shot is displayed), single-click a shot in the Main window shot list to open one. The Inspector immediately displays the shot so you can edit it.

Activating Changes

Wirecast always displays your visual changes in the preview panel. However, your changes only become Live when you specifically click Go (or press the Command+G keys).

Note: The exception to this occurs in the Playback Panel where you can specifically make your changes become live.

The AutoLive feature does not apply when using the Shot Editor.

Inspector vs. Editor

A shot can be edited in two ways: You can double-click on the shot and open an editor specifically for that shot, or you can open the Inspector window and then click the shot you want to edit. Both windows display the same set of controls. The only difference is that the Editor window displays a specific shot and the Inspector window displays all the shots that can be edited. Additionally, you can display and edit shots in both the Shot Editor and the Inspector at the same time.

If no shot is currently selected, Inspector buttons and other GUI elements are not functional. To select a shot for editing, single-click a shot in the Shot List panel at the bottom of the Main window.

Shot Editor Layout

The Shot Editor is comprised of four major sections: Preview Area, Source List, Attributes Toolbar, and the Attributes Editor Panel.
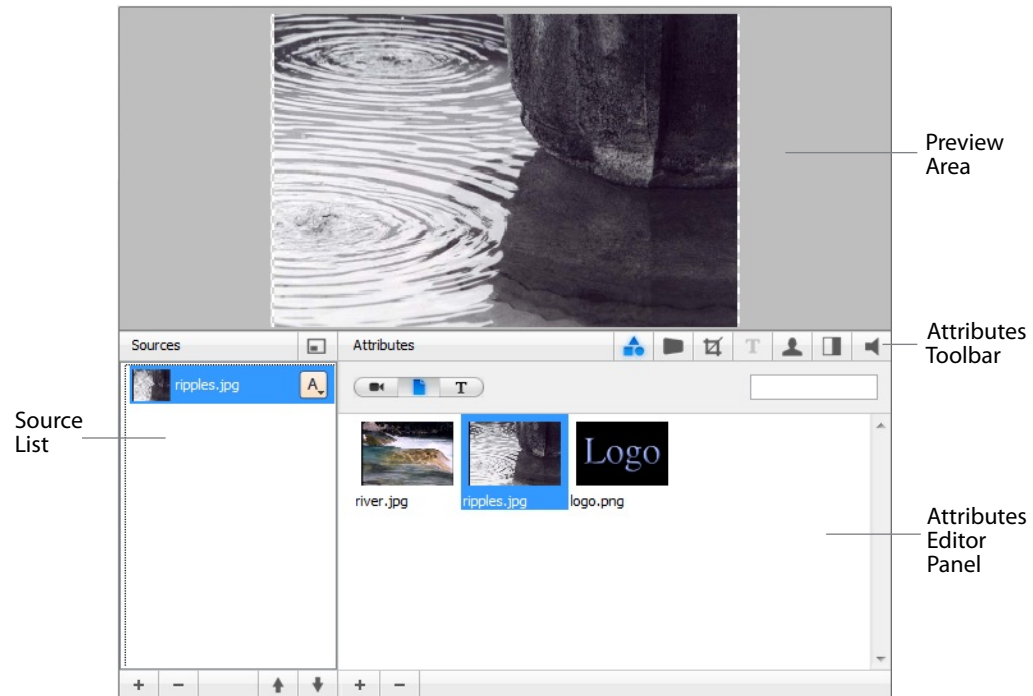
The preview area displays a preview of how the shot looks. As you edit a shot by changing its attributes, visual changes are displayed in the Preview area.

The Source List is a list of sources (live sources, images, and title banners) currently in the shot. Wirecast enables you to put up to seven sources in each shot. You add and delete sources by clicking the plus (+) and minus (-) icons in the toolbar at the bottom of the Source List. Click a source in the list to edit it. Sources are layered in the shot, from top to bottom on the list. You can reorder sources using the up and down arrows in the toolbar below the list, or right-click the source and select Move Up or Move Down. (See *Sources*.)

The Attributes Editor Panel displays each of the configuration panels. At the top is an Attributes Toolbar for configuring each category of attributes. To view or edit a given attribute category, click the appropriate icon in the Attribute Toolbar. The attributes change depending on the type of source (live source, graphics, audio, etc.) currently selected.

Sources

Sources are specific resources made available to Wirecast that include configuration settings. These sources can be titles, live camera feeds, graphics, etc., and they are incorporated into shots used in a broadcast. You can place up to seven sources in a shot, where they are placed as layers that reside in front or in back of each other.

Templates

Wirecast also provides pre-built source sets, called templates, which you can add to your source list. Templates are pre-defined configurations used for displaying the sources of a shot. The templates contain place holders, labeled A, B, and C, that define where the sources in a shot are located. For example, you can select a two-source template that displays one element in full-screen and another, superimposed in the bottom left corner. When a different template is selected for the shot, the sources stay the same but their locations are redefined.

Templates provide an easy way to add several sources to a shot, all pre-arranged and organized in popular scale, angle, and position patterns (left/right, stacked, superimposed, etc.). Some templates have a single place-holder, some have two, and still others have three.

To add a set of template-based sources to your shot, click the Add Presets button to the right of the Sources List title.
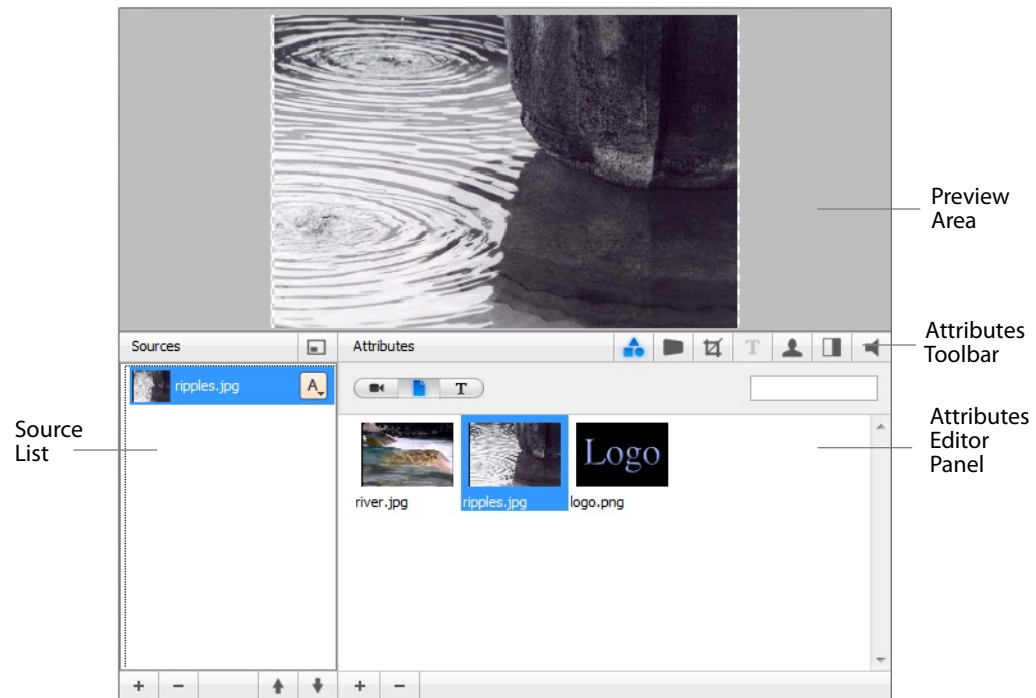
Wirecast displays a Template window with two tabs: Templates and Virtual Sets. Click the Templates tab and select the template you want to use, then click Apply.

Select Angled In

Click Apply
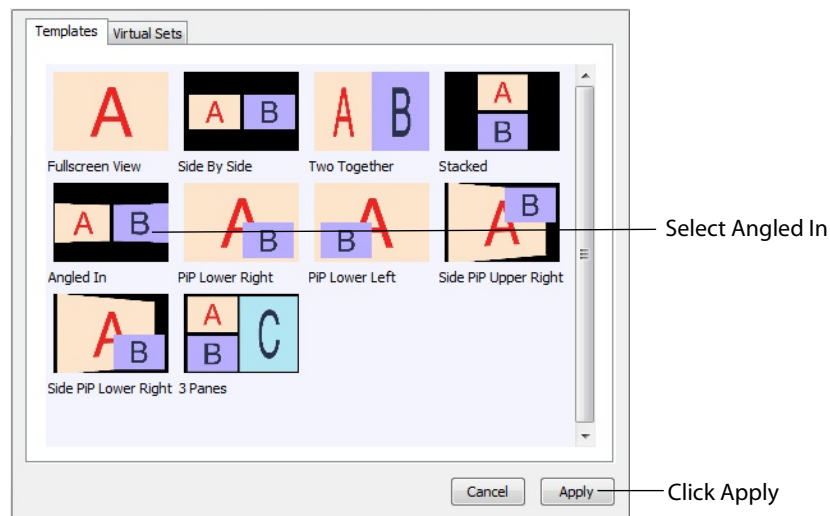
The Preview has changed in the Shot Editor window, and now shows the Ripples image on the Left side. This is because the template selected has an A and a B portion to it. Two different sources can be assigned to A and B:

Sources in Wirecast can be assigned either A, B or C in the Source Layers list. To change the assignment, click the A (or B or C) icon and make a selection. This makes choosing a new template much simpler because Wirecast automatically positions the correct sources on screen.

For example, to change the media for the source that is identified as B, select the source identified as B, then click the River icon in the Configuration area. Your Preview should now look like this:

Click the B source

Click the River icon
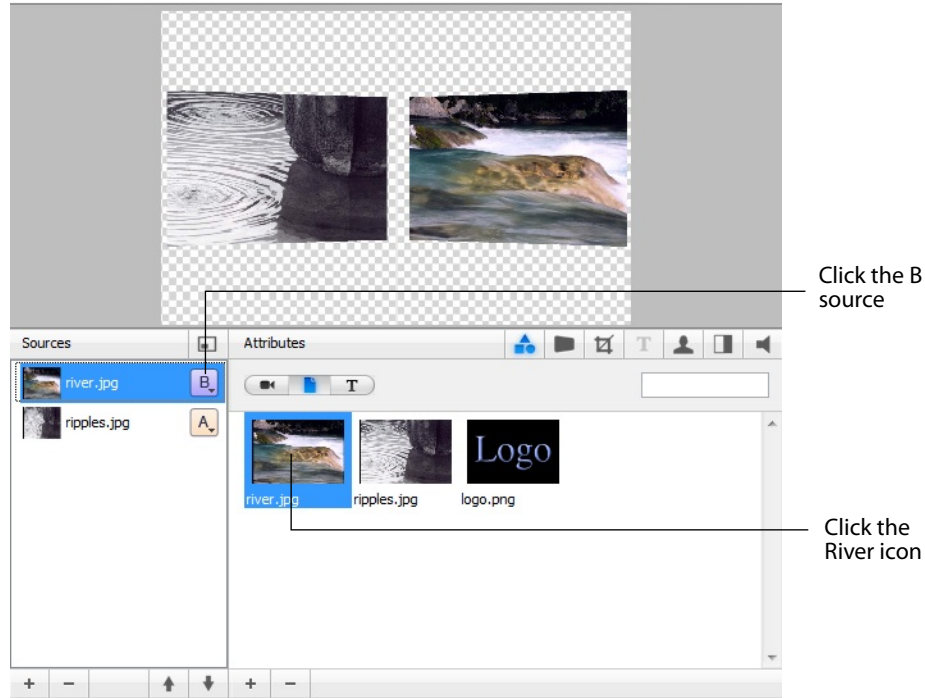
Virtual Sets

PRO

In Wirecast Pro, you can also add pre-built source sets complete with graphics to simulate a news-anchor desk. These sets are appropriately called virtual sets which can be added to your source list. Virtual sets are predefined sources with graphics, available in various configurations. For example, you can select a two-source virtual set that displays three layers of decor (overhead lighting, a curved desk and a pillared background) with two live sources.

Virtual sets provide you with an easy way to create a professional looking scene with one or more live feed sources superimposed on it. These virtual sets can be used as they are, or they can be edited to suit your needs.

To add a virtual set to your shot, click the *Add Presets* button to the right of the Sources list title.

Click Add Presets button

In the Template Chooser window, select the *Virtual Sets* tab, then click the virtual set you want to use. Click *Apply* to display it in the Shot Editor preview area.
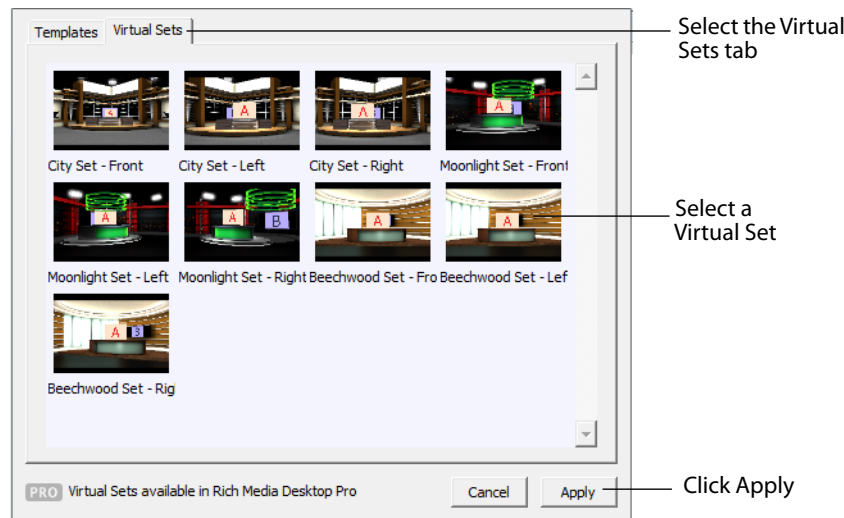
Select a source by clicking on the name of the source in the list.
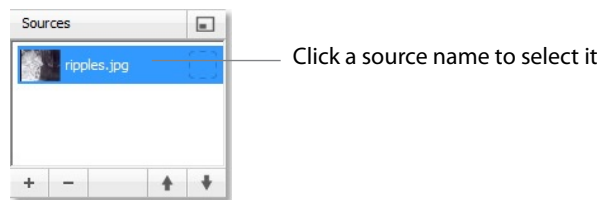
Controlling Source Visibility

The condition of the icon to the left of each source name controls its visibility. You can hide or display sources in a shot by clicking its icon. When a source is hidden a red X is displayed over the icon.

For example, if your shot has a title, you can turn the title off by clicking once on the icon to display the red X. All of your title data still stays within the shot, but it is just not shown. To turn the title it back on, click the icon again and the red X disappears. This can be a powerful way to use Wirecast by pre-loading your shots with titles and then turn them on and off during your broadcast.

Note: The first time you select a source, its visibility is turned on (Wirecast assumes if you are clicking on it, you want to display it).

Shot Editor Preview

The Preview area displays, in real time, the changes you make to the static video sources in your shot. However, temporal features (fade-in, audio playback, etc.) are not

portrayed in this still shot. You can also click and drag a source displayed in the Preview area, to reposition it.

If you add a Virtual Set, the Preview area displays a zoom slider directly below the preview window. This enables you to adjust all of the layers in the virtual set, to zoom in on the set for a a close up or pull back for a wide-angle view.
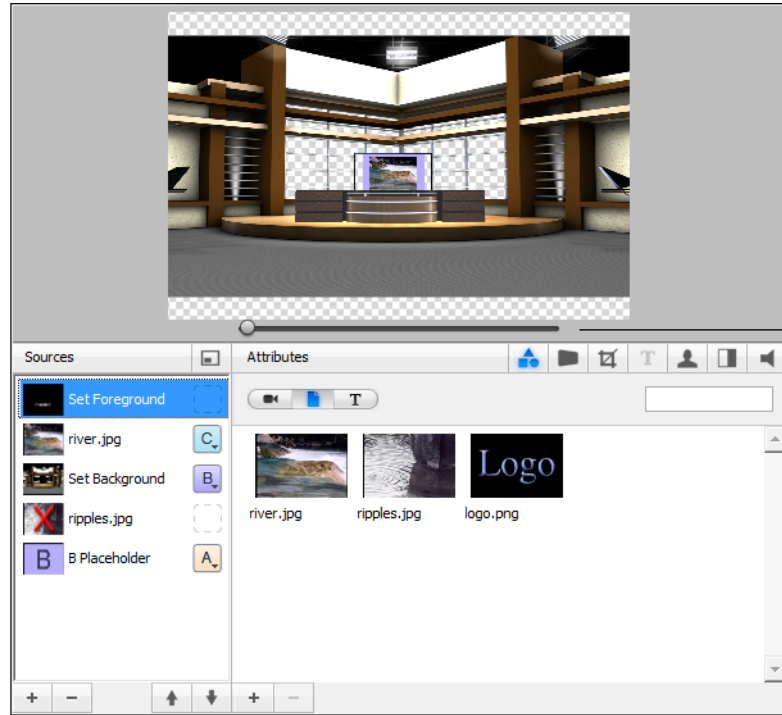
Zoom slider

Shot Editor Media Panel

The Shot Editor Media Panel provides a library of your shots, enabling you to easily assign media to a given source. You can assign three types of media to a source: Live Feeds, Media Files, and Title Banners. The Media Panel displays each category separately, making it easier to categorize and identify your media.

Live Feeds button

Media Files button

Title Banners button
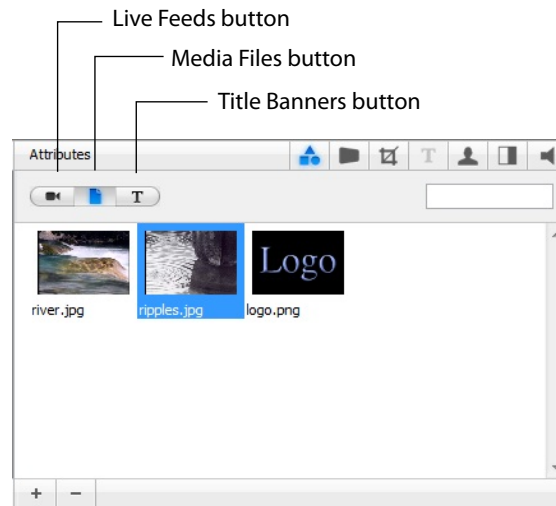
Live Feed Sources

Click the Movie Camera button (camera icon) to display, manage, and select your Live Feed sources. Live feeds also include the devices built into your computer: microphone, Built-in Inputs, and any iSight camera.

To add a live feed to a selected source, follow these steps:

1. Click the movie camera icon in the media panel.
2. Click the Plus (+) icon at the bottom of the media panel and select the system device you want to use for input. Wirecast adds it to the list.
3. Click the configure button (2nd button from right in the toolbar) to configure the device as needed.
4. Click the change media button (far left in the toolbar).
5. Click the Plus (+) icon at the bottom of the media panel, and select Show Source Settings to view and configure source settings.
6. In the Source Settings panel, select the device to display and change settings as needed.
7. Click Apply to save settings and close the Source Settings window.

PRO

In Wirecast Pro, you can add other system devices, including a Scoreboard, and Web streams.

Media File Sources

Click the Media Files button (document icon) to display, manage, and select your file-based media sources. Media files include: video and audio files, video-only files, audio-only files, and raster images (TIFF, JPEG, PNG, etc.). Media files are created outside of Wirecast using media editing tools, then are added to the media list for easy access during broadcasting.

To add media files that you have created (or acquired) to a selected source, follow these steps:

1. Click the Media Files button (document icon) in the media panel.
2. Click the Plus (+) icon at the bottom, and navigate to and select the file you want to add. Wirecast adds this file to the list.
3. Configure it as needed.

Title Banner Sources

Click the Title Banner button (T icon) to display and select a title banner source. Wirecast provides a comprehensive library of one to four line title banners from which you can choose. Title banners are graphic files with text fields that display information you provide. You can not add your own banner files.

To add a title banner to a selected source, follow these steps:

1. Click the Title Banner button (T icon) in the media panel toolbar.
2. Click the Plus (+) icon at the bottom of the media panel and select the title banner file you want to use to title this shot. Wirecast adds this title to the list.
3. Configure the title as needed by entering the text strings for each title line using the Text Attributes tool (4th button from left in the toolbar).

Shot Editor Effects

The Effects Panel enables you to adjust the location of sources and configure opacity, matte, aspect ratio, and scaling as needed. To open the Effects Panel, click the Configure button (2nd button in the toolbar).

Clicking the position buttons (arrows) enables you to quickly change the position of the media in the preview display.
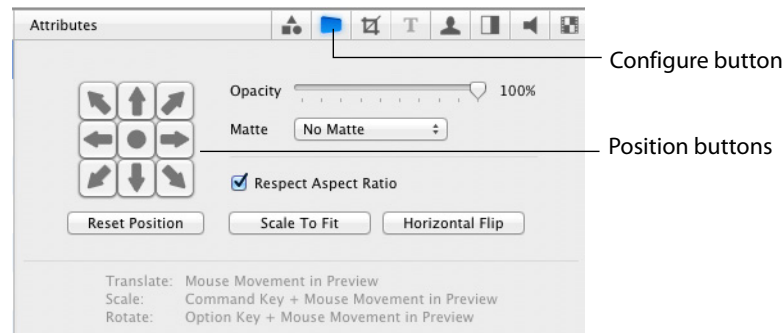
You can also reposition a title using the mouse:

- **To Move Media** Click and drag using the mouse in the Preview area.

- **Resize Respect Aspect** Hold the Command key while moving the mouse in the Preview area.

- **Resize Media** Turn off Respect Aspect Ratio. Hold the Shift-Command keys while moving the mouse in the Preview area.

- **Rotate Media** Hold the Option key while moving the mouse in the Preview area. Select between shots in the Main window

Opacity

The opacity control is a slider bar on the Effects Panel. Opacity controls how much you can see through the media. As an object becomes less opaque, it becomes more transparent

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Note: If you want to turn off the media altogether, do not set opacity to zero since this still uses CPU cycles. Instead, you should turn off the visibility of the source.

Opacity control
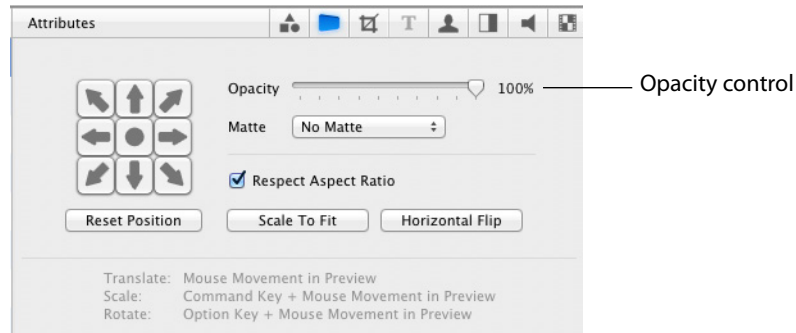
Matte

A matte is an image that is used to define the opacity of another piece of media. Wirecast comes with several mattes, which are listed in the Matte drop-down menu. Any image in your shot list which has an Alpha Channel also shows up in the Matte menu. (See *Images/Opacity* for more information on Alpha Channel.)
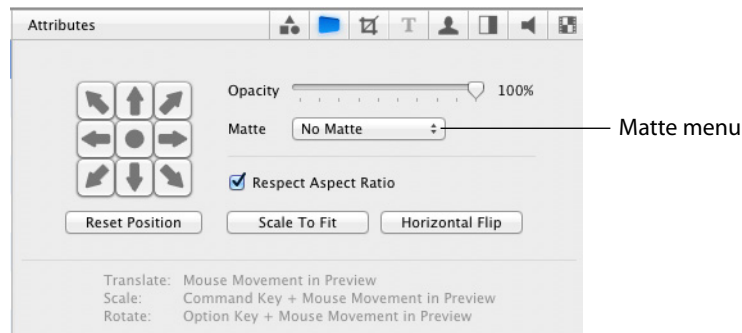
Matte menu

Aspect Ratio

The Respect Aspect Ratio is located under the Matte menu on the Effects Panel. When checked, the source retains its aspect ratio when its size is changed. Some sources do not allow you to set this option.
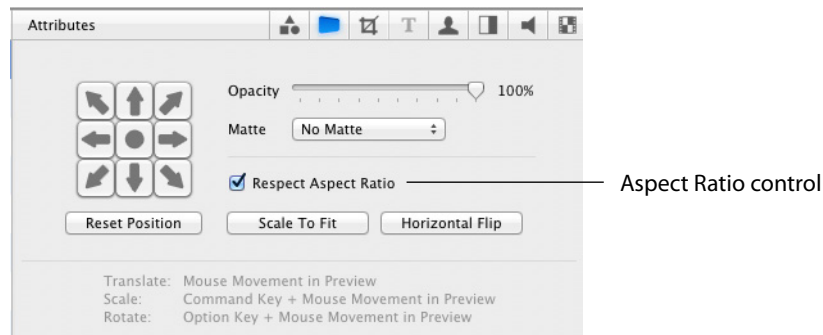
Reposition Buttons

The are three repositioning buttons on the Effects Panel: Reset Position, Scale To Fit, and Horizontal Flip. Click the Reset Position button to reset the media to its original position, size, and rotation. Click Horizontal Flip to mirror the media along the vertical axis. Click *Scale to Fit* button to scale the media to fit inside the Live Broadcast window.
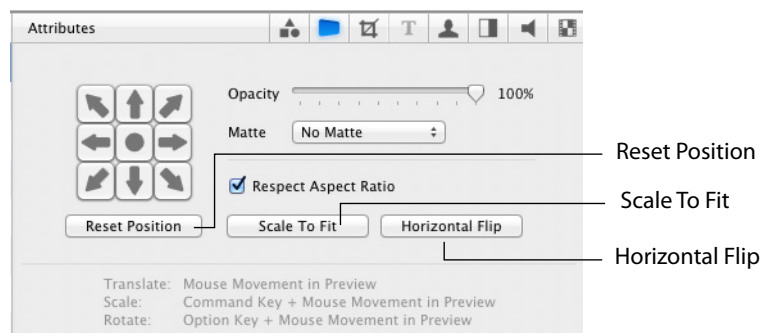
Shot Editor Cropping

The cropping control enables you to cut off unwanted portions of an image. To open the cropping control window, click the cropping control button. There are four sliders and four text boxes used to control cropping. Select an image, then slide the slider until the selected side of the image is cropped as needed. Notice that as the slider is moved, the value in the text box changes. This value is the number of pixels that have been cropped. You can also enter values directly.
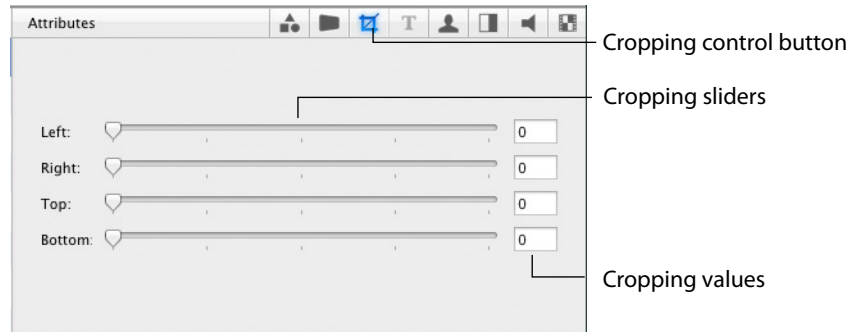
Shot Editor Chroma Key

Wirecast enables you to perform real-time Chroma Key operations on your sources during a broadcast. Chroma keying enables you to select a color and replace all occurrences of that color in an image with some other image. Click the Chroma Key button to open the Chroma Key controls. Click the Use Chroma Key checkbox to enable the controls. Use the sliders to set the Key Threshold, Black Clip, and White Clip. Click the Defaults button to restore all controls to their default state.
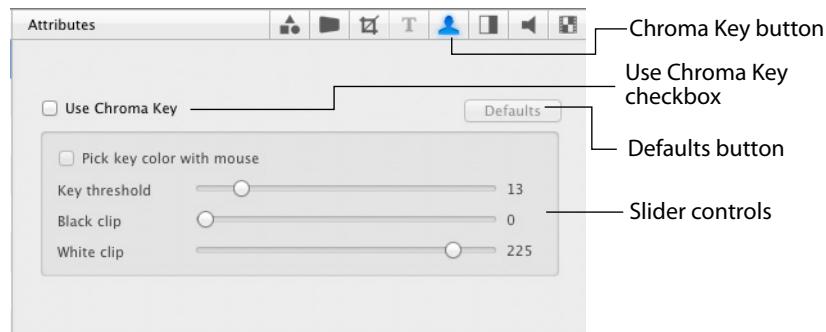
Working Top Down

The key color is the color of the background you want to drop out of the resulting media. The Chroma Key configuration panel is designed to work through the configuration as a process, from top to bottom, fine tuning your key as you go. It is important to not over-adjust any one control. A good key color is obtained by finding the right balance in the controls.

Selecting a Key Color

To get the best key possible, select the key color using the mouse. To do this check the Pick key color with mouse checkbox. Use the mouse to click a point on the image in the preview area. As you do this watch the preview change in level of transparency, displaying the gray/white checkerboard pattern on the affected regions. Usually, clicking near the corners of the media provides the best key, but sometimes clicking near the main subject in the image is best.

Key Threshold

Once you have the best key by picking the color, you can adjust the key threshold to drop out the background as completely as possible. The Key Threshold parameter enables Wirecast to determine how close the color in the video is to the key color. Adjust the key threshold (0 to 100) by using the slider.

Black Clip

Sometimes, dark areas are keyed out, when they should not be, due to how digital cameras function. The Black Clip parameter controls how close the keying is toward black. For example, if the host has black hair, you need to increase this value slightly so that the keying effect is not seen in his hair. Adjust the Black Clip (0 to 100) by using the slider.

White Clip

Likewise, white areas are also sometimes keyed out when they should not be. The White Clip parameter controls how close the keying is toward white. For example, if the host has a white shirt on, you need to increase this value slightly so that the keying effect is not seen in his shirt. Adjust the White Clip (0 to 100) by using the slider.

Getting a Good Key

Probably the most important part of getting a good key is getting good source material. Poor source material generates poor keys; no algorithm can make up for this.

Lighting

Assuming you have a reasonably good camera, the most important part of getting a good key is good lighting. Invest in good lights and learn how to set them up properly. Here are some basics:

- The background screen (green or blue) needs to be independently lit from other items in the shot.
- Light the background screen evenly, with no shadows. The more evenly lit, the better the keying.

- Light people evenly with no shadows. A fill light is very important. An office white board may be helpful in accomplishing this.

Good Camera

You should get reasonable quality out of most cameras on the market today. Wirecast has been tested with a low-end DV camera to verify the quality of its Chroma Keying system. However, the better the camera the better the keying.

If you use a cheap USB Web-cam, it may not give you enough source quality to get a reasonably good key. But if you have excellent lighting, an iSight camera works well. 3CCD is better than 1CCD. If you have the choice, a PAL camera is better than NTSC, due to how data is captured internally.

High Quality Video

If you are keying video from disk and not capturing it live, make sure the High Quality Video option is checked in the Advanced Preferences Panel. This forces Wirecast to decode the video from disk in the best quality possible, giving the Chroma Key the best data possible for keying. Wirecast warns you if High Quality Video is turned off when you turn on Chroma Keying.
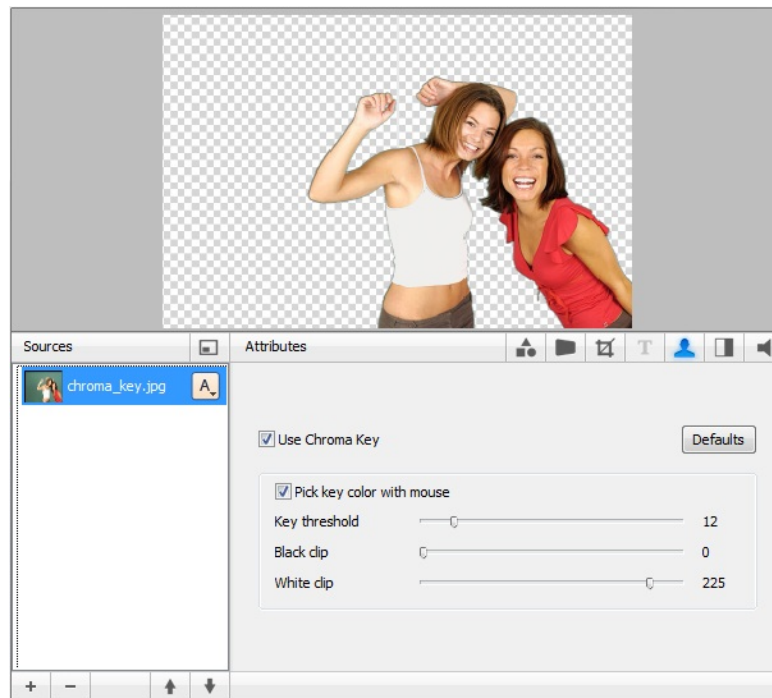
Shot Editor Motion

The Motion Panel provides control over how objects (image, movie, title, etc.) are added or removed in the Live Broadcast window. To open the Motion Panel, click the Motion Panel button in the Toolbar. Wirecast only performs motion during a Smooth transition. If you are using any other transition, the motion settings are ignored.

There are two types of motion. When an object is added to your broadcast it is called Build In; When it is removed it is called Build Out.
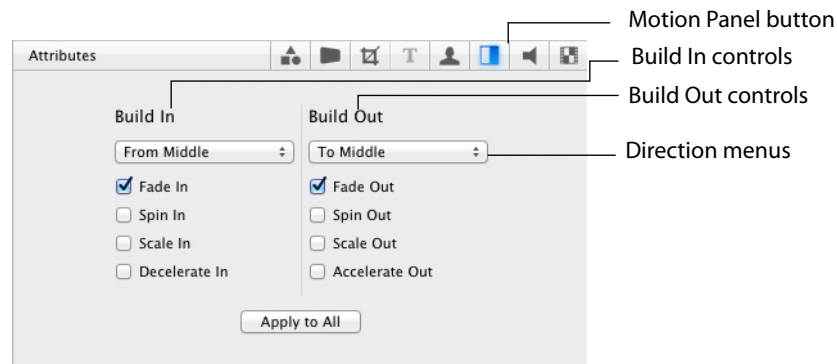
Motion only occurs when an object enters or leaves the Live Broadcast window. For example, if you have two shots, each with a foreground and the media in the foreground is the same, then a Smooth transition is performed between the foregrounds. However, no motion is performed. Or, if a logo is positioned in the top left corner in an existing shot, and it is in the bottom right corner in a new shot, when you make the new shot Live the logo smoothly transitions from the top left corner to the bottom right corner. But the Build In and Build Out settings are ignored.

However, if you have two shots with a Foreground, but the media in each is different, the Build Out is performed for the existing shot, and the Build In is performed for the new shot.

Direction Menus These provide selections of where the Build In comes from (top, bottom, right, etc.) when it is added, and where the Build Out goes when it is removed.

Fade In / Fade Out Checking these checkboxes causes an object to be added or removed gradually. If unchecked, the object is instantly added or removed, much like a cut transition.

Spin In / Spin Out Checking these checkboxes causes an object to be added or removed in a spinning fashion.

Scale In / Scale Out Checking these checkboxes causes an object to be added or removed in a scaled fashion.

Decelerate In / Accelerate Out Checking these checkboxes causes all of the above actions to be performed at a slower or faster rate.

Apply To All Click this button to make the Motion Settings the same for all sources in a shot. This is useful if you want to make all of your motion the same for all of the elements in the shot.

Shot Editor Playback

The Playback Panel enables you to control how movies and music play in Wirecast. To open the Playback Panel, click the Playback Panel button.

Playback Panel button
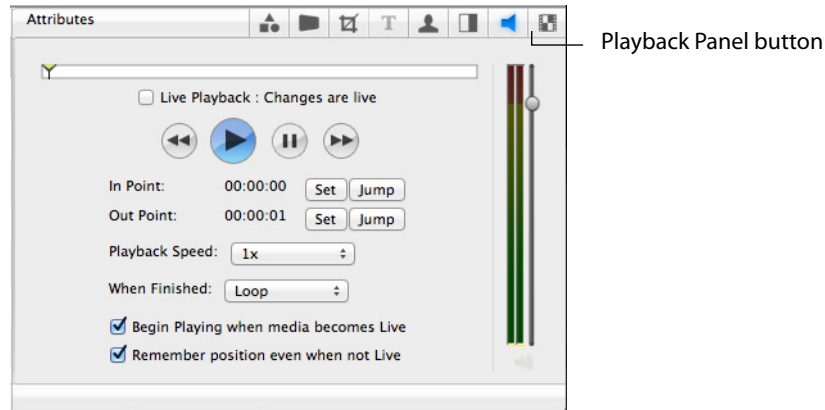
Check the Live Playback checkbox to cause your changes to be taken live in your broadcast. The four control buttons enable you to rewind, play, pause, or fast forward. In Point & Out Point sets the start and stop points in the media.

Select a playback speed for your shot. The audio is muted for any speed other than normal.

Select what to do when the media is finished (loop, hold, or remove) from the drop-down menu. Check the Begin Playing checkbox to cause the media to automatically start playing when it becomes live. Check the Remember Position checkbox to cause the media to remember its position when it is not live.

The vertical slider sets the audio level and the two meters display it in stereo (left and right). Click the Master Audio Mute icon to mute the audio of your broadcast. Click it again to un-mute it.

The Playback Panel only allows modification of parameters on media for which the options are possible. For example, if your media has no audio, then the audio controls are not active. Or, if your media is a still image, you are not able to set an In Point or Out Point nor play the image.

The Playback Panel setup information is saved separately for each shot, so if a media is used in two different shots, the media settings are different in each shot.

Live Playback

Live Playback is a part of the Playback settings. By default, changes in the Playback Panel are like any other changes in the Shot Editor, they do not take effect until you click the Go button. However, there are times when you may want to scrub (slowly scroll and view) the video and see the scrubbing in the Live Broadcast window.

☑ Live Playback : Changes are live

Check the Live Playback checkbox to cause changes you make in the Playback Panel to become live. This gives you immediate control over the movie or audio in your broadcast.

Note: If you want to pause all movies in your broadcast, you can select *Pause All Movies* from the Media menu. This is particularly useful if you only have just one movie and you want to quickly pause it.

Scrubbing

The Scrubbing slider enables you scrub (scan) back and forth through your media. The triangle icon in the scrubbing slider is called the playhead.

Click and drag this triangle (playhead) left and right to view any location in your media. The primary use of scrubbing is to set the In Point and Out Point in your media. If Live Playback is checked, and the shot you are editing is live, then the scrubbing is also seen in your broadcast.

Playhead (triangle icon)
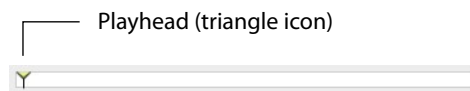
Transport Controls

The Transport controls enable you to Rewind, Play, Pause, and Fast Forward. If Live Playback is checked, any changes you make using these controls are seen in your broadcast.

Rewind

Play

Pause

Fast Forward
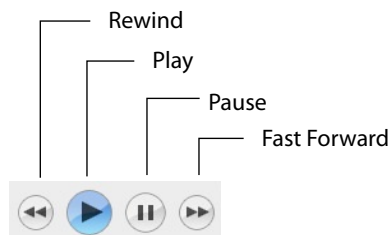
In and Out Points

The In Point and Out Point controls are a part of the Playback settings. The In Point is the position in the media where playback starts. For example, if you set the In Point of a movie to 2 seconds, when the movie starts to play (or loops back to the start), it starts from the 2 second point in the movie. The Out Point is the position in the media where playback ends. if you set the Out Point of a movie to 5 minutes, when the movie reaches the 5 minute mark, it stops playing (or loop back to the beginning, depending on which When Finished option you have selected).

To set the In Point, move the playhead to a place you want the media to start playing and click the first Set button. To set the Out Point, move the playhead to the place you want the media to stop playing and click the second Set button. Clicking a Jump button moves the playhead to the In Point or Out Point location.

In point and Out Point times
Set buttons
Jump buttons

| In Point: | 00:00:00 | Set | Jump |
| Out Point: | 00:00:01 | Set | Jump |
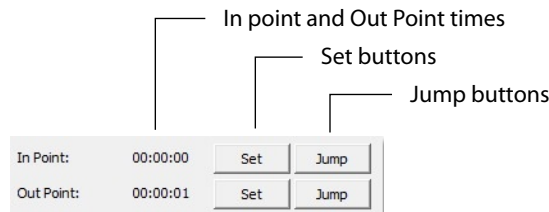
When Finished Control

The When Finished drop-down menu enables you to control what happens when the media finishes playing (when it reaches the Out Point).

You have three options:

- **Loop** The media loops back to the In Point.
- **Hold** The media stops and displays the last frame.
- **Remove** The media is removed from Live Broadcast Area. The remove function makes the media transparent after it is done playing. For example, if you are doing a live show with an intro video layered over your camera feed, when the intro video is finished it becomes transparent, leaving only the camera feed displayed.

Note: For media without video, the Hold and Remove are effectively the same option.

When Finished: Loop

Begin Playing Control

When checked, the Begin Playing checkbox causes the media to start playing when the shot becomes Live. Checked is the default.

☑ Begin Playing when media becomes Live

Remember Position Control

If the Remember Position checkbox is checked, when a live shot transitions to another shot with different media, the removed shot remembers the last position where the media was played. And so, if the removed shot becomes live again it starts playing from that remembered position. Checked is the default.

☑ Remember position even when not Live

Audio Controls

If a piece of media contains audio, the audio controls become activated. The audio in each media is independently controlled. The audio slider bar enables you to control the media audio level. Clicking the speaker icon mutes the audio of your media in the Live Broadcast. Clicking it again causes it to be heard. The stereo audio meters monitor the audio output level.

Audio meters

Audio slider

Speaker icon
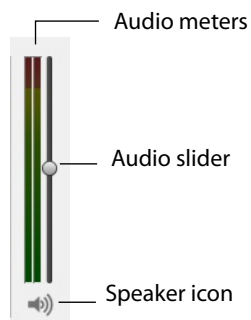
Shot Editor Filter

The Filter Panel is available when you are editing a shot and you have selected one of the following sources: Title, Foreground, Scene, or Background.

Note: Filters are only available for Macintosh OS X 10.4 (Tiger) or greater.

To add a filter, click the plus (+) button at the bottom of the Shot Edit window and select a filter from the drop-down menu. In the example below, the Color Controls filter has been added to change the colors in the shot.
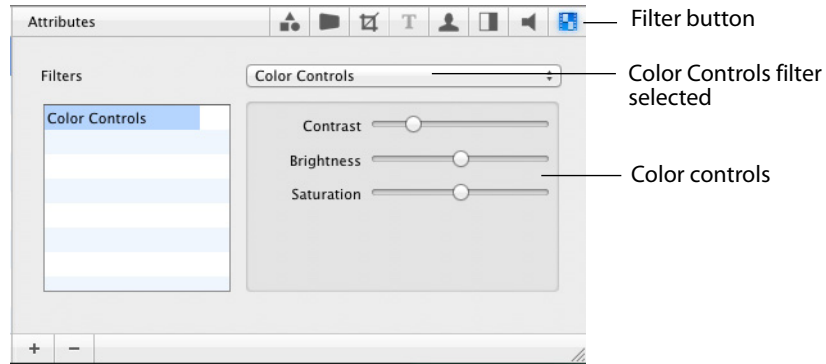
Modifying the Filter Parameters

A filter can have a large number of parameters. Therefore, it is beyond the scope of this user guide to describe all of the possible options a particular filter may provide. However, the parameters should be straightforward to configure, using the controls provided.

Here is an example of changing the contrast on the River image:
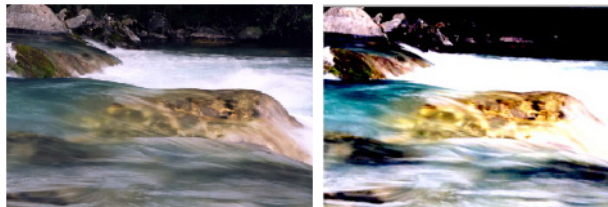
Source Settings

Introduction

These topics describe how to use the Source Settings editor.

Topics

- *Overview*
- *System Devices*
- *Scoreboards*
- *Teradek Cube*
- *Remote Desktop Presenter*
- *Local Desktop Presenter*
- *Wirecast Cam*
- *Web Stream*
- *Capture Cards*
- *Show USB Devices*

Overview

To open the Source Settings window, select *Sources > Show Source Settings*.

Note: Since some of the Source Menu items are plug-ins, the order of the items will not always be the same.

The Source Settings window is divided into four sections: System Devices, Preview Window, Configuration Area, and Button Bar:

- The System Devices displays all the devices detected by Wirecast (USB and FireWire devices, microphones, line inputs, Webcams, etc.). Sources used are selected from this list.

- The Preview Window provides a preview of the video coming from a selected source.

- The Configuration Area is for configuring sources. When a source is selected from the System Devices list, the configuration options for that source are displayed.

- The Button Bar contains two buttons. Click the plus (+) button to manually add new sources. Click the minus (-) button to remove them.
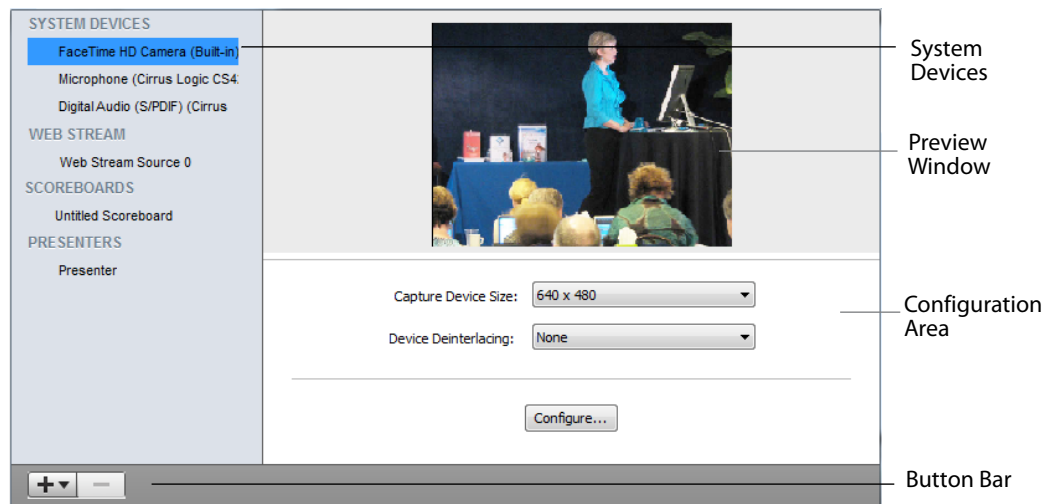
Note: De-interlacing has been moved from System Preferences (where it was a global setting) to the Source Settings, where it is individually controlled by each device.

System Devices

System devices include Firewire devices, USB cameras, and other USB devices. Click on a device to select it. Two drop-down menus and a configuration button are displayed. The *Capture Device Size* menu selects the device resolution from 160x120 to 1920x1080, depending on the camera. The Device Deinterlacing menu selects either None or Blend. None turns off deinterlacing enabling the video to interlace normally. Blend

turns deinterlacing on enabling the video to avoid interlacing problems during motion. Click Configure to configure the selected device.

Select a device

Select resolution

Click to configure device
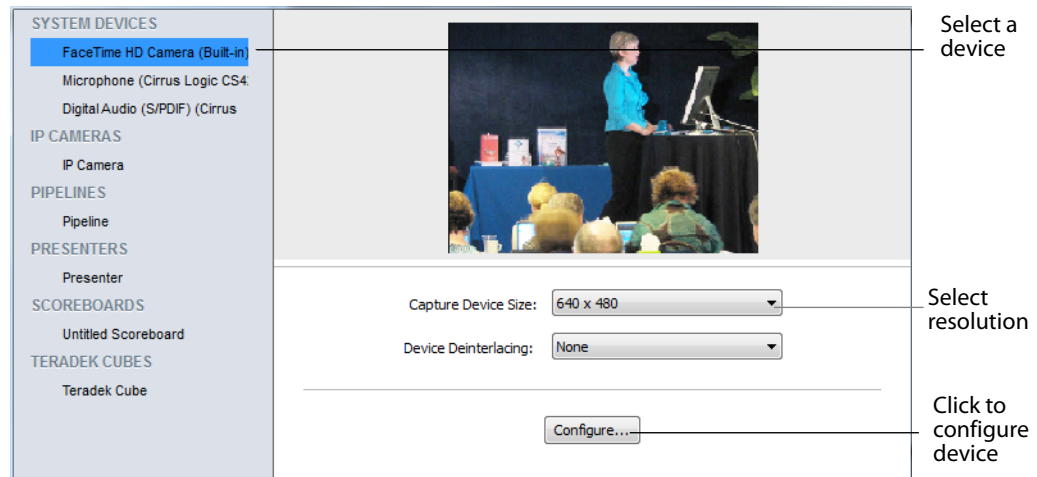
When you click *Configure*, a properties window displays with two tabs. The *Video Proc Amp* tab enables you to set the video display properties. The *Camera Control* tab enables you to set camera image properties. Any properties that do not apply to the selected camera are grayed-out.
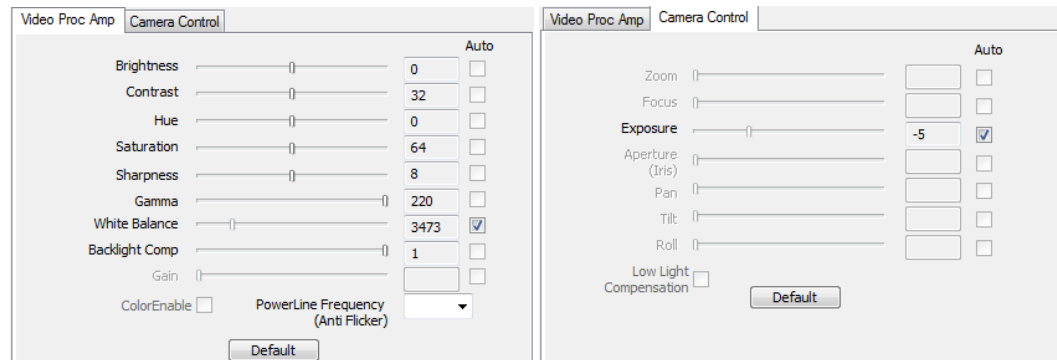
Scoreboards

PRO

Scoreboards allow you to add a scoreboard graphic to your broadcast that can be dynamically updated. To add a new scoreboard, select New Scoreboard from the Sources menu. Multiple scoreboards can be added.

When a scoreboard is opened in the Source Settings editor, it displays a preview of the scoreboard, two drop-down menus, and two configuration tabs.
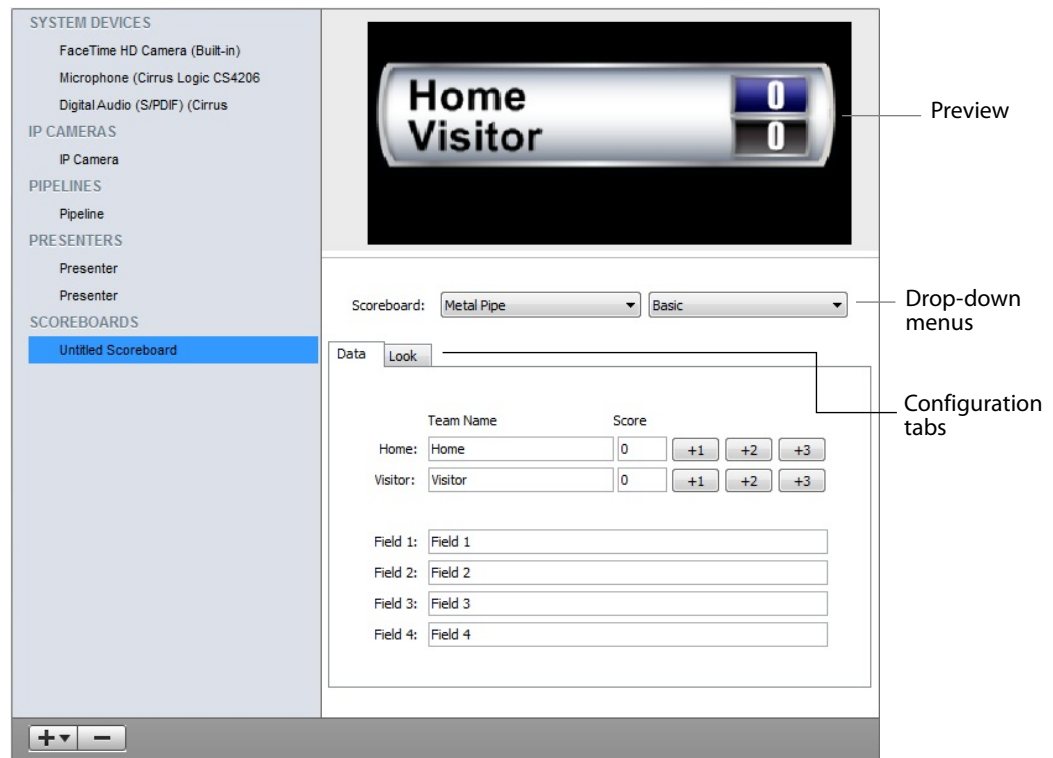
Unlike most other elements in Wirecast, changes to the Scoreboard go live instantly without requiring a transition. Once the scoreboard is live, the preview image is exactly as it is seen in your broadcast.

Of the two drop-down menus, the first selects the style of the scoreboard (Pipe, Shade, Corner, Wide, etc.) and the second selects the scoreboard layout (Basic, Top, Bottom, etc.). Some layouts change the number of fields surrounding the scoreboard, allowing additional live information to be added.

There are four hotkeys associated with the Scoreboard.

=	Increments Home score
-	Decrements Home score
]	Increments Visitor score
[	Decrements Visitor score

In order for these hotkeys to be active, the scoreboard must be displayed in the Live window and the Wirecast main window must be in focus (selected as the active Windows window).

The Data Tab

The Data tab configures the information displayed inside your scoreboard. The first two lines of data hold the name and score of each team. Before broadcasting, you should enter the names of each team here. While the broadcast is live, click the "+1", "+2" and "+3" buttons to modify the score.

There are also four information fields (Field 1 through 4). Each field controls a line of text inside the scoreboard that can be seen using the various layout types.

Note: Because Wirecast updates the scoreboards dynamically, It is recommended that you fill in the additional information fields while using a layout that hides them. Then, change to a layout that reveals those fields when ready, otherwise your viewers see you typing in those fields live.
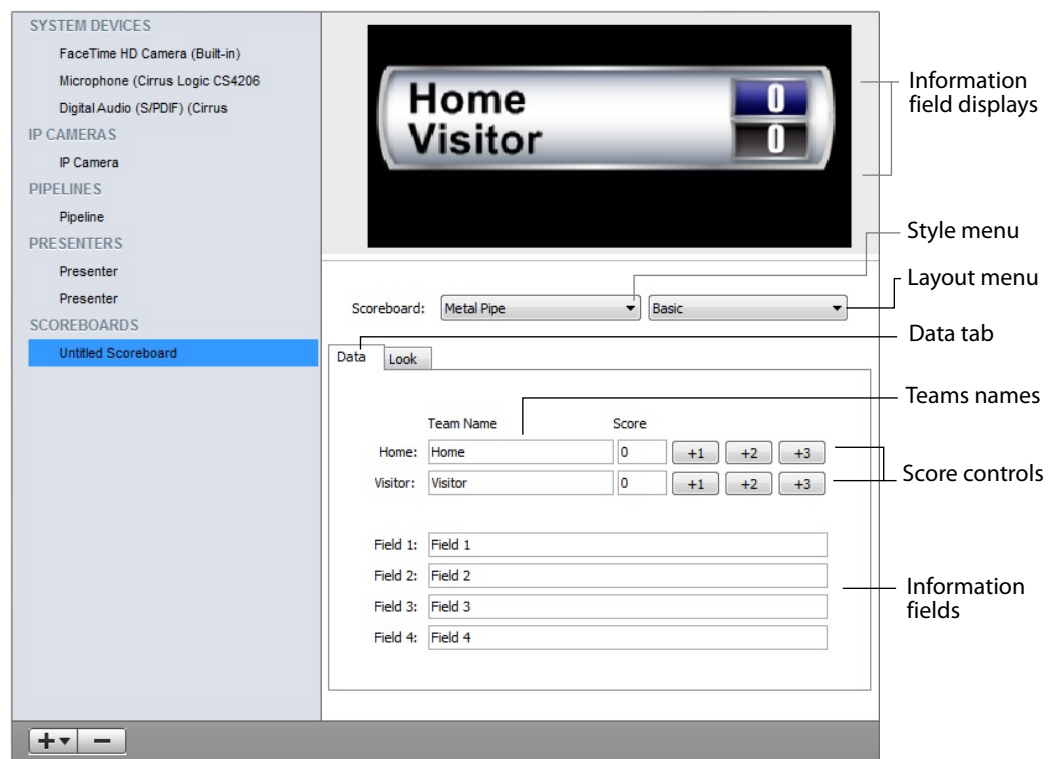
The Look Tab

The Look tab controls the visual elements of your scoreboard. In the Name Options column, there are three buttons for each field. These buttons enable you to change the text alignment, font style and text color respectively. The Score Options (on the right side) provide the same three adjustments to the score.

Some scoreboard styles also allow you to change the background colors of the Home and Visitor fields, to make them match their team color. This option, when displayed, is located between Name Options and Score Options.

You can also choose a custom image as the background of your Scoreboard. To do this check *Use Custom Image*. When you do, the Choose button is enabled. Click *Choose* and navigate to your custom background and select it.
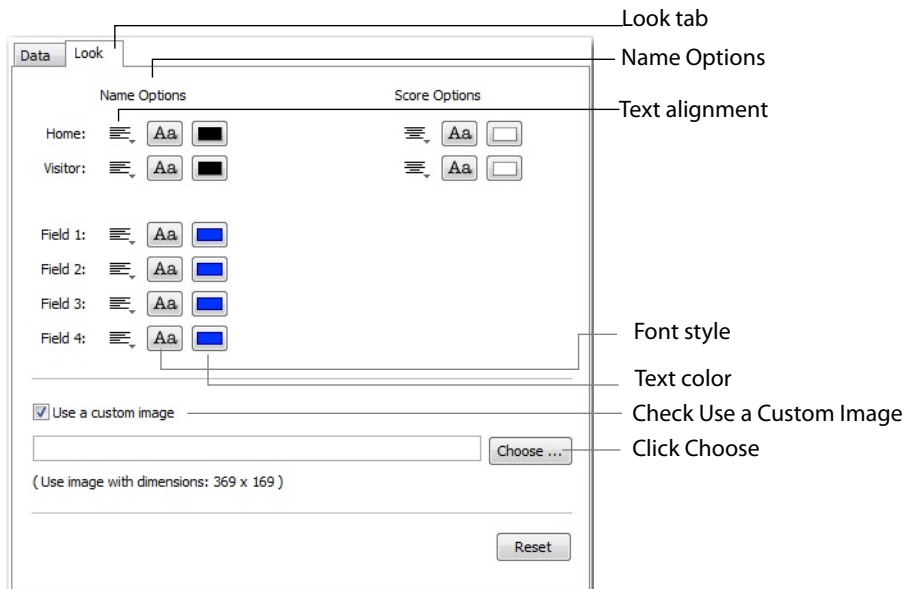
Teradek Cube

You can download the Teradek plugin from: *http://www.teradek.com/pages/downloads*. On the download page, select *StreamReader Plugin for Wirecast.*
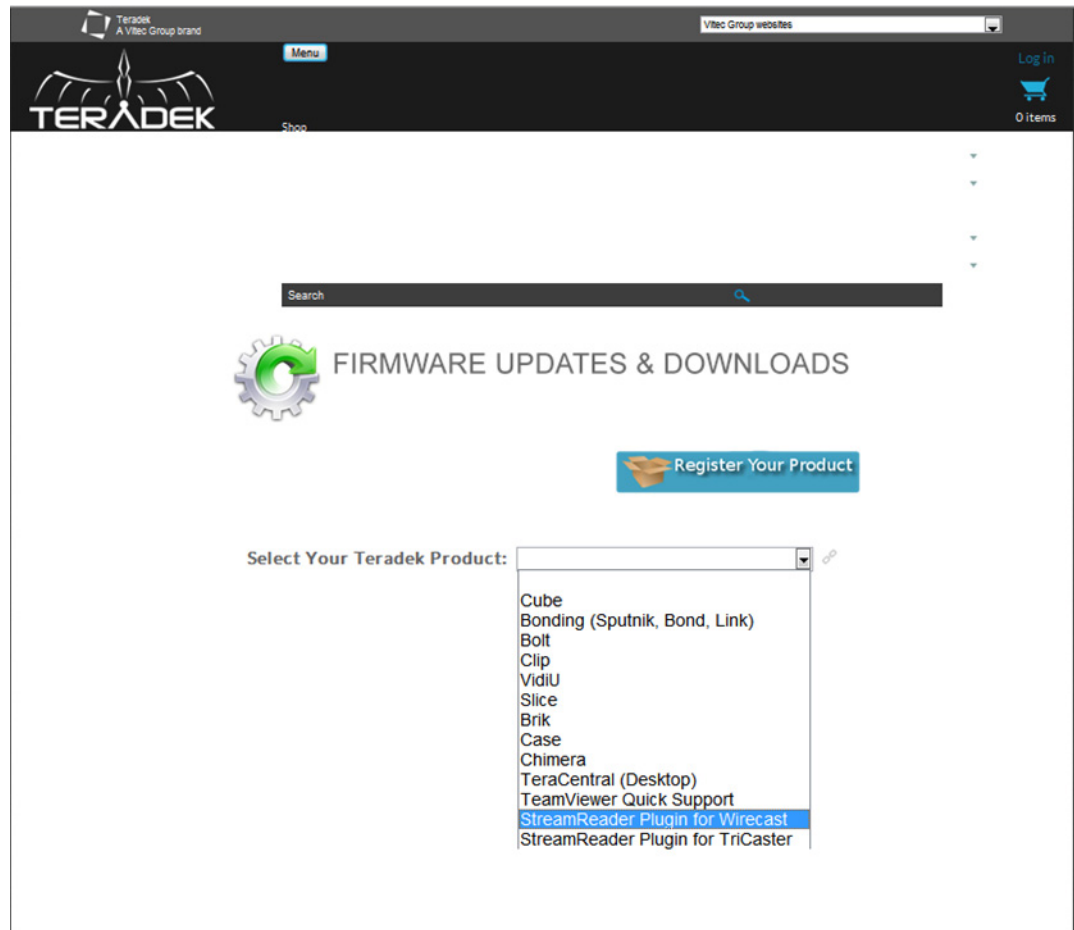
STUDIO

Remote Desktop Presenter

The Remote Desktop Presenter (RDTP) is a utility application that enables Wirecast to broadcast the desktop of any computer running the Telestream Desktop Presenter program.

Desktop Presenter is normally auto-detected by Wirecast and is automatically added to the list of sources. However, if a RDTP is not detected, or if you want to add one in a remote location you can manually add it by selecting *New Remote Desktop Presenter* from the Source menu in the Main window.

You can then setup the presenter in the Source Settings window by entering an IP address of the target computer, optionally checking the With Audio checkbox, and clicking Apply:
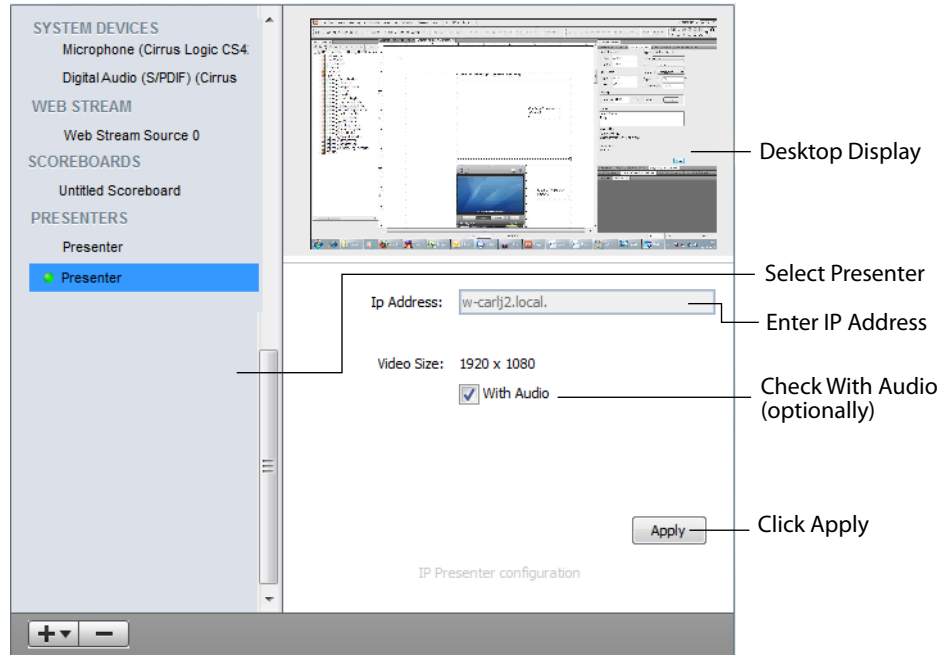
Note: When a Desktop Presenter has been auto-detected, the IP Address field is disabled.

For more information, refer to the Telestream Desktop Presenter User Guide.

Local Desktop Presenter

The Local Desktop Presenter (LDTP) is a utility application that enables Wirecast to broadcast the desktop of your computer running Wirecast. It enables you to capture from a local source at high resolution and at a high frame rate. It can be used to capture video sources. Add a LDTP by selecting *New Local Desktop Presenter* from the Source menu in the Main window.

Setup the presenter in the Source Settings window by selecting a Capture Type: Monitor or Window. *Monitor* captures the whole display from a specified monitor. *Window* captures any selected window.
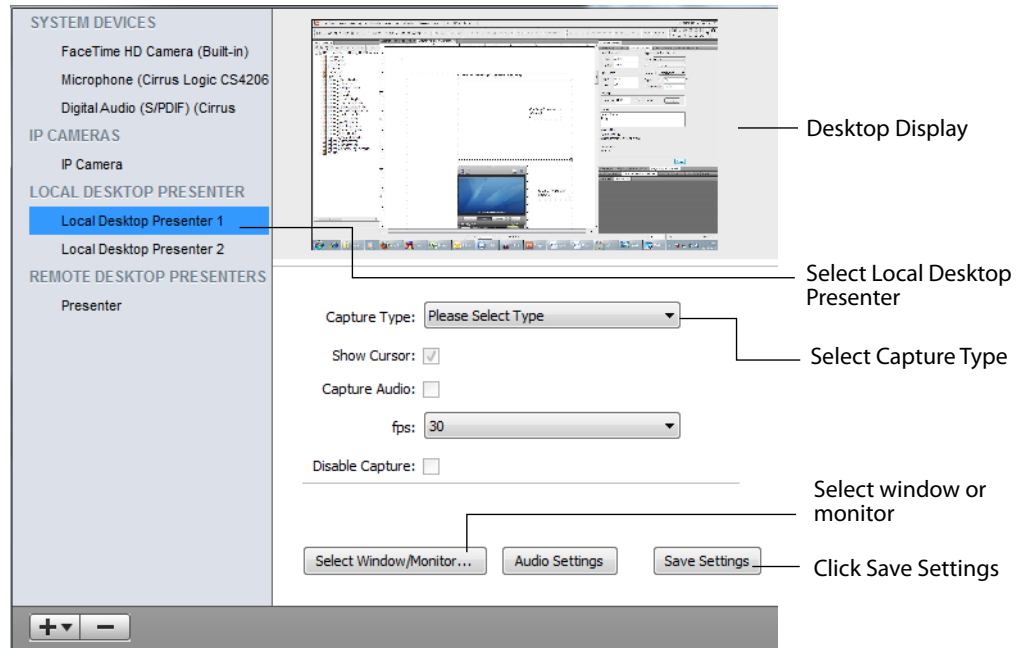
Click *Select Window/Monitor* (shown above) to define what monitor or window to capture. If you selected *Monitor* for the *Capture Type* (above), you can choose which monitor to capture, if you have multiple displays.
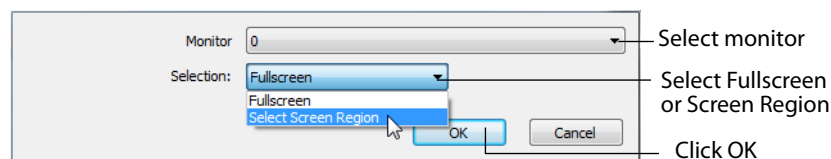
If you select *Screen Region*, an adjustable transparent window displays. Click and drag any of the eight circles (side and corner controls) to define the screen region.

Click and drag circles
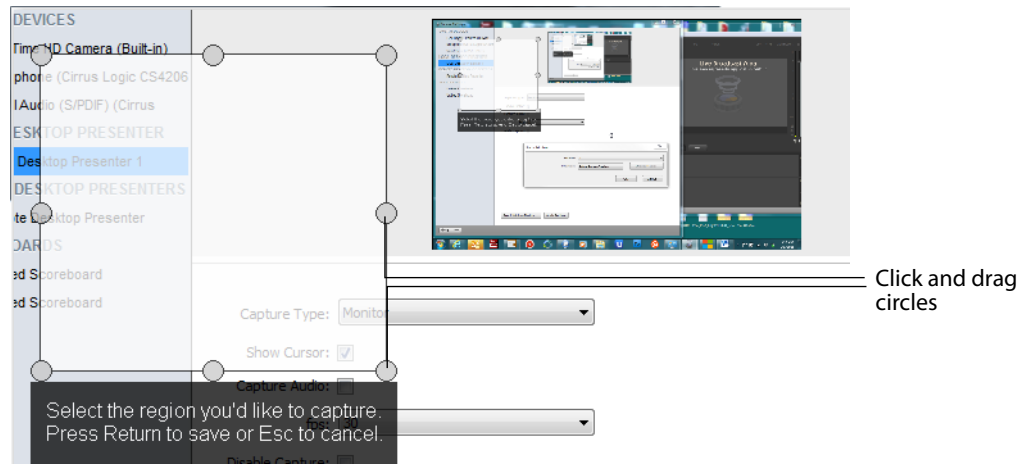
If you selected *Window* for the *Capture Type*, a selection window opens. Select an Application, then select a Window (only windows associated with the selected application are listed) to identify which window is captured.

Select Application

Select Window

Click OK
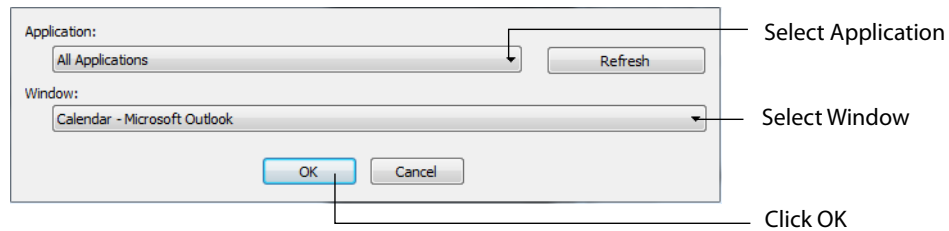
Other Local Desktop Presenter controls are:

Show Cursor When checked, causes the cursor to be captured in addition to the video source.

Capture Audio When checked, captures audio in addition to video. Click Audio Settings to select the audio source.

FPS Select the frame rate at which you want the video to be captured.

Disable Capture When checked, capture is disabled.

Audio Settings Enables you to select an audio source to be captured with the video.

Sources are automatically detected and displayed in the Web Stream list. They are also identified as *IP Camera Discovery* or *Bonjour* detection. Select also an *IP Camera Discovery* Profile. Set controls as needed, then click *Connect* when finished.

Select a Web Stream source

Set IP Camera Profile

Set Controls

Click Connect

Detection identifiers

Wirecast Cam

The *Wirecast Cam* option allows you to use an iOS device (iPhone, iPad, etc.) as a remote camera. You need only to download the Wirecast Cam app from the Apple App Store and make sure your iOS device is on the same network as your Wirecast computer. When you do this, your iOS device shows up as a *source* in Wirecast.

Wirecast Cam App

Here is how the Wirecast Cam app appears on your iOS device (in this example, an iPhone).
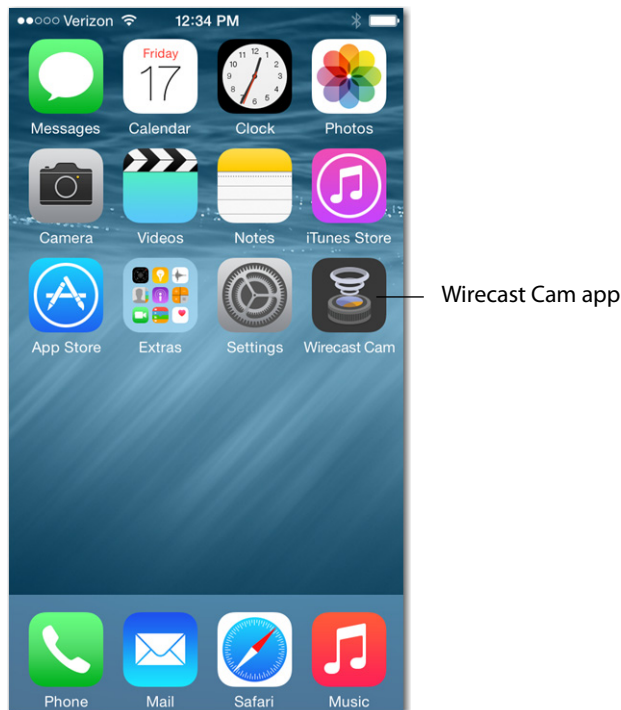
Wirecast Cam app

When you open the Wirecast Cam app, a splash screen displays briefly.

Wirecast Cam Dashboard

Here is the dashboard of the Wirecast Cam app. There are five buttons, a time/bitrate display, and a resolution/framerate display.

Time/Bitrate display

00:01:30 bitrate-2000kbps

Microphone button

Settings button

Start/Stop button

Switch camera button

Light button

640x480 30fps

Resolution/Framerate display
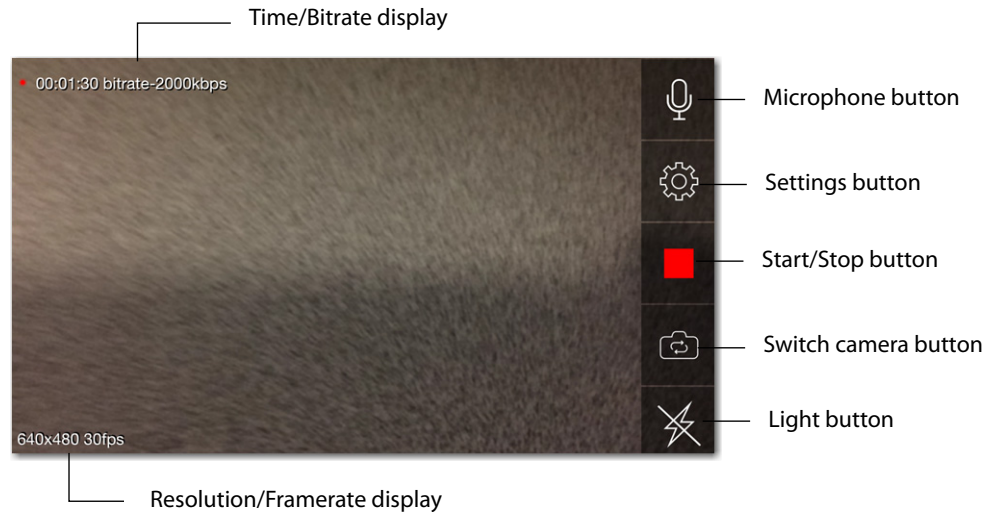
Time/Bitrate display Displays the time duration of your broadcast. The clock is reset each time you start your broadcast by clicking the Start/Stop button. Displays also the bitrate of your broadcast and is displayed only while broadcasting.

Microphone button Turns the microphone on and off. When off, the icon has a line through it.

Settings button Displays the settings for Wirecast Cam (See *Wirecast Cam Settings*).

Start/Stop button Starts and stops your broadcast. When on, the button is square. When off, it is round.

Switch Camera button Switches between front and back camera. When back camera is selected, the icon does not change.

Light button Turns the iOS device light on or off. Only the back camera has a light. This button is only displayed when the iOS device has a back side camera.

Resolution/Framerate Displays the current resolution and framerate settings. These are always displayed, even when not broadcasting.

Wirecast Cam Settings

Click the Settings button to display the *Wirecast Settings* menu. Setup the Wirecast Cam as needed for your broadcast, and click Done when finished.
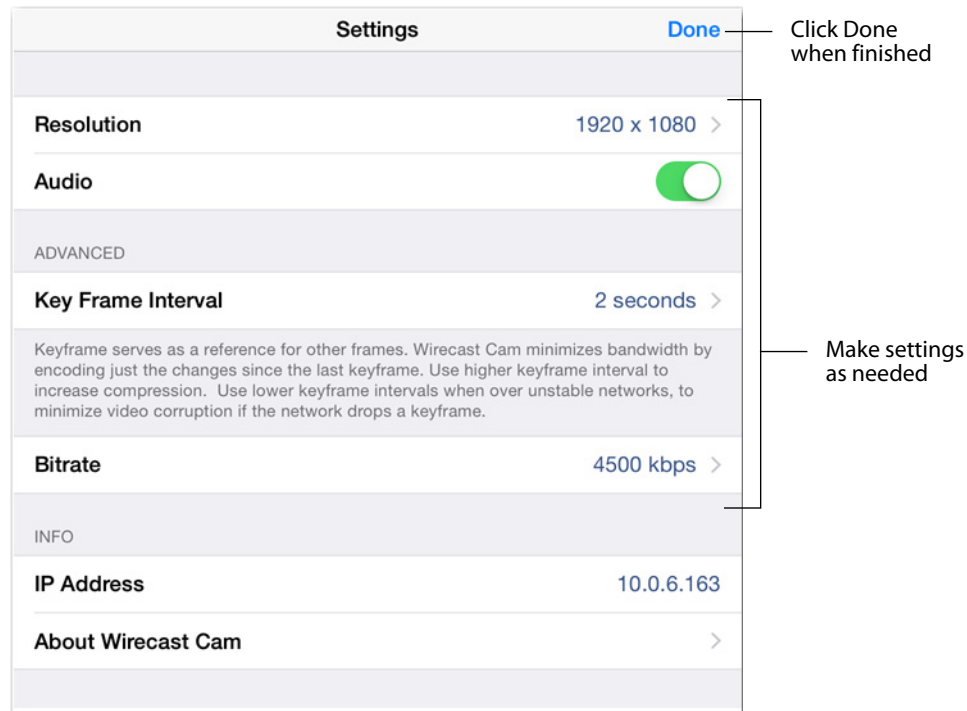
Resolution Click to set the resolution of your camera. This value is displayed in the lower left-hand corner of the Wirecast Cam app. It is always displayed.

Audio Turns the audio for your broadcast on or off. Audio is on when green is displayed.

Key Frame Interval Serves as a reference for other frames in your broadcast. (See the description provided in the Settings menu).

Bitrates Click to set the bitrate of your broadcast. The bitrate is displayed in the upper left-hand corner of the Wirecast Cam app. It is only displayed while you are broadcasting.

IP Address Displays the IP Address of your iOS device.

About Wirecast Cam Click to display version and copyright information about the Wirecast Cam app.

Starting Your Wirecast Cam Broadcast

Once you have set up the Wirecast Cam app for your broadcast, select a camera (front or back, turn on the microphone and light as needed, then click the Start button. Your

Wirecast Cam is now ready to be detected by Wirecast on your PC connected to the same network as your iOS device.

Adding a Wirecast Cam Source

Once the Wirecast Cam app is started (and is on the same network as your Wirecast PC), Wirecast detects the presence of Wirecast Cam as a source and makes it available on the Add Sources menu. To add Wirecast Cam as a source, select an iOS device from the Add Sources menu.

Click Add Sources icon

Select an iO device
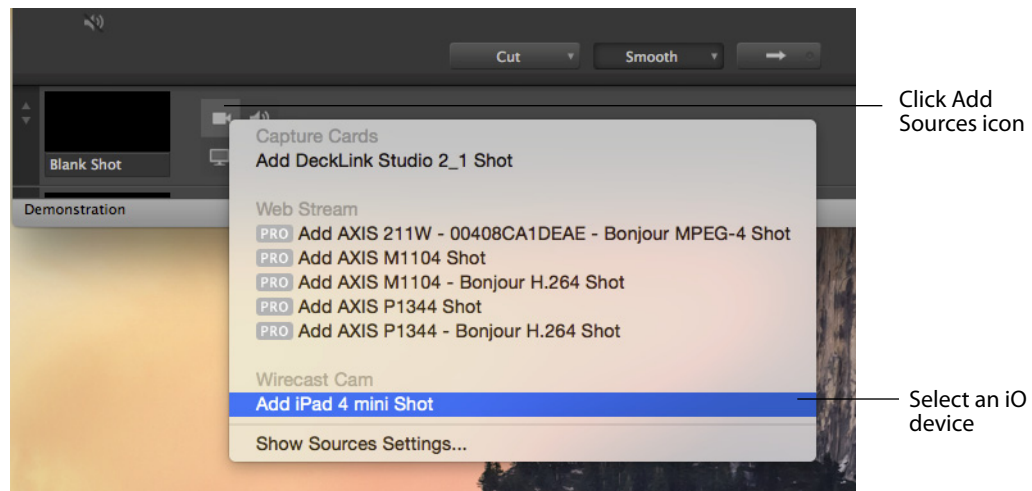
Note: If the iOS device is not automatically detected you can also manually add the iOS device by selecting *Sources > New Wirecast Cam* and manually enter the IP address of the iOS device.

After you have added a Wirecast Cam, a Wirecast Cam shot is created. Double-click the shot to make settings and connect to the Wirecast Cam.
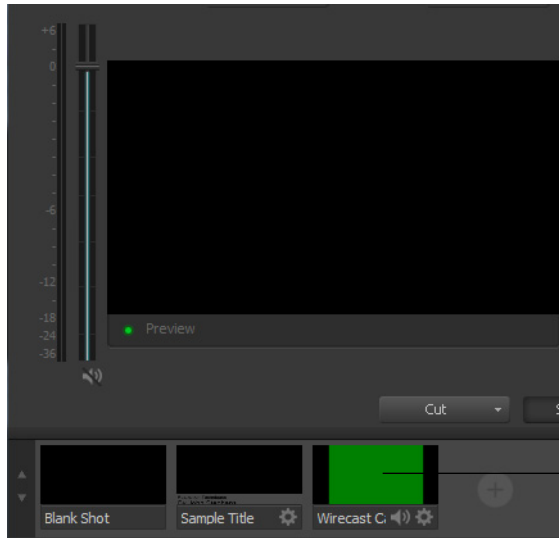
Double-click Wirecast
Cam shot

When the Source Settings window displays, set (optionally) the latency to *Low* or *Normal*, then click *Connect*. Your Wirecast Cam image will display in the viewer window at the top.
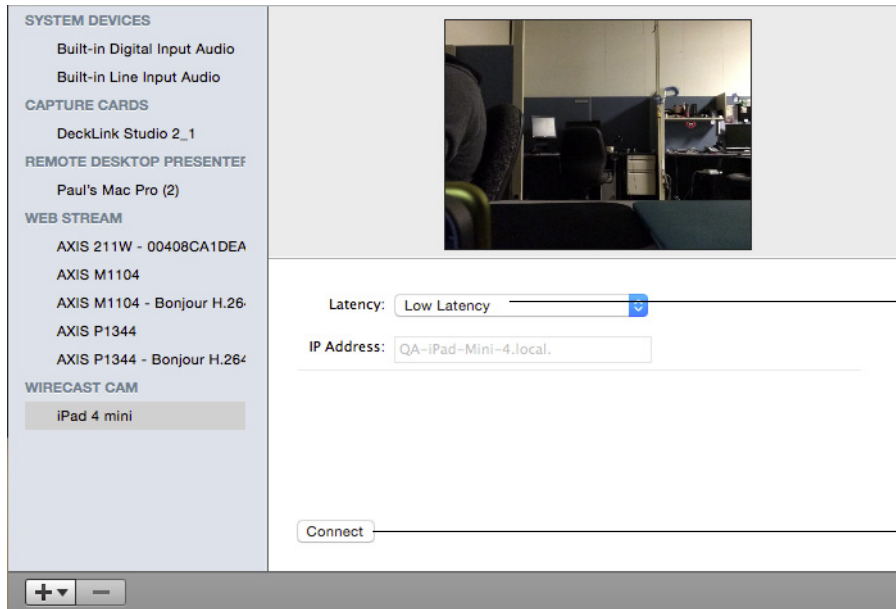
Set Latency
(optionally)

Click
Connect

Your Wirecast Cam will be automatically detected by Bonjour and placed in the list or sources that can be added.

After you close the Source Settings window, you can click the Wirecast Cam shot to place it in the Preview window. Click the Go button to take your Wirecast Cam shot live.

Click Shot   Click Go button
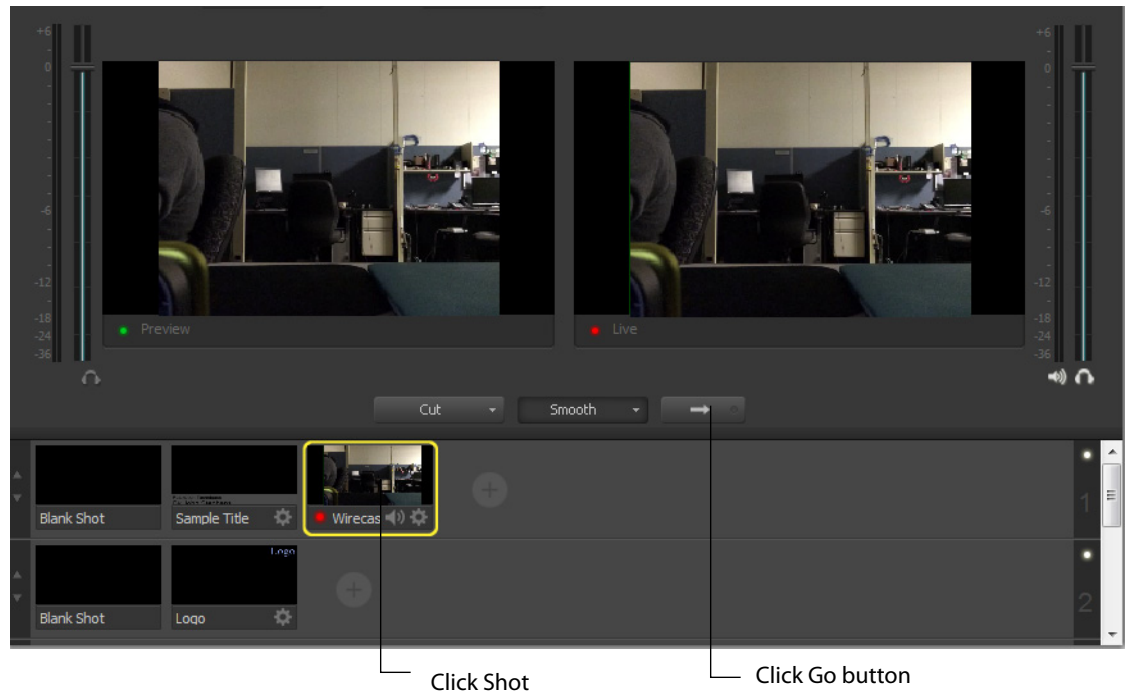
Web Stream

PRO

The Web Stream option allows RTMP, RTSP, MMS, or HTTP streams to be taken directly into Wirecast. This is useful for incorporating remote IP Cameras or other network streams into a broadcast.

Select a Web Stream source. Sources are automatically detected and displayed in the Web Stream list. They are also identified as *IP Camera Profile* or *Bonjour* detection. Select also an *IP Camera Profile*. Set controls as needed, then click *Connect* when finished.

The Web Stream controls are:

Protocol Select the protocol to use with your incoming stream.

Stream Options Select a set of options based on the protocol you selected (the sub-protocol of the stream). RTSP can be transmitted over UDP, TCP, or HTTP. RTMP can be transmitted non-encrypted, over http, encrypted. If unsure what to use, select *Auto Detect*.

Format Options Select a video format to use for transcoding. If you select *Auto Detect* (the default) Wirecast with automatically detect the format to use from the incoming stream.

Ignore Stream Timestamp When checked, stream timestamps are ignored. Every Audio/Video frame has a Presentation timestamp, a time that tells the player when to show the frame. Checking this box causes the Web Stream to ignore the presentation timestamp set by the video stream and just use the current system clock.

Live Stream When checked, specifies that the stream is a live stream and video on demand. For Wowza servers, it does not do anything, but for Adobe Media Servers, Live Stream must be checked for live streams.

URI Enter the address of your input stream. (For example: *rtsp://127.0.0.1:8080/ my_stream.sdp*, or *http://10.0.0.1/my_stream,* or *rtmp://hades.telestream.net:1935/live/ myStream).*

Stream Authentication Click to connect to remote devices, like IP cameras, which require login credentials for access. Check the *Remember* checkbox to save your credentials to cause the device to automatically connect.

ONVIF Authentication – AXIS P1344 camera	
Requires Authorization	
Username	root — Enter Login info
Password:	•••••
	— Check Remember
☑ Remember	Cancel OK — Click OK
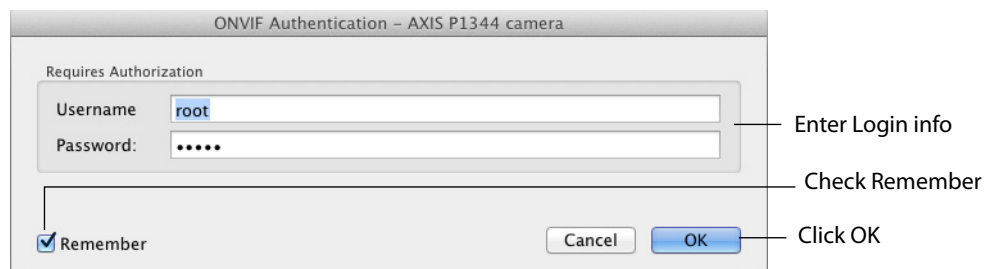
Save Settings Click to save your Web Service control settings.

Capture Cards

STUDIO

Capture Cards are hardware extensions that enable you to bring in video from more advanced HDMI and SDI sources. Most capture cards are automatically configured to the best settings. Some cards (Blackmagic Intensity Pro, for example) require some manual adjustments. When a Capture Card is selected, you can select the Frame Format. Clicking Save causes the video to display. You can also check the De-interlacing checkbox to turn on de-interlacing. Once configured, you can add Capture Cards from the Live Source drop-down menu in the Main window.

If you experience difficulty with your Capture Card, make sure you have the latest driver from the vendor and that it is installed correctly before contacting Customer Support.
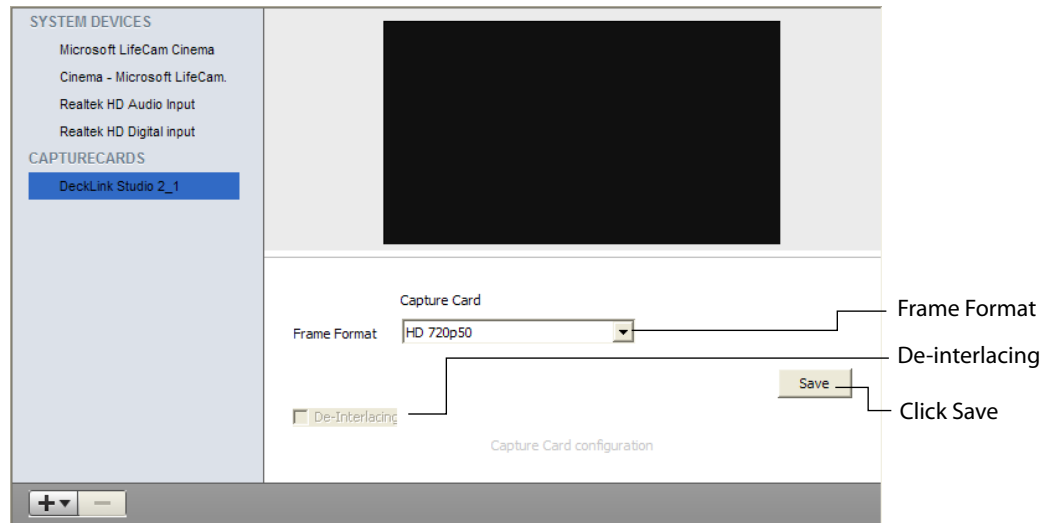
Capture cards supported by Wirecast:

- Blackmagic Intensity Pro
- Blackmagic Intensity Shuttle
- Blackmagic Decklink Studio
- Blackmagic Decklink SDI
- Blackmagic Decklink Duo
- Blackmagic Decklink Extreme 3D
- Osprey 240e, 450e, 700e
- Matrox Multi

Blackmagic

PRO

You can use Blackmagic cards to send live feeds directly into editing, effects, and broadcast design systems. In order to use this feature, install a Blackmagic card with

associated drivers, then restart Wirecast. The Blackmagic card will then be listed in the Output menu.

Under the Output menu, select a Blackmagic card, and then select an HD setting for its output. If your card has multiple outputs, you can select more than one and they will output simultaneously at independent resolutions and frame rates.

Select an HD setting
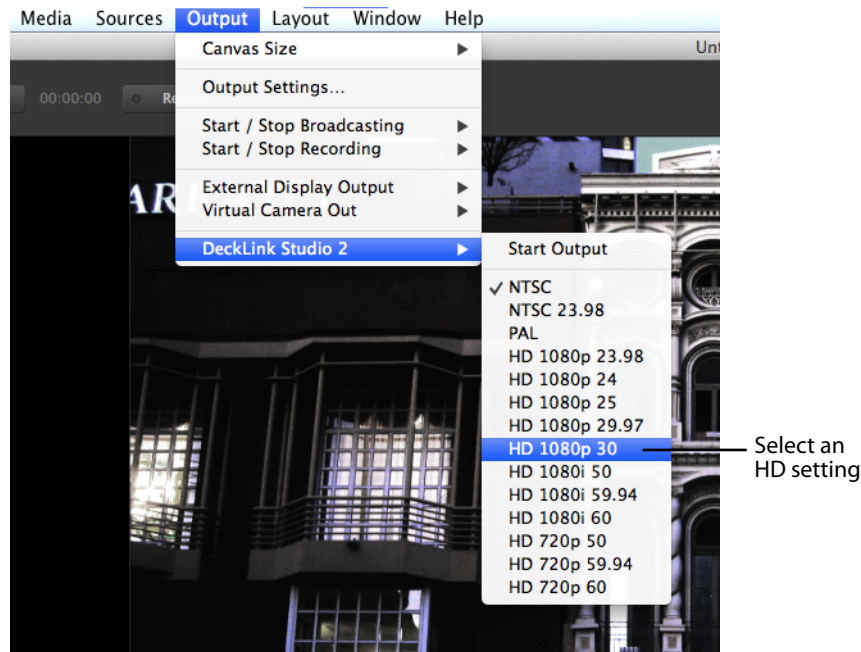
To begin outputting, select *Start Output*. If you have multiple outputs selected they will all begin outputting.

Select Start Output
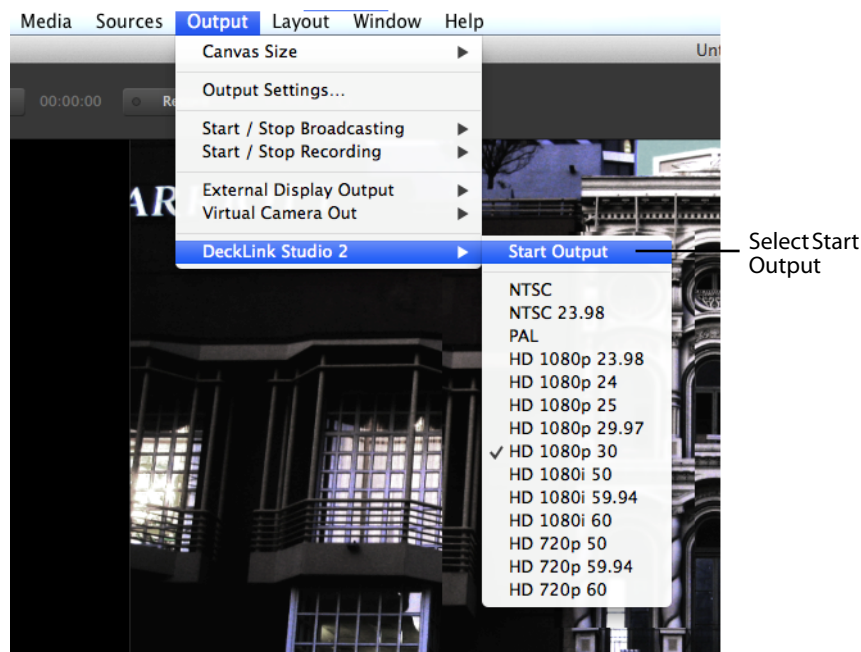
You can stop the Blackmagic card output by selecting *Stop Output*. If you have multiple outputs selected they will all stop outputting.

Select Stop Output
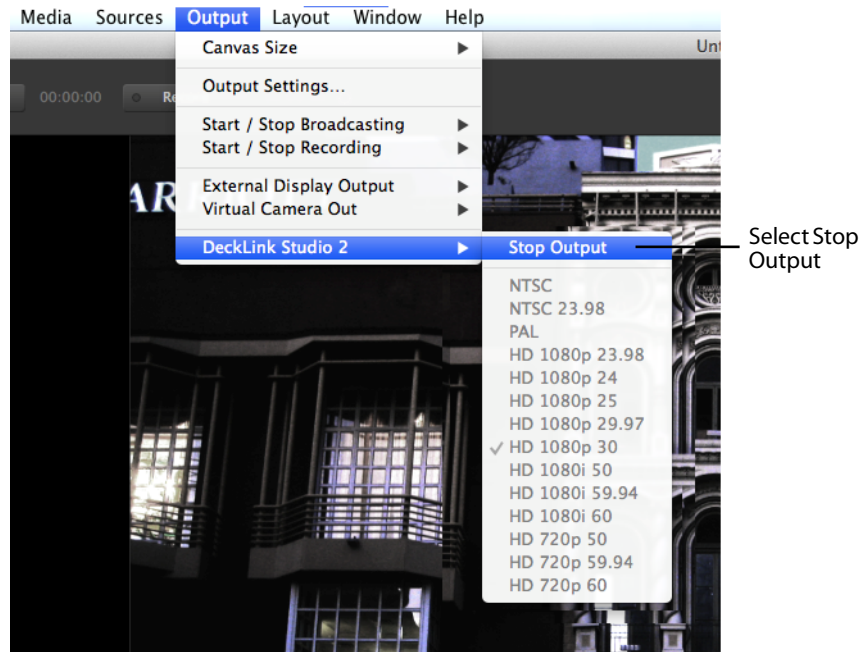
Show USB Devices

To view a list of all USB devices select *Show USB Devices* from the *Sources* menu. The list displays all connected USB devices, the USB bus on which each USB device is located, and the speed of the device. This information is helpful when troubleshooting USB bus bandwidth issues. Click *Show All Devices* to display all available USB devices, otherwise only video devices are listed. Click *Refresh* to update the list.
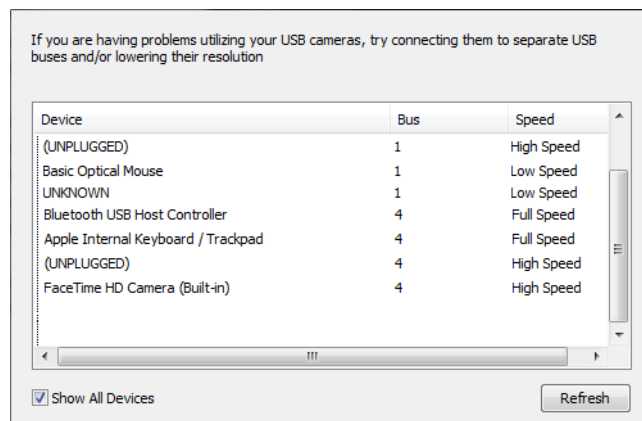
Playlist

Introduction

Playlist enables you to create a list of clips and play them as a single group. You can have multiple playlists and edit them as needed after they are created. You can also replay playlists (see *Replay*). This makes the combination of Playlist and Replay a very powerful production tool.

Topics

- *Creating a Playlist*
- *Adding Clips*
- *Playing Playlists*
- *Playlist Controls*
- *Restoring Playlist Position*
- *Countdown Clock Options*

Creating a Playlist

To create a new Playlist, select New Playlist Shot from the Shot Menu and a new Playlist shot icon is added in the shot window.

Click the Shot
Menu

Select New
Playlist Shot
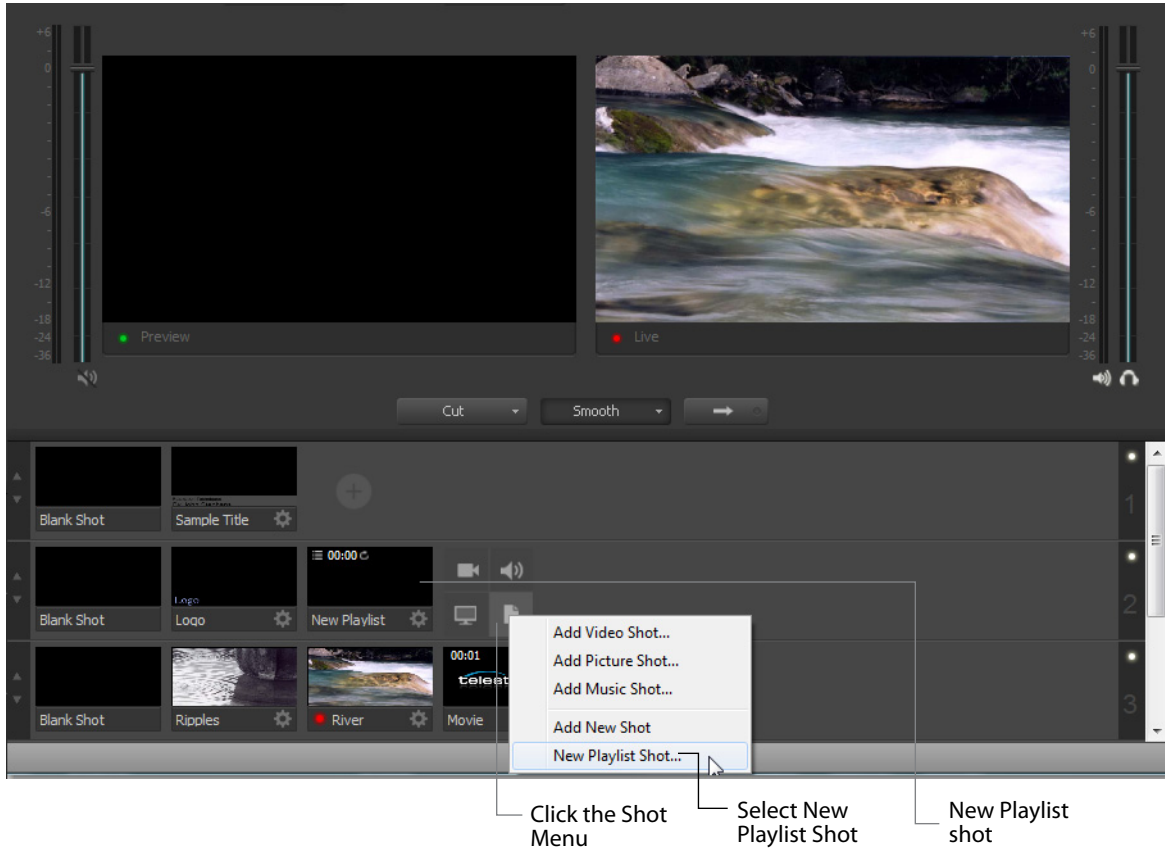
New Playlist
shot

The Playlist shot icon displays a playlist badge, the playlist duration, and the playlist completion action.

Playlist badge

Playlist badge

Playlist completion action
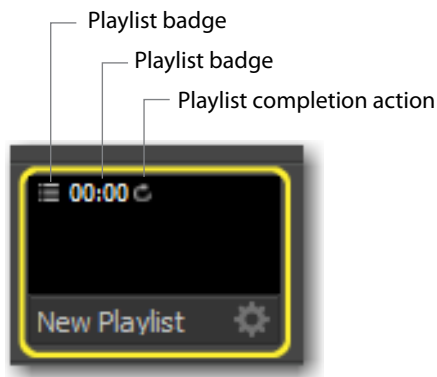
Adding Clips

To add clips to the playlist, first click and drag them onto the layer where the new Playlist is located.

Added clips
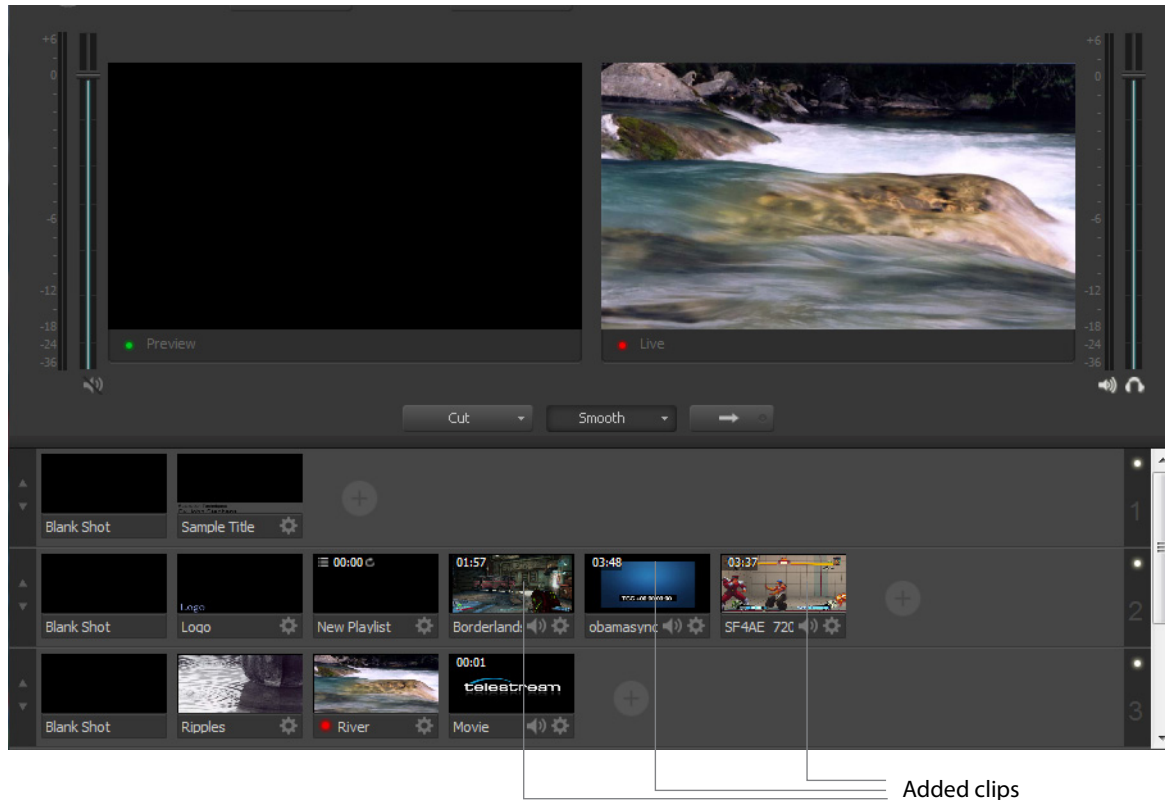
Second, click and drag each shot onto the playlist icon. When you do this you must wait for the playlist icon to obtain a yellow border before releasing the click button.

Click and drag clip

Release when yellow boarder appears

Double-click the Playlist icon to open the Playlist window. You can drag and drop more clip directly into the Playlist window when it is open. You can also add clips by selecting Add New Shot from the Shot Menu.

Add clip by click and drag

Add clip by selecting Add New Shot
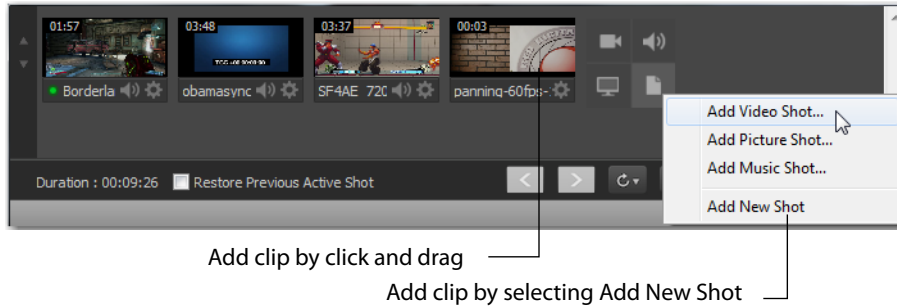
These added shots are now housed in the Playlist. You can still edit shots in the playlist by double-clicking on the shot. You also have all of the Change Shot menu options available by right-clicking on the shot.

Double-click shot to edit it

Right-click shot to access the Change Shot menu
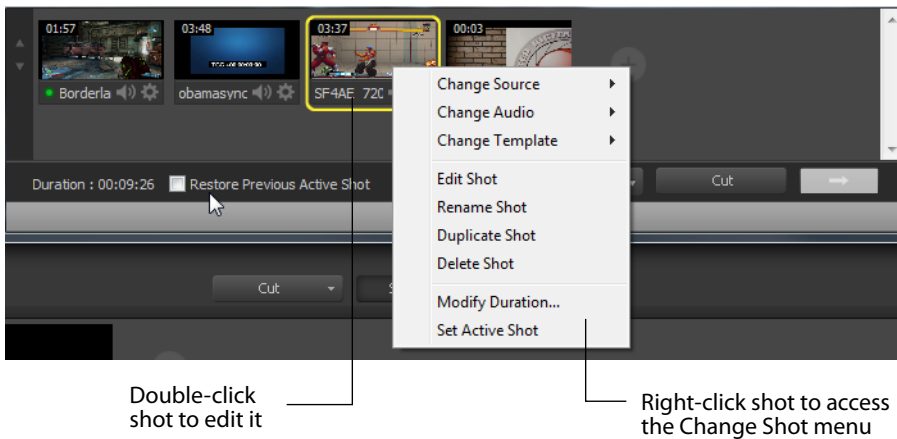
Note: Do not delete shots from a playlist while the playlist is live.

The Change Shot menu for Playlist shots has one additional option: Modify Duration. You can set the shot duration to any value by selecting *Modify Duration* and entering a new duration when the dialog box displays. Click OK when finished.

Enter shot duration

Click Reset (optionally)

Click OK
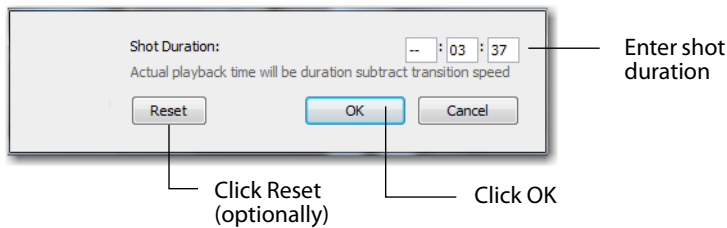
You can, optionally, reset the duration to its original value by clicking *Reset*.

You can also add live sources to the playlist. To do this click the Live Sources menu and select a live source from the list.

Click Live Source menu   Select a live source
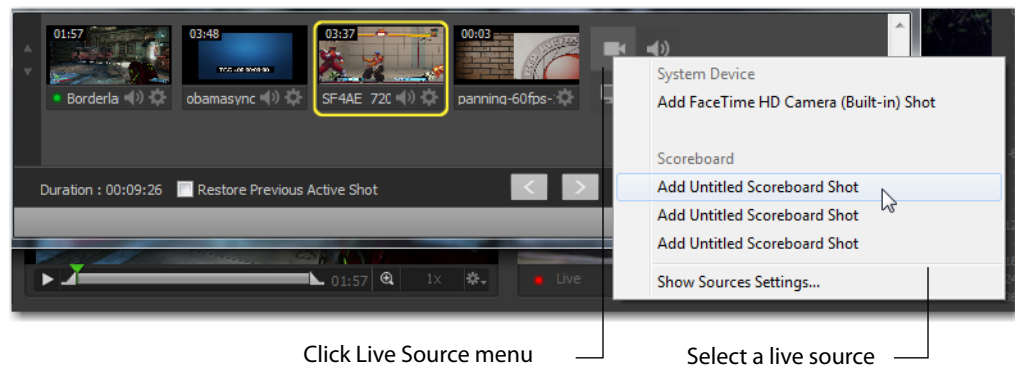
By default, live sources have an infinite duration (since they are not a clip). So, you must assign a duration by selecting *Modify Duration* for the live source and entering a duration when the dialog box displays. Click OK when finished.

Enter shot duration

Click OK
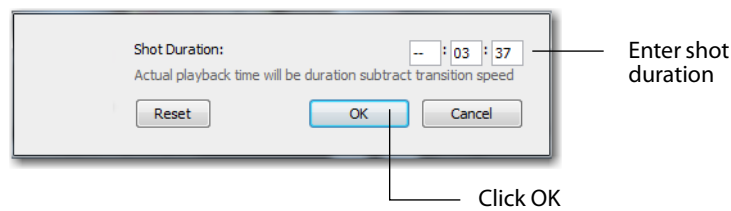
Note: Wirecast does not support nested playlists (playlists withing playlists).

Playing Playlists

Playing back a playlist is the same as playing any other shot -- click the playlist shot to place it into preview, then click the Go button to take it live.
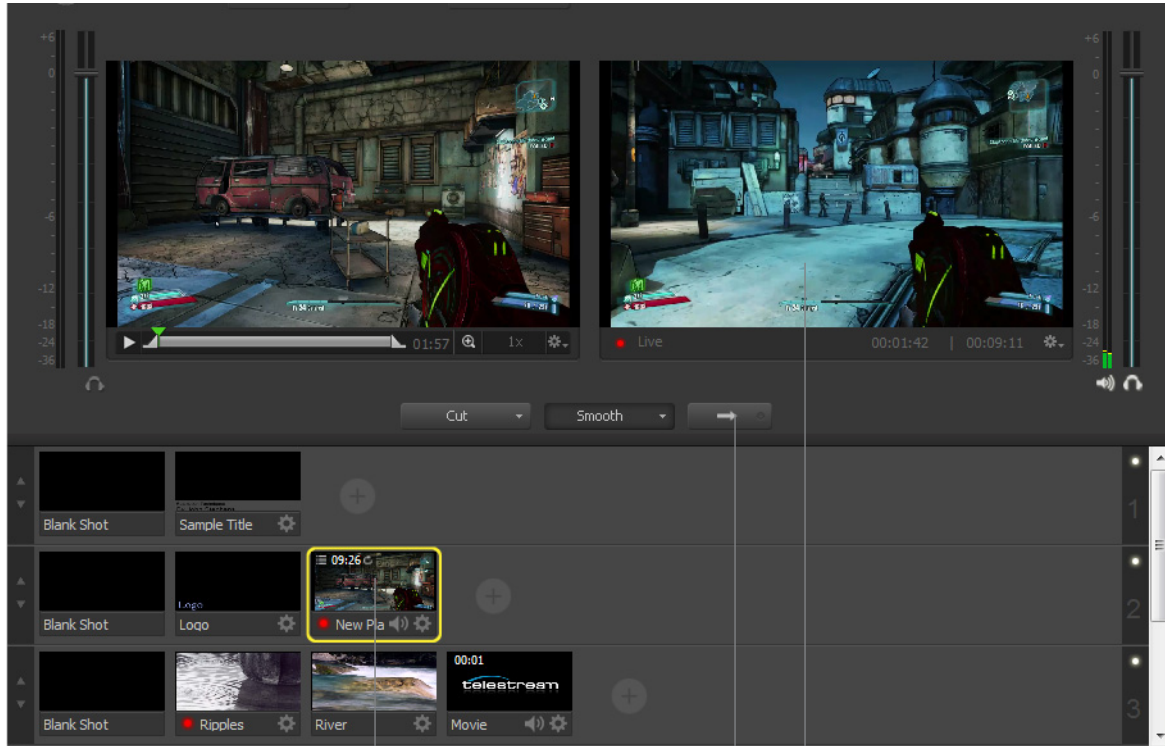
Click Playlist icon   Click the Go button   Playlist runs in live window

Playlist Controls

Playlist provides some basic playback controls. You can transition to the previous or next shot in the list, set playlist behavior, transition between shots, and choose the currently live shot.

Transition to previous shot

Make selected shot live

Transition to next shot

Set Playlist behavior

Transition between shots
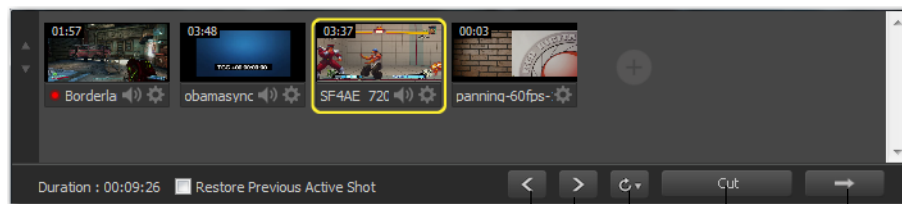
Transition to previous shot Transitions to the previous shot in the playlist if the playlist is currently live.

Transition to next shot Transitions to the previous shot in the playlist if the playlist is currently live.

Set Playlist behavior Sets the behavior of the playlist when the last shot in the list has been played. A check mark indicates what menu item (behavior) is selected.
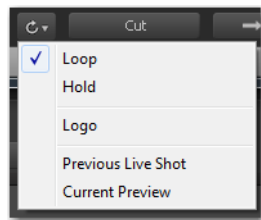
- *Loop* transitions back to the first shot, endlessly.
- *Hold* stays on the last shot. If the last shot is a clip, the last frame in the clip is displayed. If the last shot is a live shot, the live source stays active.
- *Available Shots* transitions to another shot on the same layer. All available shots are listed as menu selections. (In the example shown, the only available shot is "Logo".)
- *Previous Live Shot* transitions back to the shot that was live before the playlist began playing.
- *Current Preview* transitions the contents of Preview to the live window.

Transition between shots Sets the transition to use between shots in the list.
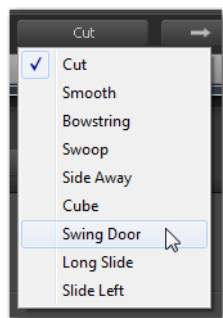
Make selected shot live Takes the currently selected shot in the playlist live, if the playlist is live.

Restoring Playlist Position

Checking the *Restore Previous Active Shot* check box causes the playlist to remember which shot was playing (and its position) when the playlist is taken live.
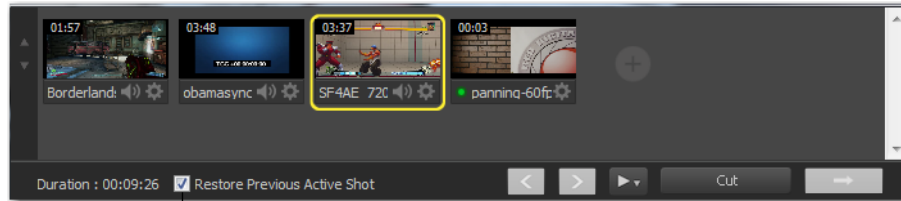
— Check Restore Previous Active Shot

Without checking the *Restore Previous Active Shot,* the playlist always starts from the first shot.

Countdown Clock Options

Select *New Playlist -- Completion* from the gear menu (displayed only when playlist is playing) to display the countdown clock for both the current shot playing in the playlist as well as the countdown for the playlist itself. When *New Playlist -- Completion* is not selected (not checked) only the current shot countdown clock is displayed.
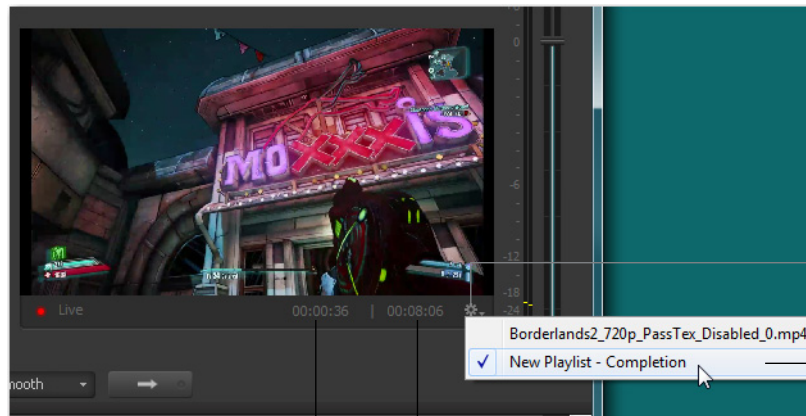
— Click the gear icon

— Select New
   Playlist -- Completion

— Countdown clock for playlist

— Countdown clock for current shot

Add a live source to your playlist by selecting a live source from the Shot Source menu.

Click the Shot Source menu

Select a live source
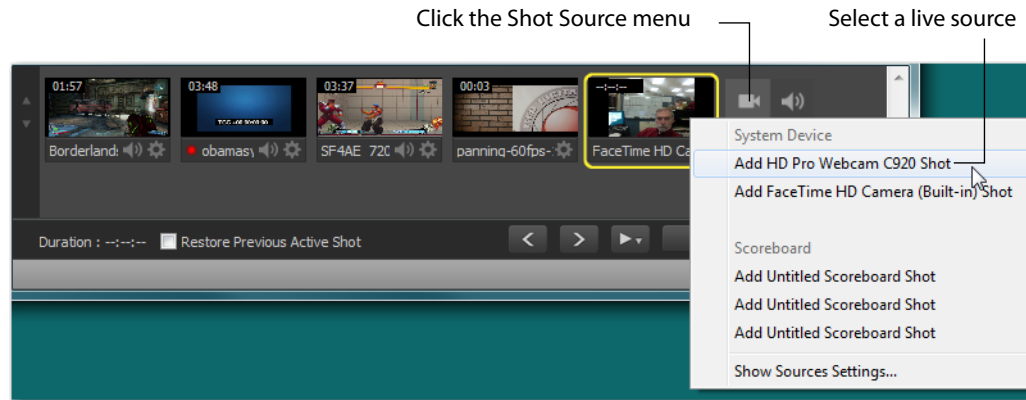
When a live source is in a playlist, a *New Playlist -- Live* option is added to the playlist gear menu. When you select this option, the countdown clock displays the time remaining until the next live source in the playlist begins to play.

Click the gear icon

Select New
Playlist -- Live

Time remaining until next live shot
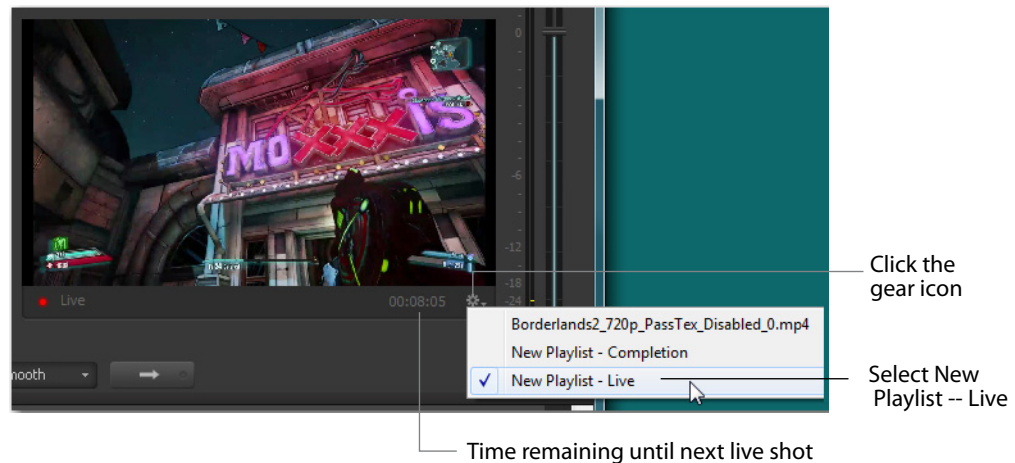
The countdown time until the next live shot is the sum of the durations of all the shots preceding it. When the live shot begins, the countdown clock displays the countdown of that live shot. If the live shot does not have a duration, then the playlist is halted and the live shot remains until another shot is taken live or the playlist is replayed.

Social Media

Introduction
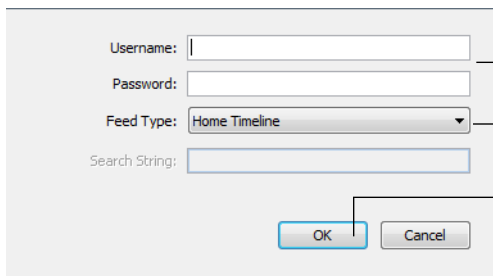
Social Media enables you to add social media messages to your broadcast and you can filter what messages are displayed. The only social media available in Wirecast is Twitter.

Topics

- *Settings*
- *Message Feed*
- *Create Shot*

Settings

The first thing you need to do is log on to Twitter. To do this click *Social > Settings*, select Feed Type, enter your login information, and click OK.

Message Feed

Click *Social* > *Message Feed* to add some Twitter messages to your broadcast. When the message window displays, search (optionally) for the messages you want to broadcast.

Enter search word
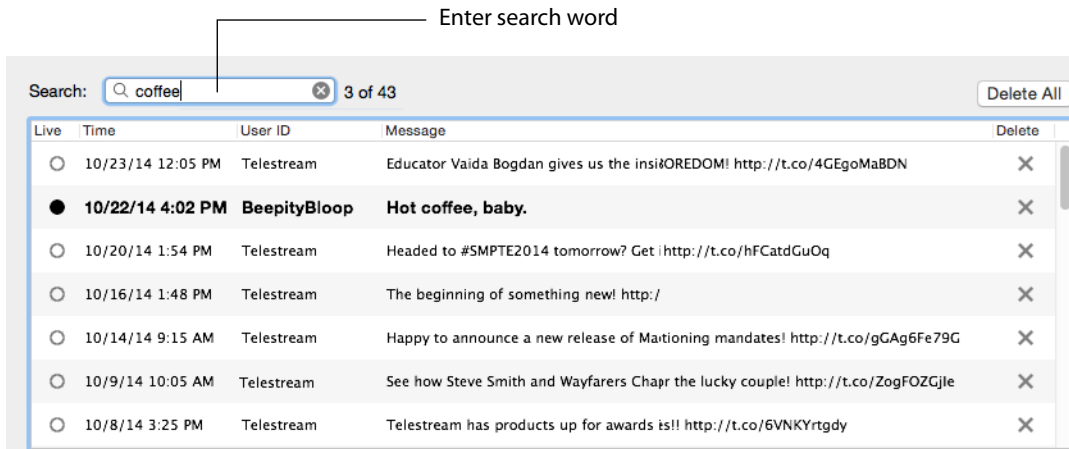
To select messages to be rotated in your broadcast, first check *Rotate Selected Every*, and enter the number of seconds of the rotation interval. Select the messages you want rotated by checking the box at the left of each message. Select a starting message.

Enter rotation interval

Check Rotate Selected Every

Select starting message

Select messages

optionally check Auto Refresh and enter number of seconds
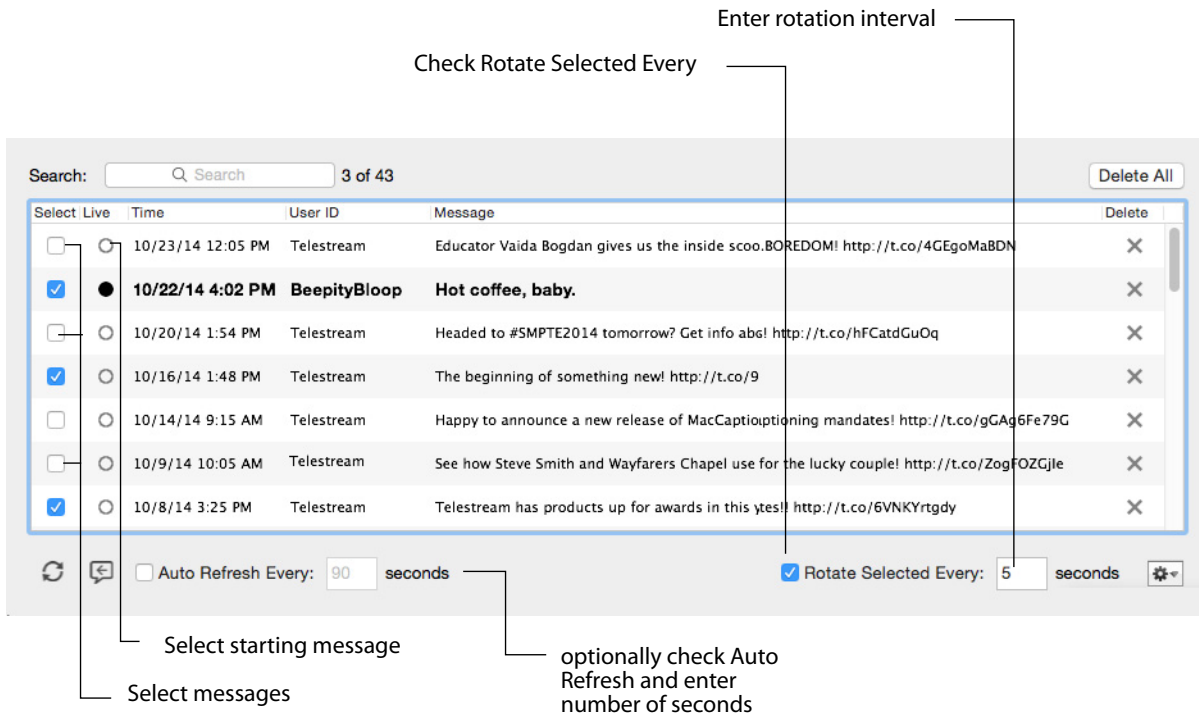
You can also (optionally) check *Auto Refresh* and enter number of seconds. The gear icon allows you to select or unselect all messages. Once you have selected your messages, close the Message Feed window.

Create Shot

To create a new Social Media shot, select *Social> Create Shot*. When the new shot icon is displayed, click it to place it in the Preview window. You can click and drag the Social Media message box to any location in the shot. Click the Go button to take it live.

Click Social Media Shot   Click the Go button
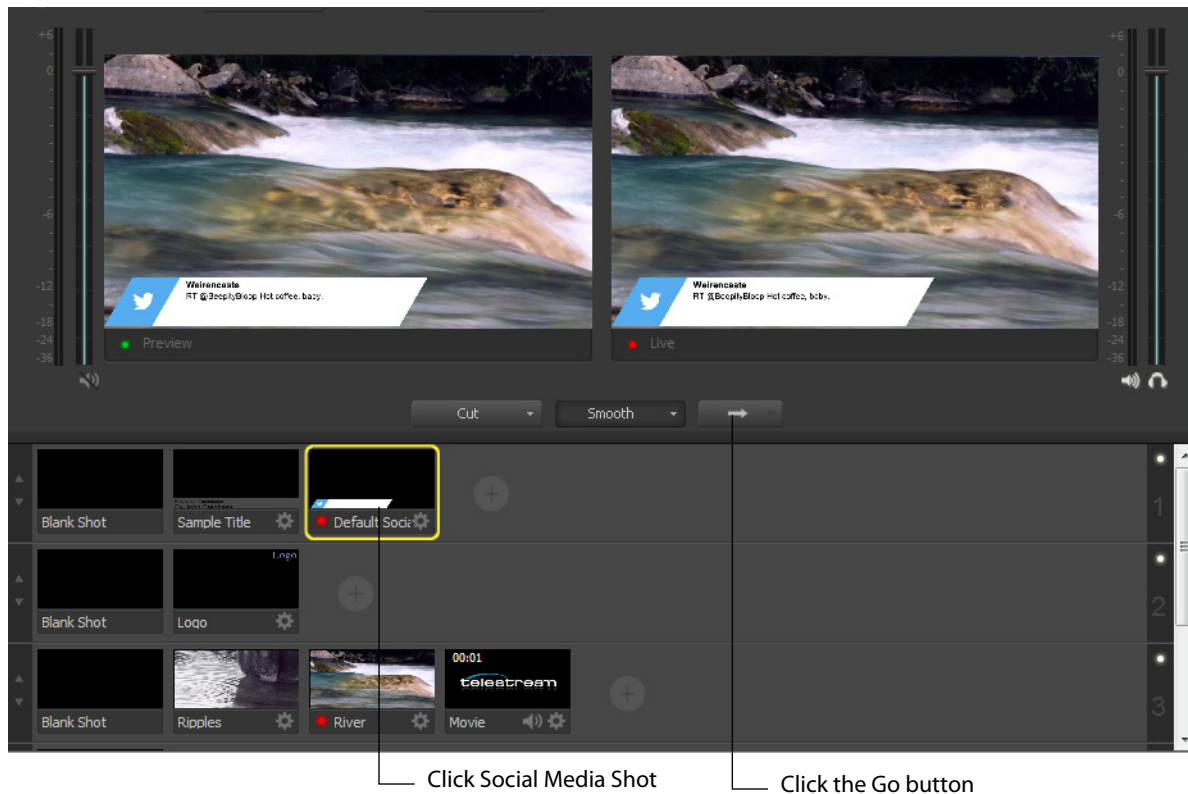
Replay

Introduction

PRO

Replay enables you to repeatedly play a clip, or even a portion of a clip, any number of times or endlessly. You can also replay playlists (see *Playlist*). This makes the combination of Playlist and Replay a very powerful production tool.

Note: Multiple Replay clips captured during the same replay session will not render correctly when played at the same time on different master layers or different shot layers.

Topics

- *Replay Settings*
- *Replay Activation*
- *Replay Templates*

Replay Settings

To use Replay you need to set it up the way you want it to perform. To do this select *Replay > Settings*. Make your desired settings and click OK when finished.

Video Quality Set the video quality for Standard or High. Depending on what quality you choose, an estimate of the *write rate* will be displayed.

Audio Check the Audio box to capture audio in the Replay you are creating. If unchecked all audio is ignored.

Maximum Duration Sets the maximum duration of the Replay buffer. *Unlimited* allows you to go all the way back to the beginning of your broadcast (no matter how long), which will require a lot of disk space, or you can select *Limited to* which allows you to choose how many minutes back into your broadcast is buffered. This option uses less disk space. Depending on how many minutes you choose, an estimate of the *disk storage required* will be displayed.

Note: If you set maximum Duration to *Unlimited,* Replay will use disk space until all available memory is used.

Replay Folder Click Browse and navigate to the location where you want to store your Replay shots.

Default Replay Duration Specifies the default duration of a Replay clip (sets In and Out points) when you click *Create Replay Shot*. For example, when the duration is set to 30 seconds (the default value) it means that the In point will be set 30 seconds before the Replay shot was created.

Create Replays In Allows replays to be created in master layers or playlists. You can still move the shots to other layers at any time after they are created.

After Creating Replay Shot When checked, the Replay shot is displayed in the Preview window. This allows you to set the In and Out points for the Replay shot rather than having to open the shot editor to set them.

Activate Replay On You can choose to start the buffering of Replay (activate the Replay system) manually, when you start recording, or when you start broadcasting. The problem with *Manually* is that you may forget to turn on the buffering. So *Record* and *Broadcast* options are provided to allow this to be automatic.

When Deleting Replay Shot When deleting a shot, you can choose to have Wirecast ask (prompt) you if you want to keep recording, or just to keep recording without asking you, or to just delete the recording.

Replay Shot Template Allows you to select an existing Replay shot to act as a template for other Replay shots, or no template at all (by choosing *None*). For more information see *Replay Templates*.

Use As Defaults Click this button to make all the settings you have made to be the default used in all created Replay shots.

Replay Activation

Note: When Replay is activated, CPU usage increases.

To activate Replay, select *Replay > Activate*. When you do this, the Activate menu item becomes *Deactivate* and several new buttons are added to the Wirecast main window: Set Replay Mark In and Create Replay Shot (same as selecting *Replay > Create Replay Shot*).

Create Replay Shot button

Set Replay Mark In button
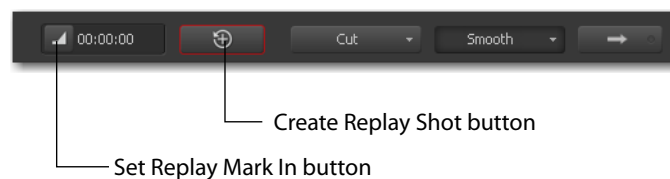
Once Replay has been activated it keeps all shot activity (playing of clips or capturing of live sources) in the Replay buffer on disk. The amount that is saved when the *Create Replay Shot* button is pressed depends on what value was entered into the *Default Replay duration* setting.

Start playing a clip (while Replay is activated), then click the *Create Replay Shot* button. Since the Default Replay Duration is set at 30 seconds, a Replay shot of 30 seconds (backward from when the Create Replays Shot button was pressed) is created. The new

Replay Shot is placed in Layer 1 (as designated in the settings) as an icon and the Replay controls are displayed at the bottom of the Preview window.

Select a clip to play

Click Go to play clip

Click Create Replay Shot
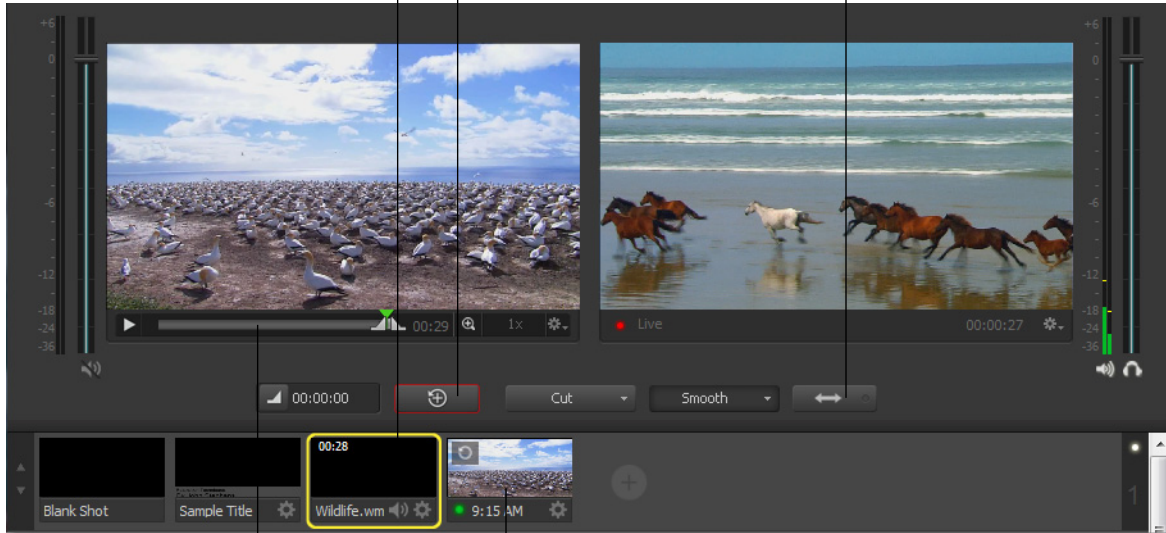
Replay Shot created

Replay controls displayed

Now that you have a 30-second Replay Shot displayed in the Preview window, you can use the controls to set the Replay In and Out points and then take the Replay Shot live by clicking the Go button.

Set In Point   Set Out Point   Click Go button
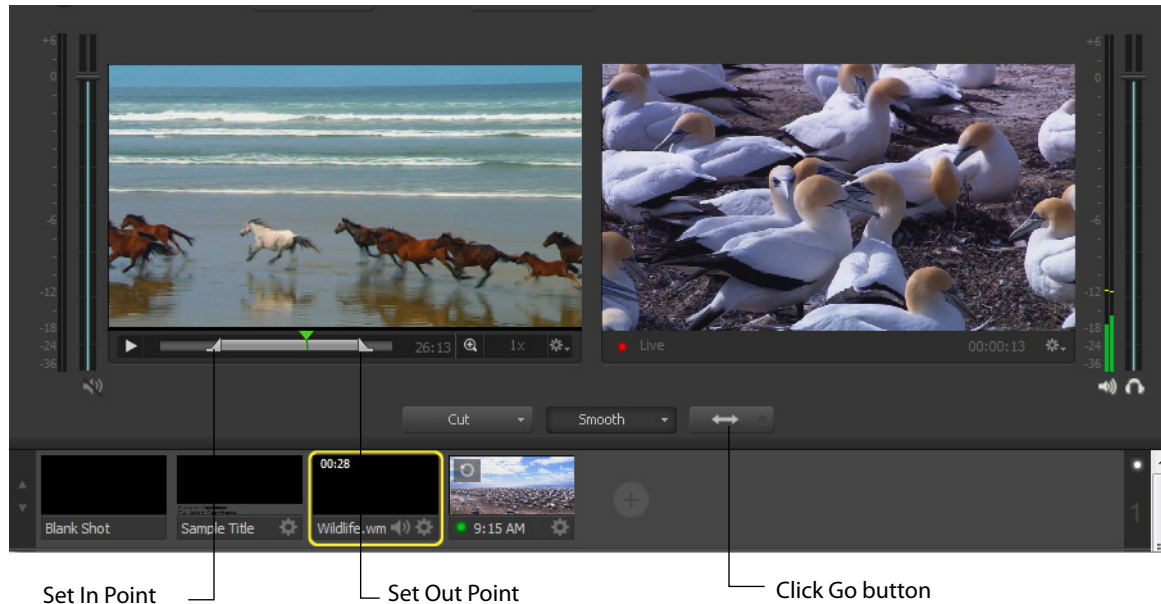
The Replay Mark In button allows you to tighten up your Replay capture. When Replay is active, it captures all past activity of your source (clip or live source) into the buffer. But you can shorten how much of the capture you actually get in a Replay shot by clicking the Mark In button first (to establish when to start your Replay Shot), and then click the *Create Replay Shot* button when you are finished with your Replay shot. Your Replay Shot now has just the content you wanted.

Create Replay Shot button

Set Replay Mark In button
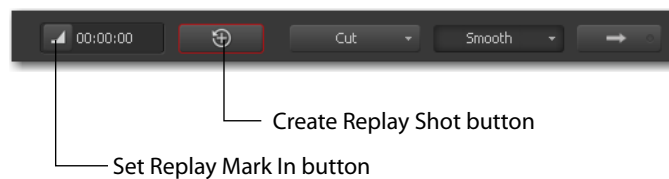
Another control available at the bottom of the Preview window is the Magnification control. Click the magnifier icon (spyglass) to display a magnification slider. Slide the

slider to the left for lower magnification of the In and Out controls, and to the right for greater magnification.

Magnifier icon

In and Out point
controls

Magnifier slider
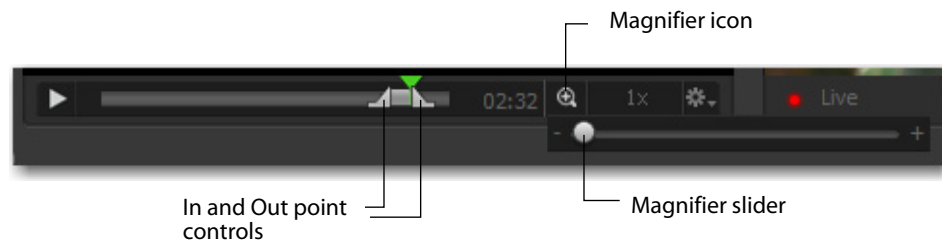
For example, if you move the slider to the right, the In and Out controls move farther apart, increasing the magnification, so that you can more easily adjust the location of the In and Out controls. This is very helpful when you have long duration Replay shots. However, the slider will quit sliding when you have reached the maximum size of the Replay Shot.

In and Out point
controls moved

Magnifier slider
moved right
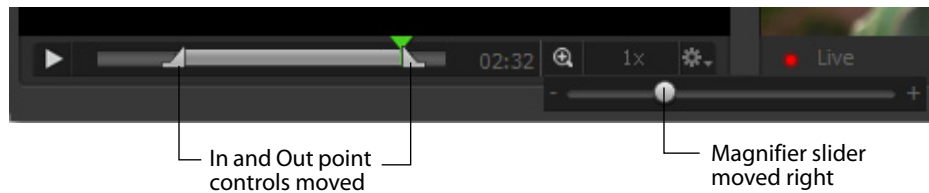
One more control is available at the bottom of the Preview window. It is the Replay the speed control. You can set the speed of the Replay Shot by clicking the speed icon ("1x") and selecting a speed from the pull-down menu. Your choices are 1x (normal speed), 2x (double speed), .5x (half speed, and .25x (one-fourth speed). The audio is muted for any speed other than normal.

Click the speed icon

Select a speed
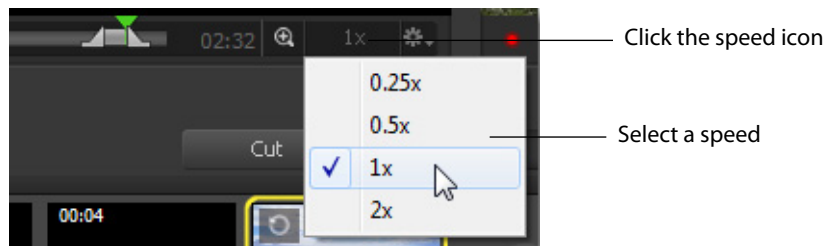
Replay Templates

Replay templates allow you to create a template shot to use as a pattern for how you want your Replay Shots to look and act.

Create a new shot, then double-click that shot to open it in the shot editor. When the Template Chooser displays, select the Fullscreen View template and click Apply.

Select Fullscreen View

Click Apply
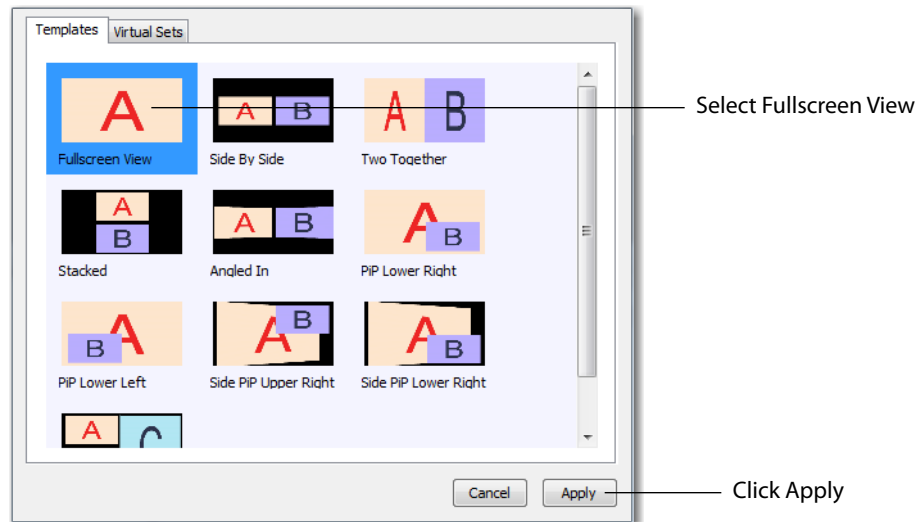
When the Shot Editor opens, add another layer by clicking the Add (plus) button in the lower left corner. Open the Clip Sources menu and select an image for the new layer. Close the Shot Editor when finished.

Click to add new layer

Click to open

Select an image
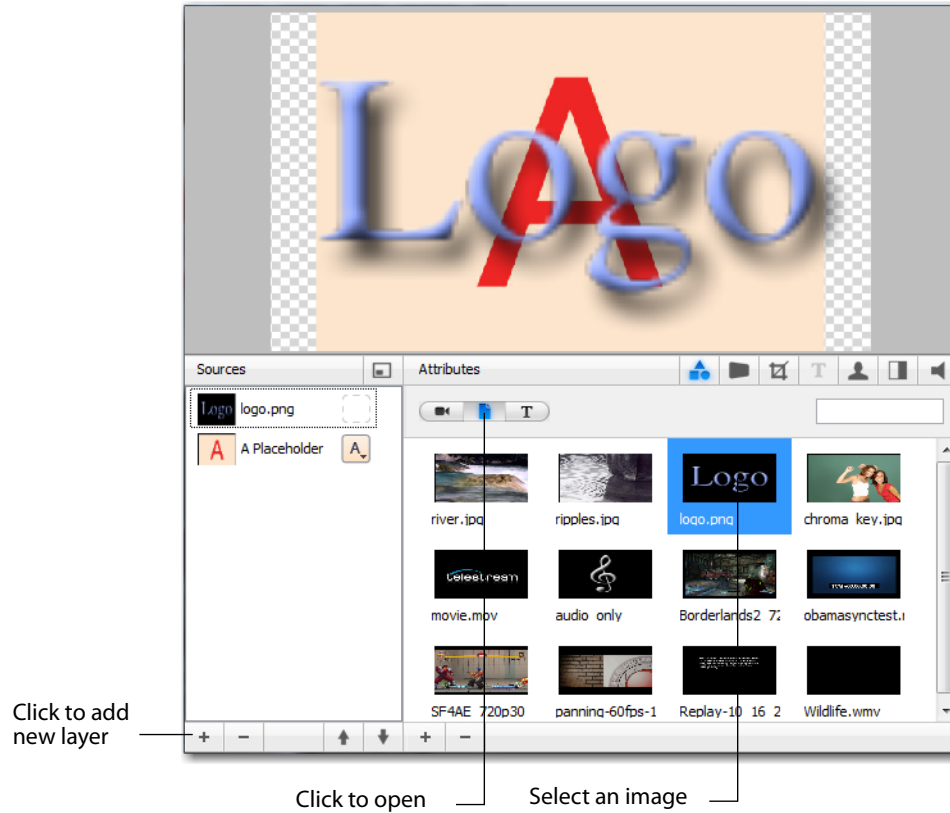
Right-click the new shot and select *Rename Shot*. When the Rename Shot window opens, rename the shot Replay Template. Click OK when finished.

Right-click and select
Rename Shot

Rename Shot
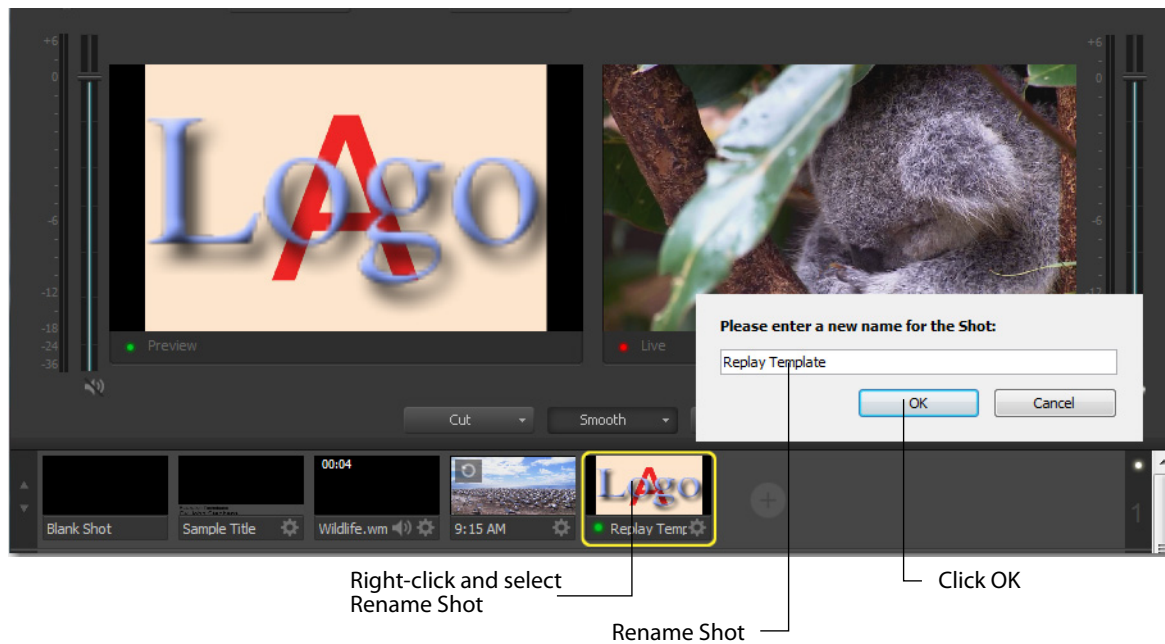
Click OK

Open Replay Settings (*Replay > Replay Settings*) and select *Replay Template* from the
Replay Shot Templates menu. Click OK when finished.

Select Replay Template

Click OK
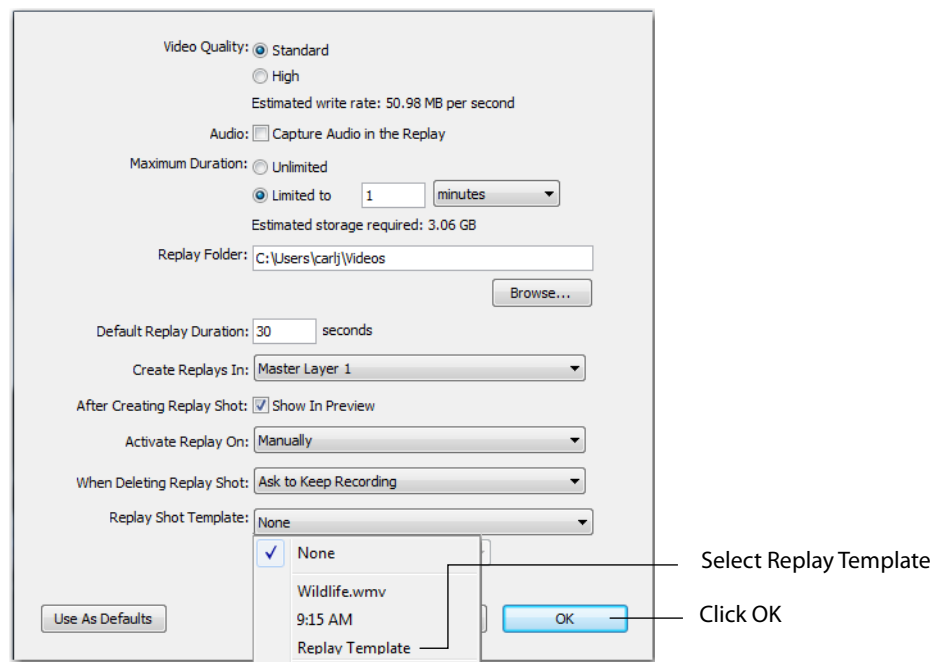
There is also a Replay Channel menu. From here you select which channel (layer) in the
template shot to use in the Replay Sot. You can only choose one channel (A, B, or C).
This channel (layer) is replaced by the video playing when the Replay shot is created.

Any other channels (layers) that exist in the template shot are used exactly as they are (content, size, and position) in the Replay shot.

Select a Channel
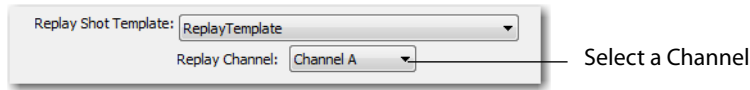
You are now ready to create a Replay Shot using the Replay Shot template. To do this, activate Replay by selecting *Replay > Activate*. Start playing a video in the live window, then click the *Create Replay Shot* button. This will create a new Replay shot that used the template to add the logo image on another layer. The new shot has an icon in the shot area and is opened in the Preview window ready for you to set In and Out points and to take live by clicking the Go button.

New Replay Shot in Preview window

New Replay Shot icon
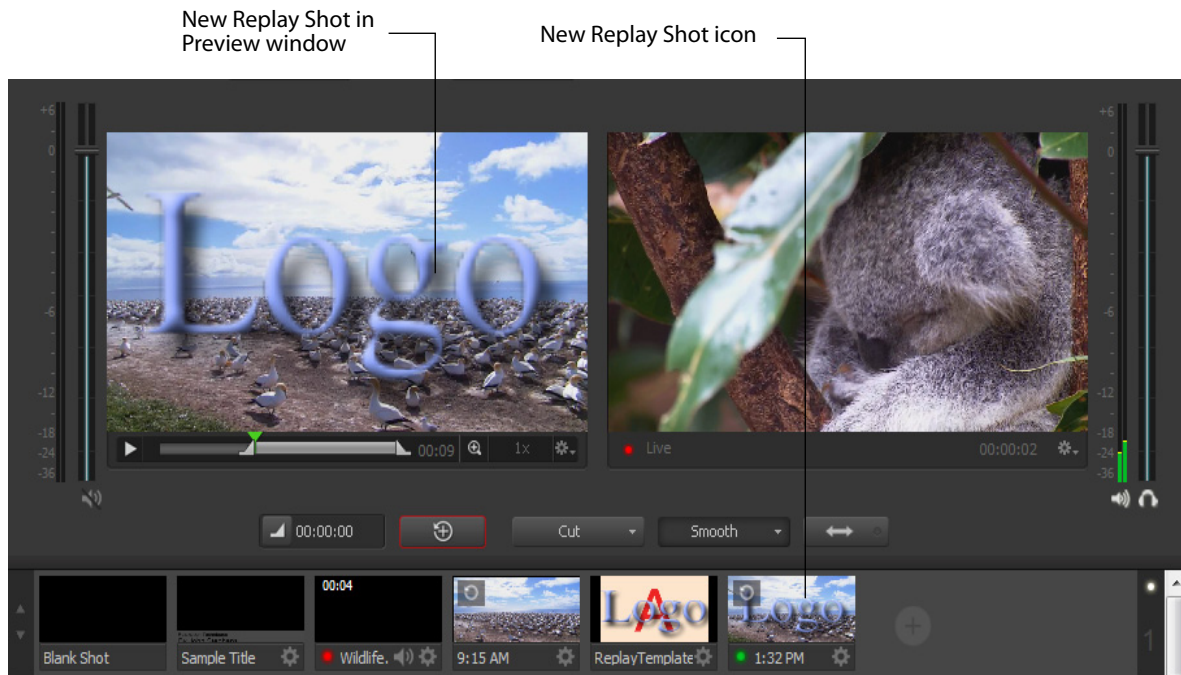
Preferences

Introduction

Wirecast is designed so that you can configure most of your options directly in your Wirecast document or the Shot Editor. The Preferences window enables you to set up Wirecast, set Desktop Presenter options, manage your licenses, update your software, and set advanced video options.

Topics

- *Accessing Preferences*
- *General*
- *Performance*
- *LicensesSoftware Update*
- *Advanced*

Accessing Preferences

To open the Preferences window, select Preferences from the Wirecast menu (or press the Command+ Comma (",") keys). Preferences are grouped under five topics: General, Performance, Licenses, Software Update, and Advanced. Click one of these topics to view and change its preferences.
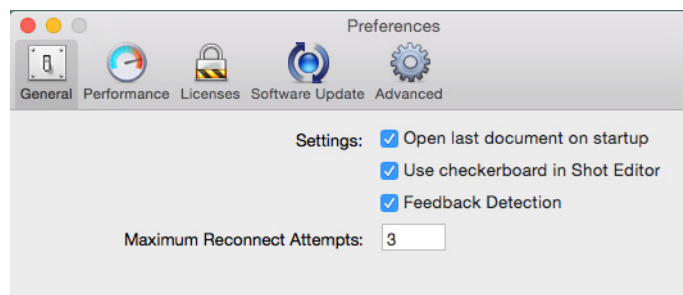
Wirecast automatically saves your preferences every time you make a change. The changes are immediately applied.

Resetting Preferences

To reset your preferences, quit Wirecast and then delete the files located at:

~/Library/Preferences/Vara Software/Wirecast Preferences.

-

Or, you can use Support Assistant to reset preferences (see *Send Support Information* under *Help Menu*).

Note: You should match the output to the canvas size as close as possible to preserve video resolution and quality. For example, a 800x600 source results in significant loss of quality if an aspect ratio of 640x480 is selected. Using 720x576, which is much closer in size, helps preserve video quality.

General

General preferences enable you to setup the Wirecast environment.
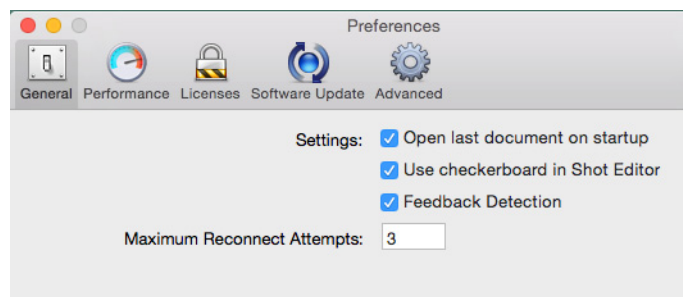
Open Last Document on Startup

When checked, the last document you used is opened when Wirecast starts up.

Shot Editor Checkerboard

When checked, a checkerboard background displays in the Shot Editor to indicate an area that is transparent. Checked is the default.

Feedback Detection

When checked, the computer audio is disabled (live feed is unaffected) whenever feedback is detected. Checked is the default. When feedback is detected, the following warning is displayed with an option to turn off feedback detection:
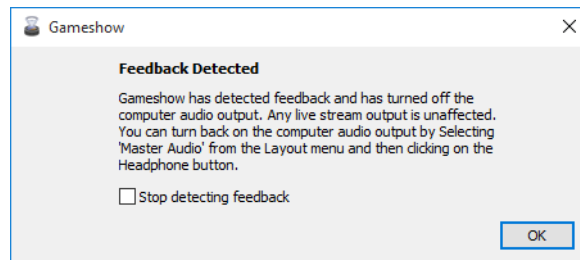
Maximum Reconnect Attempts

Enter the number of times you want Wirecast to try to reconnect to a host provider. The default is three.

Performance

Performance preferences enable you to select the display rate used for all internal video rendering.

You can set the Video Display Rate to 25, 30, 50 or 60 fps. If using PAL sources, choosing 25 may eliminate dropped or duplicate frames. It is recommended that you set this frame rate to match the frame rate of your output video encoder.

You can turn on the Live Icons feature, which makes all icons in the Shot Area display any live activity in the device it represents (cameras, streaming, etc.). You can also set the fps of the Live Icon display using the slide bar control.
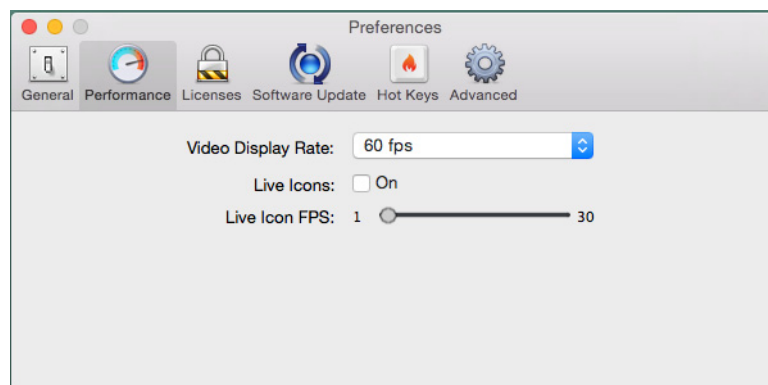
Note: If you are streaming at 60 fps for games, you need to set the video display rate at 60 fps here in Preferences and at 60 fps also in your encoder preset.

Licenses

The licenses preferences enable you to register and license Wirecast. To purchase a license, click *Purchase*. To activate a license, click the plus (+) button.

Click Purchase

Click to activate
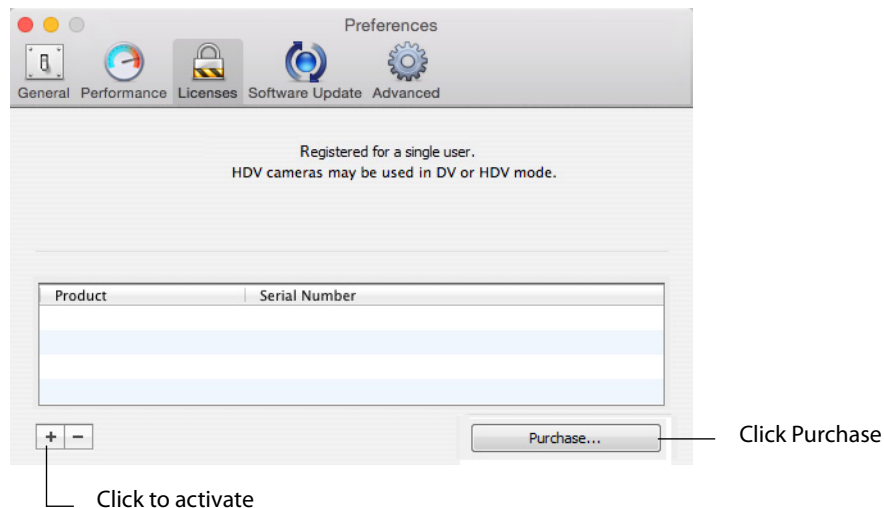
Serial Numbers

The table in the Buy Upgrade Preference window displays the products and serial numbers that you have received for Wirecast.

Note: The serial number is always composed of numbers and upper case letters (excluding upper case letter O), but it never contains quotation marks. When you receive a serial number, it may be enclosed in quotation marks (e.g., "123-456-789").

To add a valid serial number, press the plus (+) button. If you wish to purchase a serial number from the web store, click *Purchase*. When Wirecast displays the Enter Serial Number window, enter the serial number and click OK. Wirecast validates the serial number and unlocks Wirecast. If you previously purchased a copy of Wirecast and want to use that serial number, enter that serial number to unlock Wirecast.

Note: If you do not want to purchase a serial number directly in Wirecast, you can also purchase a serial number at *www.telestream.net*, or you can purchase a serial number from Telestream by phone at: 530.470.1300.

Manual Activation

If your computer is not on the Internet, you can use another computer to activate your license and unlock Wirecast. To manually activate your license, download the Manual Activation Guide at: www.telestream.net/telestream-support/wire-cast/support.htm and follow the steps in the guide to unlock Wirecast.

Deactivate Serial Numbers

Deactivating a serial number allows you to re-activate it on another computer. You can always reactivate a serial number by re-entering it. To deactivate a serial number, select an activated product serial number, and click *dash icon* (-). Wirecast deactivates the serial number and adds water-marking to the video and audio whenever licensed features are used. When you deactivate a serial number, it is removed from the table.

Click Deactivate License

Click to deactivate
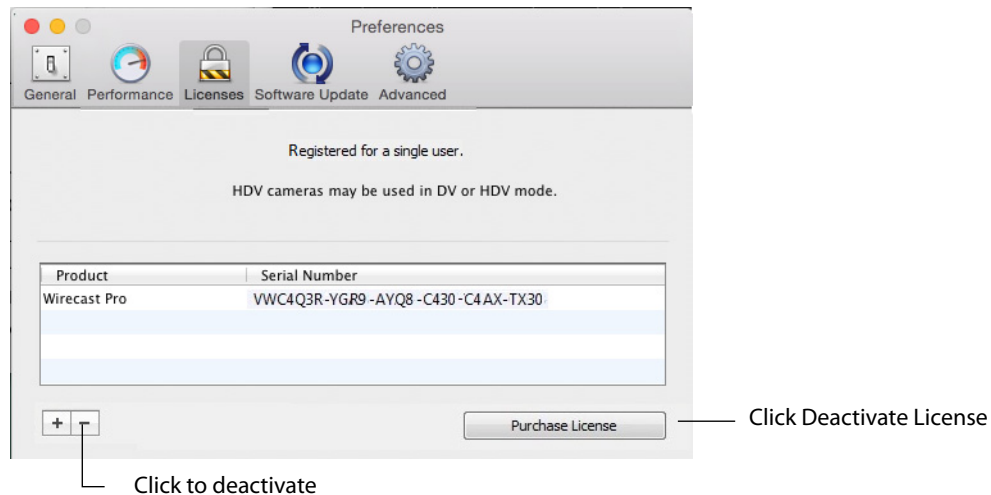
Demonstration Mode

When no serial number is entered or activated, Wirecast water-marks all output (both to disk and network). The video water-mark is a periodic overlay of the Wirecast logo. Audio water-mark is a periodic voice over. If you have a Wirecast serial number and are using a Wirecast Pro feature without a Pro license, that output is also water-marked.

Software Update

Software update preferences enable you to obtain Wirecast updates.
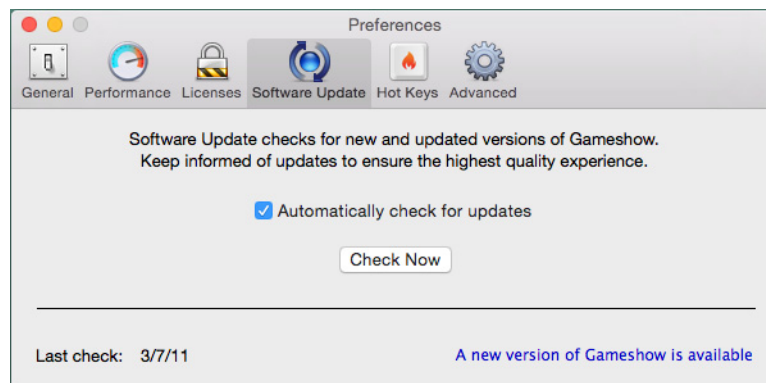
Automatically Check Updates

Check the Automatically Check For Updates checkbox to cause Wirecast to check for updates on the Telesteam Website each time Wirecast is launched. No personal information is transferred to Telesteam during this action.

Check Now

Click *Check Now* to immediately check for updates on the Telesteam Website (www.telestream.net). No personal information is transferred to Telesteam during this action.

Advanced

Advanced preferences enable you adjust advanced settings for Wirecast.
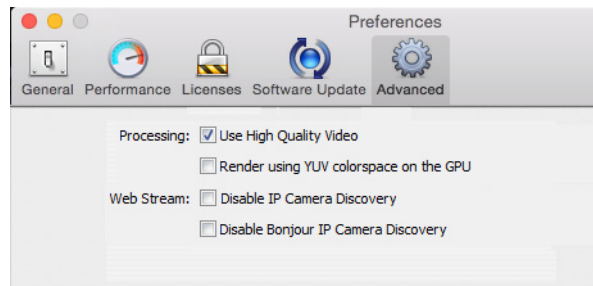
Note: Capture Device Size has been moved to the Source Settings window.

Use High Quality Video

Check the Use High Quality Video checkbox to increase the quality of decoding performed on your source media files. If CPU usage is near 95%, or if the frames per second (fps) is consistently well below your target, uncheck *Use High Quality Video* to remedy this. Checked is the default.

YUV Colorspace

If *Render using YUV colorspace* is checked, video frames will be rendered on the GPU using YUV rather than RGB. This will typically provide a performance advantage and save on memory. Performance will improve when streaming to most destinations (including Virtual Camera Out). The best way to know if this option is advantageous to use on your system is by trial and error, and observe the results.

Disable IP Camera Discovery

Check *Disable IP Camera Discovery* to turn off automatic discovery of IP Cameras.

Disable Bonjour IP Camera Discovery

Check *Disable Bonjour IP Camera Discovery* to turn off automatic discovery of sources using Bonjour.

Audio Inspector

Introduction

PRO

The Audio Inspector enables you to monitor and control all of the audio sources from a single control panel. This section describes in detail how to use the Audio inspector.

Topics

- *Overview*
- *Hardware Audio*
- *Shot Audio*

Overview

To open the Audio Inspector panel, select *Audio Inspector* from the Window menu.

PRO

Note: The use of the Audio Inspector requires a Wirecast Pro license. For licensing information, select Preferences from the Wirecast menu, click the Add (+) button, then click Purchase. Or, contact sales@telestream.net.

The Audio Inspector separates your audio by hardware and shot. Live Input is always the first section to the right of the Master control, and it contains all hardware audio sources you may be using. This includes microphones, audio input feeds, cameras,

capture cards, Web streams, etc. The remaining audio controls are associated with specific shots.

Master Audio control panel ——

Master Audio level control ——

Master Audio level display ——

Headphone Mute icon ——

Master Mute button ——
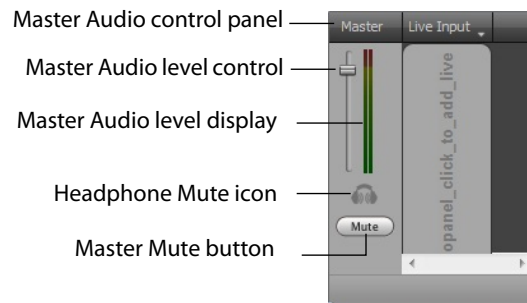
Hardware Audio and Shot Audio

The Master control sets and displays the total audio output of your broadcast. Click the headphones icon (directly below the Master controls) to mute the local audio feed. (This has no effect on the broadcast audio output.) The Mute button, below the headphones icon, mutes all local audio and all broadcast audio.

Below the name of each audio source is a white label box. You can rename this box to describe your source. To rename the audio source, click in the white box and enter the new name.

Hardware audio sources are automatically added to the Audio Inspector whenever a new audio source is added through the Main window or through the Shot Editor. You can also manually add a hardware audio source by clicking the Live Input drop-down menu at the top of the Live Input section.

Live Input control ——

Live Input drop-down menu ——

Shot control ——

—— Label box
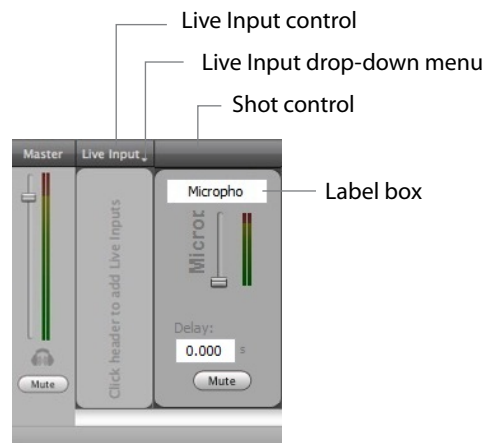
Hardware Audio

Hardware audio sources are hardware devices and live sources. This includes dedicated microphones, cameras (that have audio), audio line feeds, capture cards, etc.

Audio Delay control
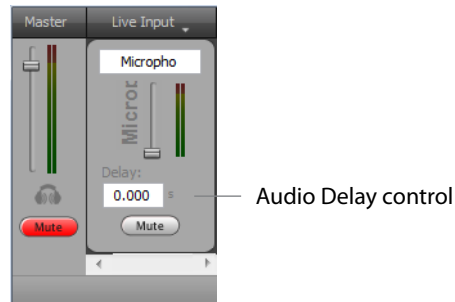
When you add a device to the Audio Inspector as a Live Input, it defaults to the lowest volume level, because all Live Input audio sources act as global audio sources through the Audio Inspector. Thus, any source listed in the Live Inputs section can be immediately added to a broadcast by dragging the volume slider on that source up.

You can set the audio delay of a live input by entering a delay value in seconds. This enables you to fine-tune audio in sources where the audio is ahead of the video.

Note: Audio that is out of sync with video is common when running a microphone directly into your computer's audio input when using a FireWire camera as a video source. Most FireWire devices create a latency that causes the audio to be ahead of the video.

Shot Audio

Shot audio sources come from shots that are currently live in your Wirecast document. Any time a shot becomes live, it immediately displays in your Audio Inspector.

Adding Shot Audio Sources

The Shot Audio panels are always displayed to the right of the Live Input panel in the Audio Inspector. Shot audio is automatically added to your broadcast whenever a shot containing audio transitions to live broadcast.

New Shot Audio controls are created as multiple shots are made live during the broadcast. For example, if you have live shots with audio sources in Master Layer 1, 2 and 3, Wirecast displays three Shot Audio panels. Each panel enables you to control the audio output of the source it controls.

Managing Audio Sources

Shot audio is most useful in controlling the audio levels during a live broadcast. You can use the sliding meters to adjust the volume levels of any source during broadcast. If a source begins contributing audio that is wrong or distorted, you can click the Mute button at any time to silence it. Its muted state is maintained even if you change shots and come back to it.

Asset Manager

Introduction

The Asset Manager is used to change the sources of media in your document.

Topics

- *Documents*
- *Reassigning Media*

Documents

Wirecast stores a path to your media in the Wirecast document. If you relocate your media, Wirecast no longer is able to find them. In this case, use the Asset Manager to reassign the new media locations. However, Wirecast does keep track of the relative path to your media. If you move both the document and media to a new position, Wirecast still finds the media.

Reassigning Media

To reassign media, follow these steps:

1. To open the Asset Manager, select *Show Asset Manager* from the Wirecast Media menu.

2. Select the media you want to assign to another source.

3. Some media assets (i.e. cameras) enable you to set the aspect ratio by displaying a Device Aspect Ratio menu. You can select an aspect ratio from this menu.

4. Select the new media from the *Assign To* menu, or click Browse and locate the replacement media on disk.

Note: When Desktop Presenter is selected as the source, you can enter the IP address for the Desktop Presenter. This enables you to build a Wirecast presentation with place-holders and then reconfigure at a later date to accommodate a new presenter

with a new Desktop Presenter as a source. Additionally, if you select a camera input source from the Media List, an additional menu to set the Device Aspect Ratio of the camera is displayed. This is useful if the image aspect ratio of your camera is not automatically picked up by Wirecast. In this case, select the correct aspect ratio from the menu, click Apply, then click the corresponding icon in the Shot Selection.

5. Click *Apply* to replace the existing media, then close the Reassign Media window.
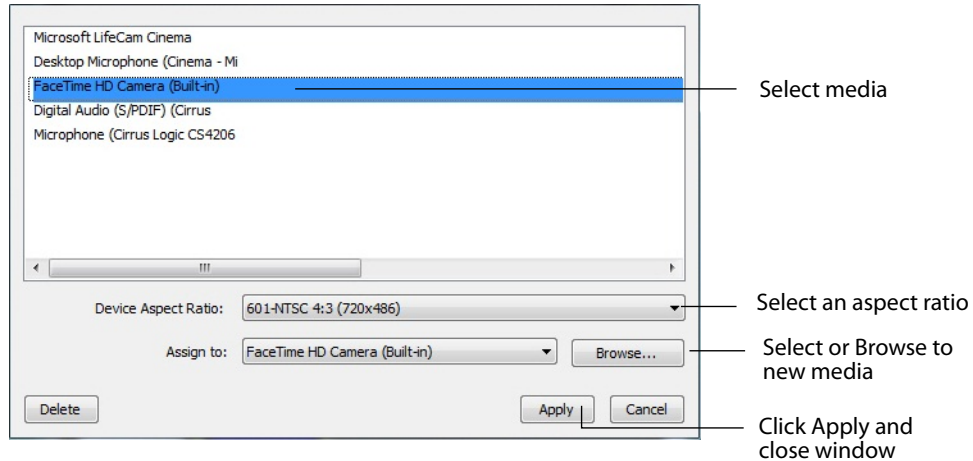
Menus and Windows

Introduction

These topics describe the menus, menu items, and keyboard shortcuts in Wirecast.

Topics

- *Wirecast Menu*
- *File Menu*
- *Edit Menu*
- *Switch Menu*
- *Media Menu*
- *Sources Menu*
- *Output Menu*
- *Layout Menu*
- *Replay Menu*
- *Social Menu*
- *Window Menu*
- *Help Menu*

Wirecast Menu

About Wirecast Displays the version you are running.

Preferences Opens the Preferences window. If the Preferences window is already open, it becomes the active window.

Services Presents the Macintosh Services available.

Hide Wirecast Hides all of the windows.

Hide Others Hides all non-application windows.

Quit Wirecast Closes all documents and exits. If the broadcast is playing, you are asked to stop the broadcast first. If a document has not been saved, you are asked to save it.

File Menu

New Creates a new, empty Wirecast document.

Open Displays the Open dialog window for opening a Wirecast document.

Open Recent Displays up to fifteen of the most recently accessed documents. Every time a document is opened or saved it is entered into this list.

Import Media Enables you to import media into Wirecast. A new shot is automatically created using the new media.

Save Saves the document. If the document has not already been saved, the Save As… dialog window is displayed.

Note: Wirecast auto-saves your stream/recording every 20 seconds.

Save As Displays the Save As… dialog window so that the document can be saved using a new file name.

Close Window Closes the currently active Wirecast window. If the window is a document, all of its Shot Editor windows are closed as well. If Wirecast is still broadcasting, you are asked to stop the broadcast. If the document has not been saved, you are asked to save the document before closing.

Edit Menu

Undo Reverses your last change in Wirecast. Undo is only available in some windows (such as the Preview window). Wirecast offers an unlimited number of undo actions (within computer memory limitations). Undo information is stored on a per-window basis. Also, if you close a window then reopen it, your undo information is lost.

Redo Reverses your last undo action. Redo is only available in some windows (such as the Preview window). Wirecast offers an unlimited number of redo actions (within your computer's memory limitations). Redo information is stored on a per-window basis. Also, if you close a window then reopen it, your redo information is lost.

STUDIO

Edit Shot Opens the Shot Editor. (See *Shot Editor*). You can also double-click a shot, or right-click and select Edit Shot, to open the Shot Editor. The Inspector window is a Shot Editor window which always edits the last touched shot. (See *Inspector vs. Editor*.)

Rename Shot Enables you to rename a shot. You can also right-click a shot and select Rename Shot.

Duplicate Shot Duplicates the currently selected shot. You can also right-click a shot and select Duplicate Shot.

Add Shot Creates a new empty shot. You can also right-click a shot and select Add Shot.

Add Playlist Shot Creates a new Playlist shot. You can also select *New Playlist Shot* from the shot menu in the layer window.

Delete Shot Deletes the currently selected shot. You can also right-click a shot and select Delete Shot.

STUDIO

Move To Layer Moves a shot to the selected layer. When shots are created, they are assigned to a specific layer. They exist on that layer until they are moved or deleted. You can also click and drag a shot to another layer.

Start Dictation Starts dictation action.

Special Characters Displays the Apple Special Characters interface.

Switch Menu

Go Performs a transition (same action as clicking the Go button).

Transitions Wirecast has two transition buttons that can be assigned any transitions (cut, smooth, etc.) that Wirecast supports. The Switch menu lists the currently assigned transitions by name. These three transitions can also be selected by pressing the control key and either the 1 or 2 key. (See *Transition Controls* to modify which transitions appear in this menu.)

Transition Speed Enables you to select one of five transition speeds ranging from Slowest to Fastest.

AutoLive Toggles (turns on and off) the AutoLive feature. AutoLive is a fundamental feature of Wirecast which enables you to control how you make shots become part of the live broadcast. (See *AutoLive*.)

Live/Preview Swap Toggles (turns on and off) the Live/Preview Swap feature. When on, the Live Broadcast and Preview windows trade panes (swap) when the Go button is clicked.

Media Menu

Start Playing All Movies Starts playing any movies that are not currently playing.

Pause All Movies Pauses all movies that are currently playing.

Show Asset Manager Displays devices that can be configured. Some devices (cameras, etc.) may be configurable. For example, you can configure an iSight camera to manually

change its focus, contrast, brightness, etc. Other devices have multiple inputs you can choose (AlchemyTV Card, etc.). (See *Asset Manager*.)

Note: The Configure Devices menu selection is present only if a device is connected to Wirecast. The configuration user interface is provided by the device maker. It is beyond the scope of this document to describe all of the features available for all devices. See the documentation provided with your device on how to configure it.

Sources Menu

PRO

New Scoreboard Opens the Source Settings window with a new (untitled) Scoreboard selected as a source. Configure the settings and click Apply to create the new source.

New Remote Desktop Presenter Opens the Source Settings window with a new Desktop Presenter selected as a source. Enter the IP address and check *With Audio* to include audio from the desktop. Click Apply to create the new source.

 If Bonjour is not installed on the computer running Desktop Presenter, you may need to manually enter the TCP/IP address of that computer. If you want to add a Desktop Presenter before it is available you can use this menu option to pre-configure your document. You can also change the IP address to a Desktop Presenter in the Asset Manager dialog.

PRO

New Web Stream Opens the Source Settings window with a new (untitled) WebStream selected as a source. Enter your user name and click Authenticate.

New Local Desktop Presenter Opens a new local Desktop Presenter. This enables you to present the whole computer display, or any selected window.

New Wirecast Cam Allows you to use an iOS device (iPhone, iPad, etc.) as a remote camera.

Show Source Settings Opens the Source Settings window. (See *Source Settings* for more detailed information on setting sources.)

Show USB Devices Opens a list of all USB devices.

Note: Since some of the Source Menu items are plug-ins, the order of the items will not always be the same.

Output Menu

Output Settings Opens the Output Settings window.

Start/Stop Broadcasting Starts (or stops) broadcasting to the network. You can also click the Broadcast button on the Window Bar in the Main Window.

Start/Stop Recording Starts (or stops) recording to disk. If you have not yet configured the Output Settings for this document, you are prompted to do so. You can also click the Record button on the Window Bar in the Main Window.

STUDIO

External Display Output Selects an external display for the output of Wirecast. For example, if you have a second monitor connected to your computer, select it from this menu to display the output of Wirecast.

If you have a dual-head graphics card, you can select the second monitor to display Wirecast Output. However, if you have two graphics cards, Wirecast may not be able to display to any devices (monitors) on the second graphics card.

Virtual Camera Out Enables you to present the output of Wirecast as if it were a camera (a virtual camera), allowing it to be automatically detected by other applications when they are launched.

Canvas Size Sets the canvas size resolution used when broadcasting a Wirecast document.

Note: You should match the output to the canvas size as close as possible to preserve video resolution and quality. For example, a 800x600 source results in significant loss of quality if a resolution of 640x480 is selected. Using 720x576, which is much closer in size, helps preserve video quality.

Layout Menu

STUDIO

Preview Shows (or hides) the Preview area in the Main window. You can also click the Preview icon in the Main window tool bar.

Master Audio Shows (or hides) the Master Audio controls.

Main Shot List Shows (or hides) the Main Shot List.

Note: The above three controls are the same as the Live/Preview Control buttons at the top of the main Gameshow window.

Go to Layer Displays the selected layer. You can also press command + Shift keys with the T, F, N, B, or A keys to select a layer. Each of these letter keys represents a layer name: Title, Foreground, Normal, Background, and Audio.

Activate layer Activate (checked) or deactivate (unchecked) a layer. You can also click the LED on the right side of each layer window.

Replay Menu

Activate Activates the Create Replay Shot system. When activated, the menu item becomes *Deactivate*. Click *Deactivate* to deactivate the Create Replay Shot system.

Replay Mark In Allows you to tighten up your Replay Shot capture. Select *Replay Mark In* to mark the beginning point of your Replay Shot capture.

Reset the Marker Select *Reset the Marker* to reset the Mark In point back to the beginning of the video clip.

Create Replay Shot Captures a Replay Shot. The duration of the shot is set in the Replay Settings.

Settings Displays the Replay Shot settings window.

For more information about Replay Shots see *Replay*.

Social Menu

Message Feed Brings up the Social Media dialog.

Create Shot Creates a shot with a social media title in Master Layer 1.

Settings Brings up the Social Media Settings dialog.
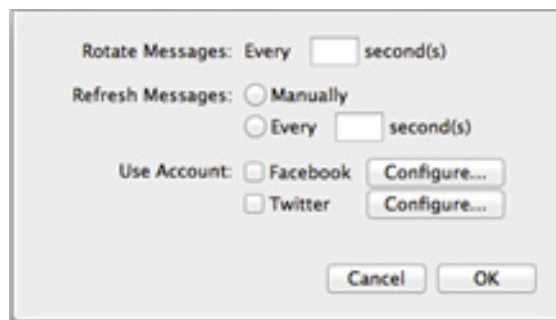
- **Rotate Messages** Enter the number of seconds that messages rotate into the title.
- **Refresh Messages** You can choose to manually refresh your message list, or have it automatically refreshed at the rate you enter (in seconds).
- **Use Account** You can choose to receive messages from Facebook, Twitter, or both.

•

Window Menu

Minimize Minimizes the front-most window.

Zoom Maximizes the front-most window (zooms to the full size of the screen).

STUDIO

Inspector Opens the Inspector window. There is only one Inspector window for each document. The Inspector is very similar to the Shot Editor, except it always edits the last shot touched.

STUDIO

Encoder Presets Opens the Encoder Presets window.

PRO

Audio Inspector Opens the Audio Inspector window.

STUDIO

New Layer Window Opens a new Master Layer window for the layer selected.

STUDIO

Camera Preview Shows a preview of all cameras currently connected to your computer. Click the *Add Camera* button to add a camera to the preview window. Use the *Adjust fps* (frames per second) slider to adjust how realistically the camera image responds to motion. (Keep in mind that the greater the fps the greater the processing power required to render the preview.) Use the *Adjust Size* slider to change the size of the camera image. You can also right-click on any camera preview source and select *Remove*.

Add Camera

Right-click to remove source

Adjust fps

Adjust Size
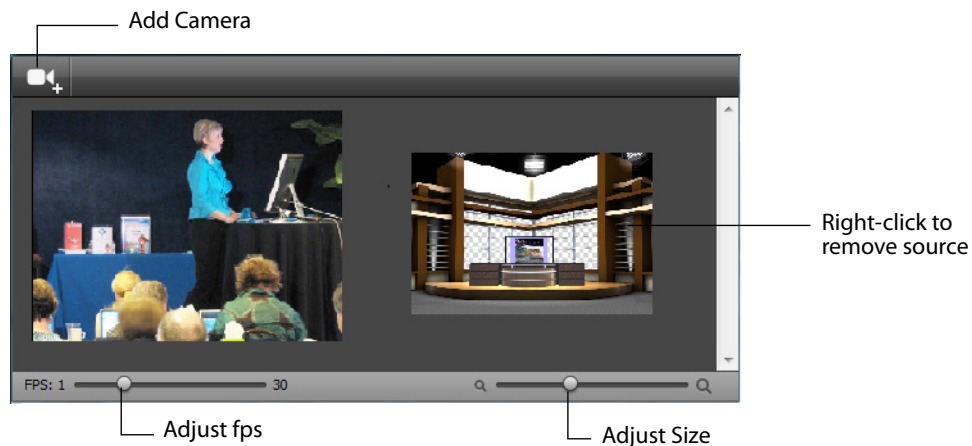
Help Menu

Search Enables you to search the help system for any topic or key word.

Wirecast Help Opens the online help version of the User Guide.

Open Wirecast PDF User Guide Opens the PDF version of the User Guide.

Open Tutorial HTML Opens the Wirecast Tutorial in your browser. To follow the tutorial, you'll need to Create a Document for the Tutorial as well.

Create Document for Tutorial Creates a new Wirecast Document which contains the media necessary for following the Tutorial.

Buy/Upgrade Opens *Buy Upgrade* in the Preferences window. This window allows you to purchase licenses and to activate or deactivate them.

Provide Feedback Opens the Telesteam Website feedback page where you can enter any feedback you may have about our product or company.

Send Support Information Opens a Support Assistant dialog window. To create a new support ticket, select *Create a support ticket*. The information is sent to the Telesteam support team for evaluation. If you have been previously issued a case number, select *Link with existing support case #* and enter your case number. You can also select *Do not receive follow-up from Telestream*. This enables you to send support information to Telestream without receiving a response. Click *Save Report* to save the information to a file on your computer. Click *Send Report* to send the information to Telestream.

Note: You must click *Send Report* to create a ticket. If you click *Save Report*, a ticket will not be created.

Visit Telesteam Website Opens the Telesteam Website home page.

Visit Wirecast / Desktop Presenter Download Page Opens the Telesteam Website download page for Desktop Presenter.

Acknowledgments Opens an on-line help to acknowledgments.

Broadcasting

Introduction

Note: Wirecast will not prevent your computer from entering sleep mode. Therefore, to ensure uninterrupted streaming, you should disable sleep mode on your computer while using Wirecast.

Note: To avoid a decrease in video quality, Wirecast should not be used at CPU usage above 80%. See the Telesteam Website for suggested configurations.

Topics

- *Canvas Size*
- *Virtual Camera*
- *Output Settings*
- *Encoder Presets*
- *Flash RTMP Server*
- *Flash RTMP Server*
- *Flash To Akamai*
- *Flash To Microsoft Azure, Brightcove, Limelight, Sermon.net, Verizon Digital Media Services.*
- *Flash To Bambuser, Churchstreaming.tv, DaCast Streaming Services, High School Cube, Livebeats, make.tv, Meridix Sports Network, Netbriefings, ShowCaster, Streaming Media Hosting, StreamVu, Stretch Internet, Sunday Streams, Tulix, Ustream*
- *Flash To Microsoft Azure, Brightcove, Limelight, Sermon.net, Verizon Digital Media Services.*
- *Flash To Zixi*
- *Flash To Facebook*
- *Flash To YouTube*

   ■ *Streaming*
   ■ *Record To Disk*

Canvas Size

The first menu item in the Output menu is Canvas Size. When *Output > Canvas Size* is selected, a drop-down menu with various canvas sizes is displayed allowing you to select the canvas size you want. You can also select *Auto*. This automatically sets the canvas size to the highest resolution that was selected when the encoder was chosen.
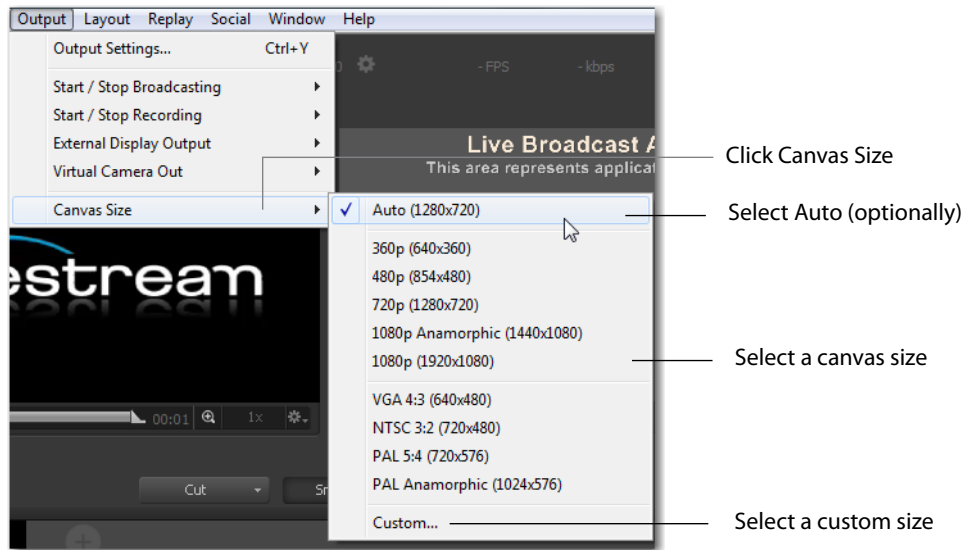
Note: Canvas size selection *1080p Anamorphic (1440x1080)* is a narrower (1440) display stretched to display as 1080.

There is also a *Custom* option that enables you to set the canvas width and height.
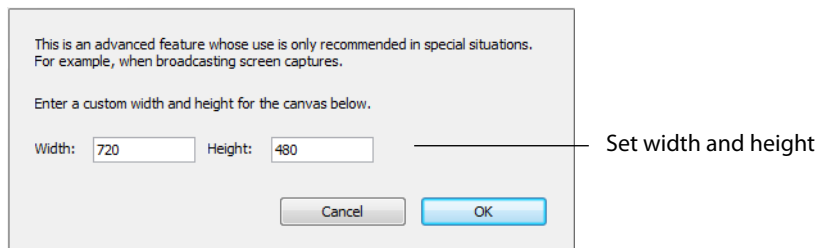
Wirecast can manage a wide variety of input sources, enabling you to have several live camera sources. However, really high-quality video sources can cause more harm than good. For example, an HD camera feed into a Wirecast canvas that is set to HD resolution and then broadcast out in HD, requires a lot of work for the graphics processor. If the frame rate starts to drop but the CPU usage stays steady, it creates a

bottleneck. The solution is to reduce the frame size going through Wirecast. Therefore, there is no need to bring input video in at HD resolution if Wirecast is streaming out a lower resolution.

Keep in mind that resizing down is good but resizing up reduces quality. As a rule, you should try to keep your resolution as constant as possible from source to output. There is no benefit from using an HD camera if you're only broadcasting a low resolution stream. This only increases the work your computer must do without any increase in output quality.

Virtual Camera

Wirecast enables you to present the output of Wirecast as if it were a camera (a virtual camera), allowing it to be automatically detected by other applications when they are launched. To setup Wirecast as a virtual camera, select *Output* > *Virtual Camera Out,* then select the output resolution to use. You can also select *Match Canvas* to cause the resolution to be the same as the current canvas size.
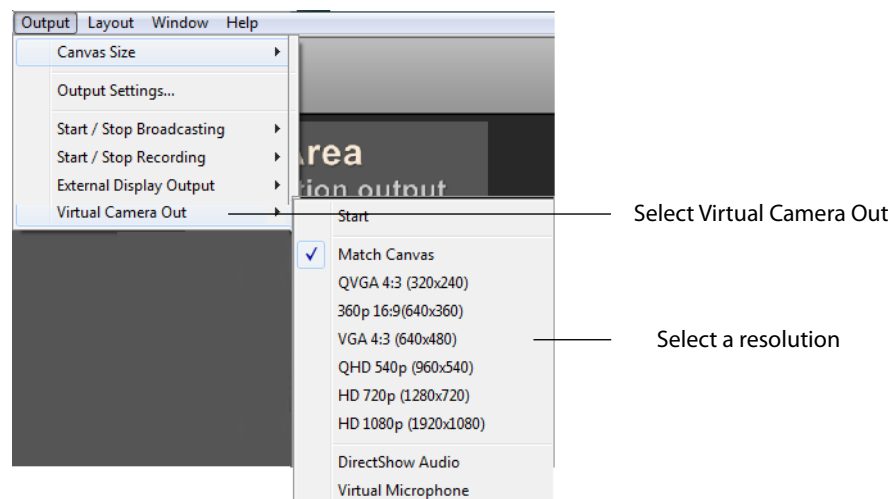
Once you have selected an output resolution, select *Start* to make Wirecast output available to other applications on your computer.

Some of the applications Wirecast can work with using virtual camera are:

- Google+ Hangouts
- Skype
- GoToMeeting

Note: Virtual Camera only works with one application at a time.

The Virtual Camera menu also provides two additional options: *DirectShow Audio* and *Virtual Microphone.*

DirectShow Audio When selected, outputs DirectShow audio.

Virtual Microphone When selected, enables you to present the audio output of Wirecast as if it were a microphone (a virtual microphone), allowing it to be automatically detected by other applications when they are launched.

Note: After selecting Virtual Microphone, you must re-start Wirecast to enable Virtual it's operation.

Note: Virtual Microphone can only be installed during Wirecast installation.

Output Settings
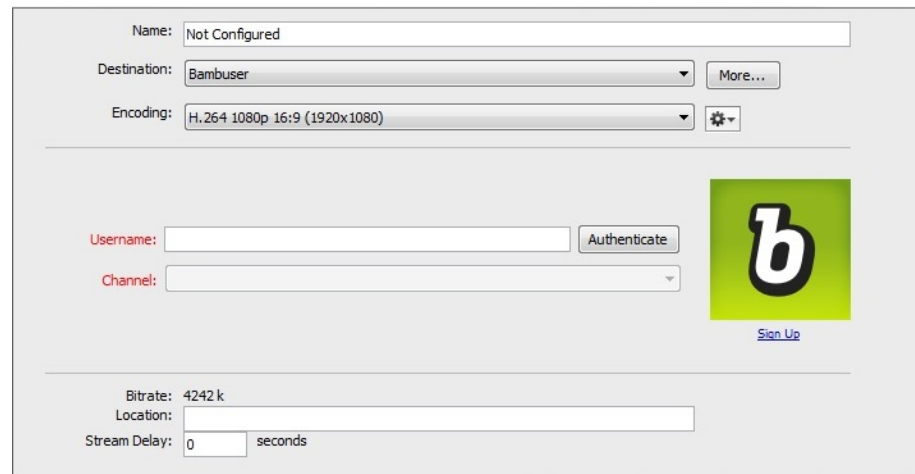
To configure output settings select *Output > Output Settings*. When the dialog box displays, select a destination. Click OK to open the Output Settings window.

Select Destination

Click OK
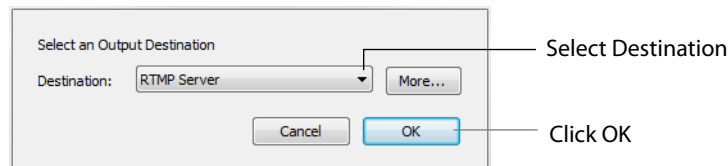
You can also click *More* to display a list of all available destinations. Check the checkbox for each destination you want to include in the destination menu list.

Check destinations to include them in Destination menu list
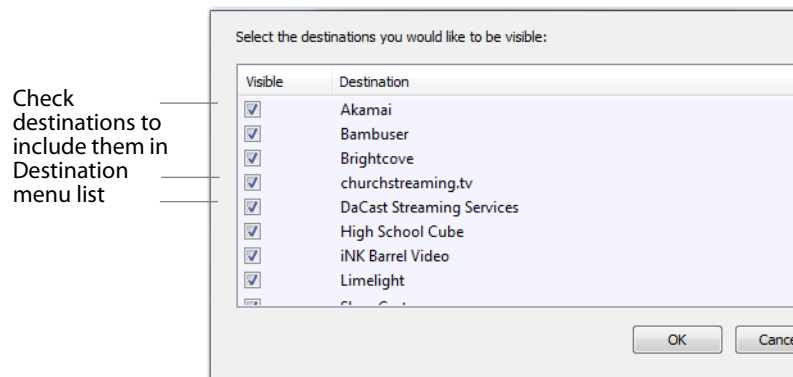
The Output Settings window displays the destination you selected. Each destination window has a unique set of controls including a way to authenticate your connection.

Multiple Output Settings

Wirecast enables you to specify many output settings for your presentation. This means you may configure Wirecast to broadcast multiple data rates simultaneously, or even broadcast and record with different encoders at the same time. You can also broadcast to multiple Flash destinations while recording to disk.

At the top of the Output Settings window is a list of the current settings. Uncheck the checkbox of any setting you want removed from your broadcast. You can add as many output settings as you need, but keep in mind that each additional destination will require more system resources.

Click the Gear icon to access actions that enable you to create reference movies you can distribute to your viewers. Each destination type provides a unique set of actions.

Configuration

There are two items to configure before broadcasting: Destination and Encoding.

When you broadcast with Wirecast, you must pre-configure at least one destination. A destination can be a broadcast server, content distribution network or local disk recording.

Each encoding preset uses a different broadcast technology (Flash, Windows Media, etc.). The destinations described below depend on the Encoder Presets you have chosen.

The *Encoder* determines how your presentation is encoded (or compressed). There are many options available. Wirecast simplifies this process by providing several simple presets to choose from. (See also *The Encoder Presets Window*).

Encoder Presets

The Encoder menu is located near the top of the Output Settings window. The Destination menu is located above the Encoder menu. The More button and Gear menu provide optional settings.
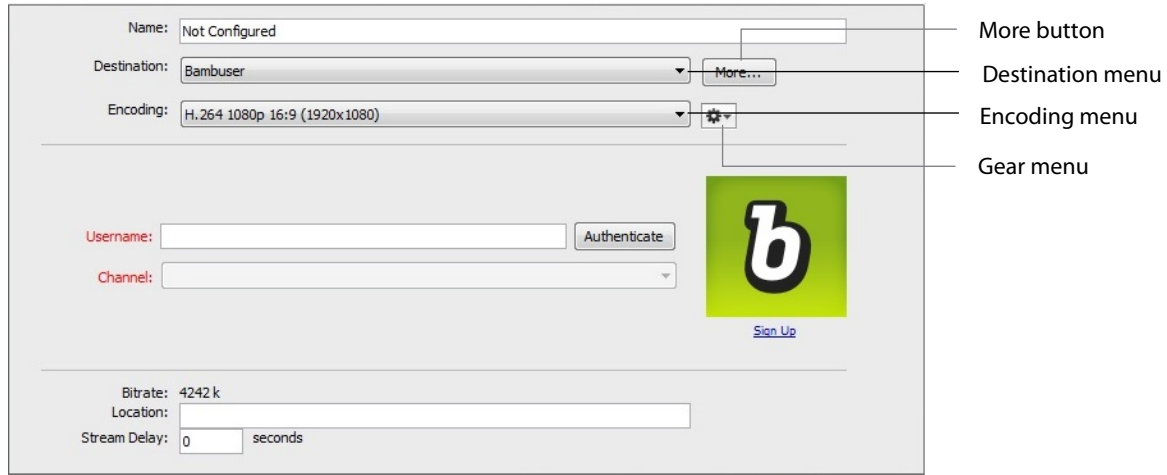
More Click *More* to display a list of all available destinations. Check the checkbox for each destination you want to include in the destination menu list.
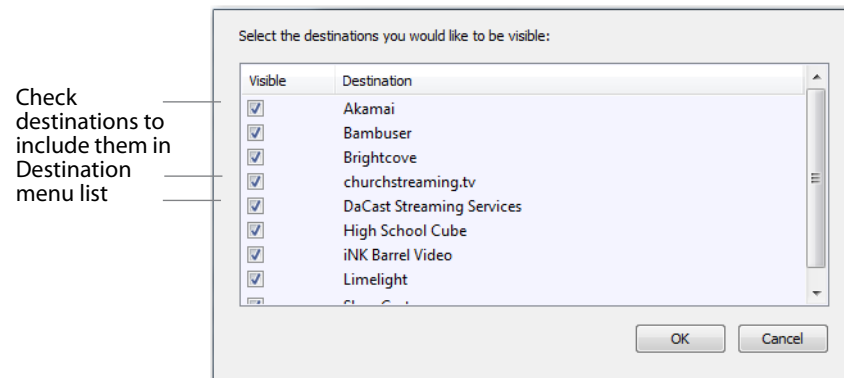
Filter Select *Filter* from the Gear menu to display a check list of encoder presets. Check the presets you want to display in the Encoder presets menu. Click *Save* when finished.
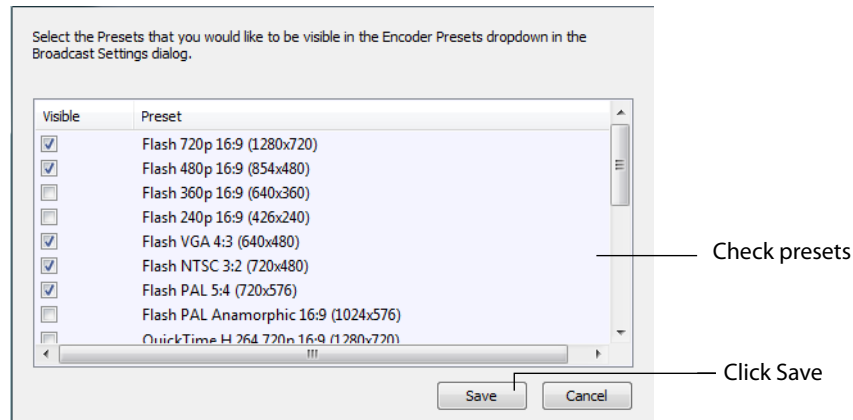
New Preset Select *New Preset* from the Gear menu to create a new encoder preset. Enter a name for your new preset and click OK. (See *Creating New Presets*).
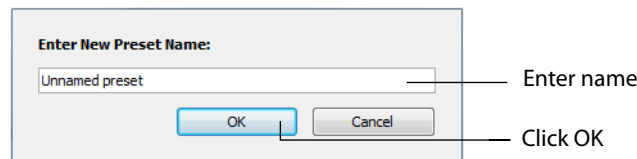
View Details Select *View Details* from the Gear menu to modify an encoder preset. (See *Creating New Presets*). One important option is Strict Constant Bitrate. When checked, the bitrate is strictly held at the bitrate entered in *Average bit rate*.
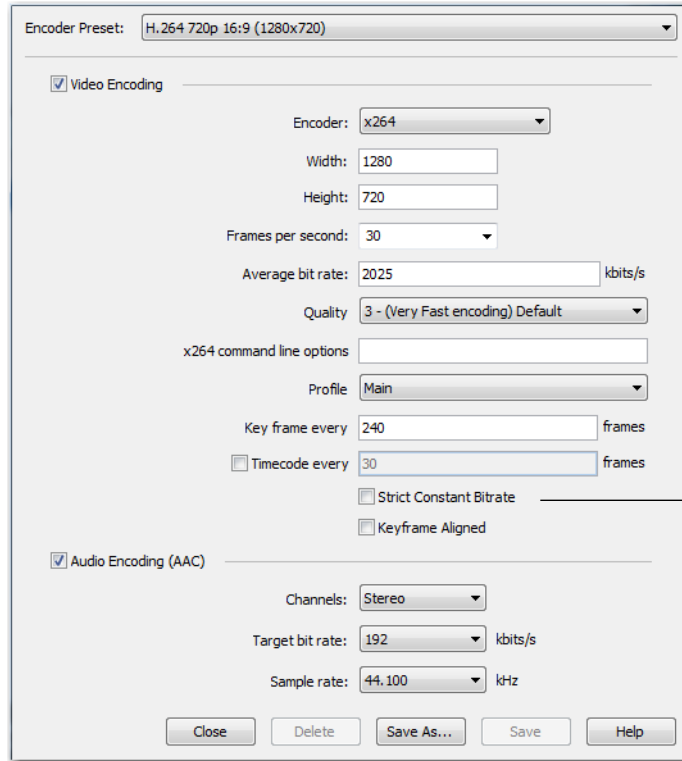
More Click the *More* button to display a check list of destinations. Check the destinations you want to display in the Destination menu. Click *Save* when finished.
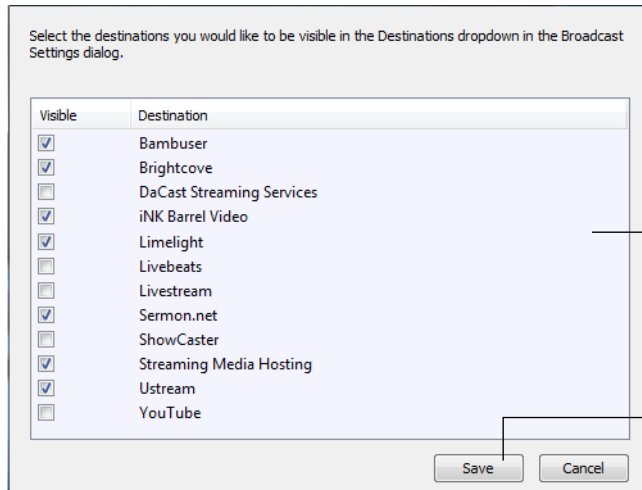
Multicast and Unicast

You can select Multicast or unicast from the Destination menu. Multicast lets you broadcast to multiple computers simultainiously. Unicast lets you broadcast to a specific computer.
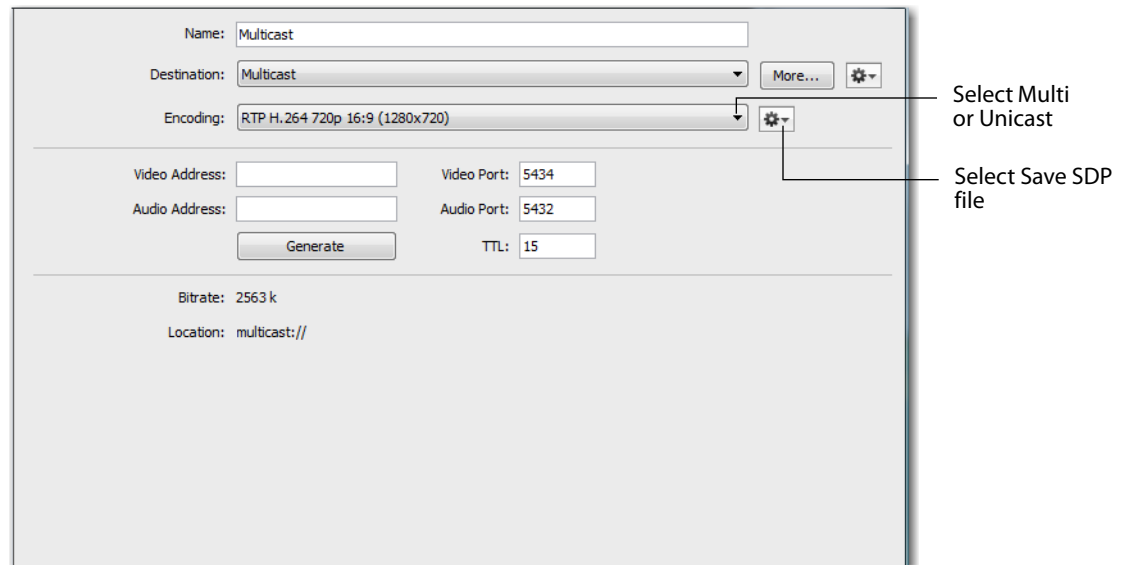
You need to create an SDP File, and you must do so every time you change any option on this page (including the encoder preset). To create an SDP file click the gear icon and select *Save SDP File*, navigate to the desired location, and click *Save* in the Save File dialog window. The SDP file must be given to the user to place on the computer that receives your broadcast.

During multicast, your broadcasting computer sends data across your local network, identifying it as a broadcast that it has no specific destination. Since many applications could be doing the same thing, the broadcasting computer must have a unique way of defining the data that is being multicast. This enables clients to choose between the available multicast streams.

The multicast protocol uses unique addresses, one for video and one for audio. Although these unique addresses look like TCP/IP addresses, they are not. Instead, they provide a way to define uniqueness among all multicast data flowing over the network. Once the broadcasting computer is streaming this data through the local network, any computer on the network can receive it.

The SDP file becomes the glue between your broadcast computer and the viewer computers. The SDP file contains multicast addresses, encoding format, and other important information.

Flash RTMP Server

Wirecast can stream to an RTMP/ H.264-compatible streaming server (Flash Media Server, Wowza Media Server, etc.). Flash Players earlier than Flash 9, Update 3 (Dec 2007), may not be able to view the H.264 based streams.

To configure Flash Media Streaming, follow these steps:

1. Select Destination > RTMP Server.

2. Select an encoder.

3. Enter the Address to the RTMP server. (This is the same as the FMS URL in Flash Media Server.) The default RTMP port is 1935, but you may need to configure your firewall to allow connections on this port.

4. Wirecast can import a Flash Media Encoder configuration file (XML file). Click Open FMLE XML File, and navigate to the configuration file and select either version 2.5 or version 3.0. Wirecast reads the Address and Stream information from that file. Many online streaming services offer FMLE configuration files which Wirecast can use.

Note: Only the Address and Stream information from the XML configuration file is used. No Encoding information is imported.

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5. Click OK to save your settings:
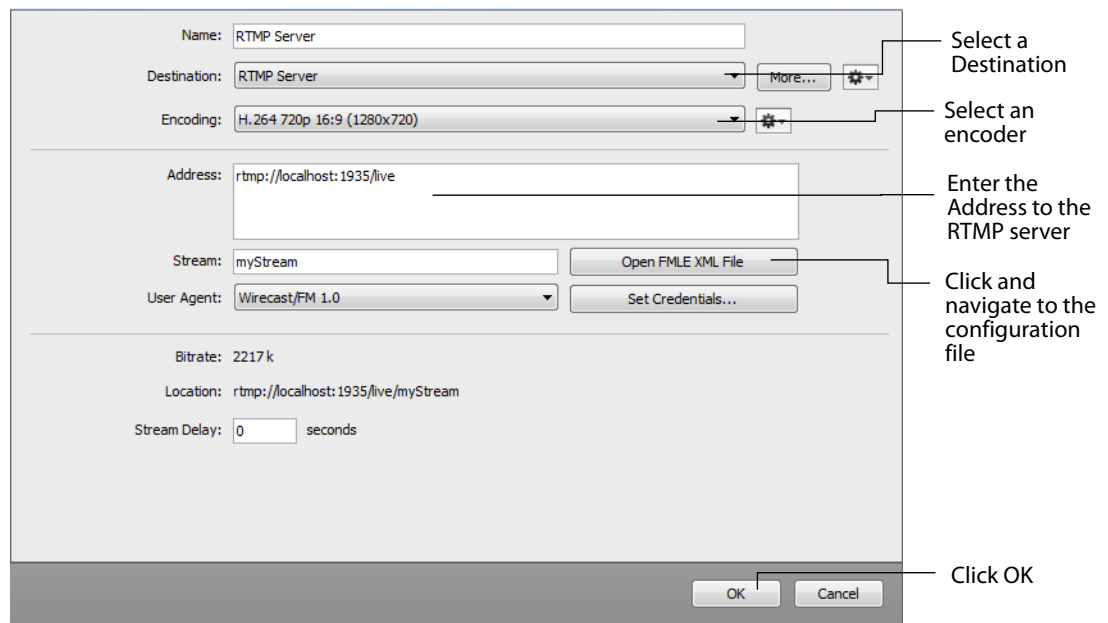
CDN Partners

Listed below are the Content Distribution Network (CDN) partner destinations available in Wirecast. Most destinations share a common user interface and only require a user name and password. Destinations that do not conform to this paradigm, or require additional parameters, are presented separately.

Note: The list of CDN partners in Wirecast is subject to change at any time.

Flash To Bambuser, Churchstreaming.tv, DaCast Streaming Services,   High School Cube, Livebeats, make.tv, Meridix Sports Network, Netbriefings, ShowCaster, Streaming Media Hosting, StreamVu, Stretch Internet, Sunday Streams, Tulix, Ustream

To stream to one of these CDN partners, follow these steps:

1. Select a CDN partner from the Destination menu.
2. Select an encoder.
3. Enter your username.
4. Click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default RTMP port is 1935. You may need to configure your firewall to enable connections on this port.

Note: If you do not have a username and password, you can sign up with a CDN partner by clicking *Sign Up*.

5. Select your channel.
6. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is displayed when you enter the amount of delay.

7. Click OK when finished.

Select a CDN partner

Select an encoder

Enter user name

Click Authenticate and enter password

Select Channel

Enter delay (optionally)

Click OK

Flash To Microsoft Azure, Brightcove, Limelight, Sermon.net, Verizon Digital Media Services.

To stream to one of these CDN partners, follow these steps:

1. Select a CDN partner from the Destination menu.

2. Select an encoder.

3. Enter the domain name or IP address (this is provided by the CDN partner).

4. Enter the stream name of your broadcast (this is provided by the CDN partner).

5. Click *Set Credentials* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default RTMP port is 1935. You may need to configure your firewall to enable connections on this port.

Note: If you do not have a stream name and password, you can sign up with the CDN partner by clicking *Learn More*.

6. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is displayed when you enter the amount of delay.

7. Click *OK* when finished.

Flash To Akamai

To stream to Akamai, follow these steps:

1. Select *Akamai* from the Destination menu.

2. Select an encoder.

3. Enter your Akamai Stream ID and Event Name.

4. Enter your Akamai Angle and Video Rate.

5. Enter your user name.

6. Click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default RTMP port is 1935. You may need to configure your firewall to enable connections on this port.

Note: If you do not have a username and password, you can sign up with Akamai by clicking the Akamai icon, or by clicking *Sign Up*.

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7. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is displayed when you enter the amount of delay.

8. Click OK.

Flash To TwitchTV

To stream to TwitchTV, follow these steps:

1. Select *TwitchTV* from the Destination menu.

2. Select an encoder.

3. Enter your TwitchTV username.

4. Click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default RTMP port is 1935. You may need to configure your firewall to enable connections on this port.

Note: If you do not have a username and password, you can sign up with TwitchTV by clicking the TwitchTV icon or by clicking *Sign Up*.

5. A default path is automatically provided for the RTMP Ingest URL. Use this URL unless you have received a different one from TwitchTV.

6. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is displayed when you enter the amount of delay.

7. Click *OK* when finished

Field	Value	
Name:	Not Configured	Select TwitchTV
Destination:	TwitchTV	More...
Encoding:	Twitch 540p30	Select Encoder
Username:		Authenticate — Enter Username
RTMP Ingest Url:	rtmp://live.twitch.tv/app	twitch — Click Authenticate
	Find the closest ingest server	Sign Up — and enter password
Bitrate:	1596 k	
Location:	rtmp://live.twitch.tv/app :	
Stream Delay:	0 seconds	Enter delay (optionally)

Flash To Zixi

To stream to Zixi, follow these steps:

1. Select *Zixi* from the Destination menu.

2. Select an encoder.

3. Enter Zixi connection information.

4. Enter your Zixi channel name and password.

5. Click *apply* to generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default RTMP port is 1935. You may need to configure your firewall to enable connections on this port.

Note: If you do not have a username and password, you can sign up with Zixi by clicking the Zixi icon, or by clicking *Sign Up*.

6. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is displayed when you enter the amount of delay.

7. Click *OK*.

Name: Not Configured	Select YZixi
Destination: Zixi [More...] [⚙▾]	Select an encoder
Encoding: H.264 720p 16:9 (1280x720) [⚙▾]	
Broadcaster Address:	Enter Zixi connection info
Broadcaster Port: 2088	
Latency [milliseconds]: 4000	
Channel Name:	Enter Channel Name and Password
Password:	
Apply	Click Apply
Bitrate: 2217 k	
Location:	
Stream Delay: 0 seconds	Enter delay (optionally)

Flash To Facebook

To stream to Facebook, follow these steps:

1. Select Facebook from the Destination menu.

2. Select an encoder.

3. Click Authenticate and Login to Facebook.

4. Enter Facebook connection information.

5. Select Page and Privacy settings

Note: If you do not have a username and password, you can sign up with Facebook by clicking the Facebook icon, or by clicking *Sign Up*.

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6. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is displayed when you enter the amount of delay.

7. Click *OK*.

Flash To YouTube

Note: Custom encoders cannot be used to stream to YouTube. They may only be used to encode a recording to disk.

To stream to YouTube, follow these steps:

1. Log into your YouTube account using your browser.

Note: If you do not have a YouTube account, click *Sign Up* (or go to www.youtube.com).

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2. Check (optionally) *Automatically Start Event* to automatically start your event on YouTube when you start streaming. Click the plus (+) icon to add a new event.
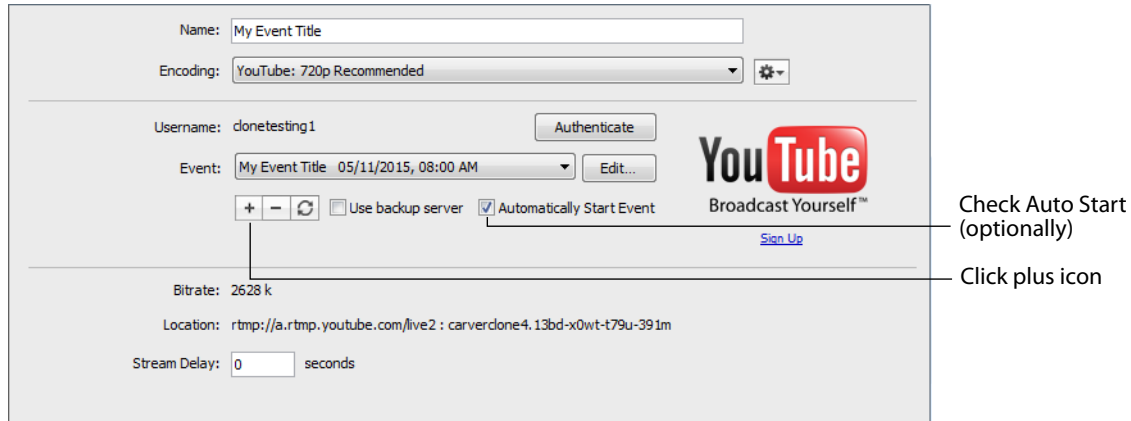
3. Enter all of your event information and click *Save*.
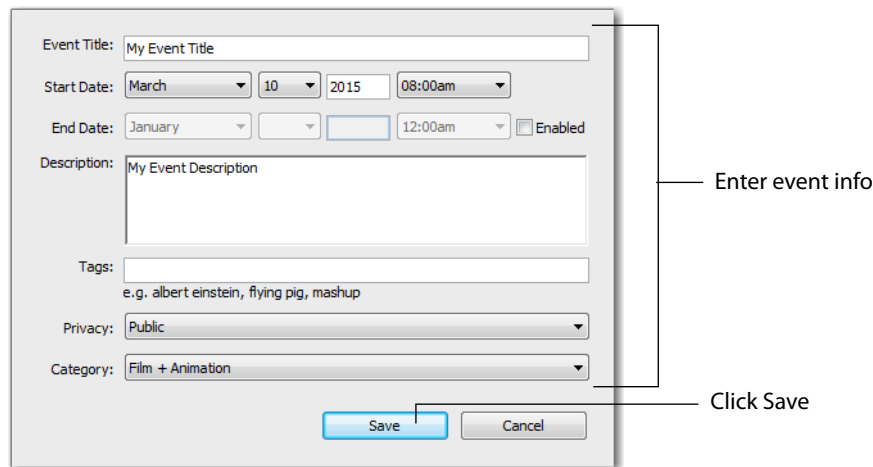
4. When the event you created appears in the Event menu box, you can (optionally), enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is displayed when you enter the amount of delay. You can also click

the Refresh icon to update the event menu list, and you can click the minus icon (-) to remove a selected event. Click *Authenticate* when you are finished.
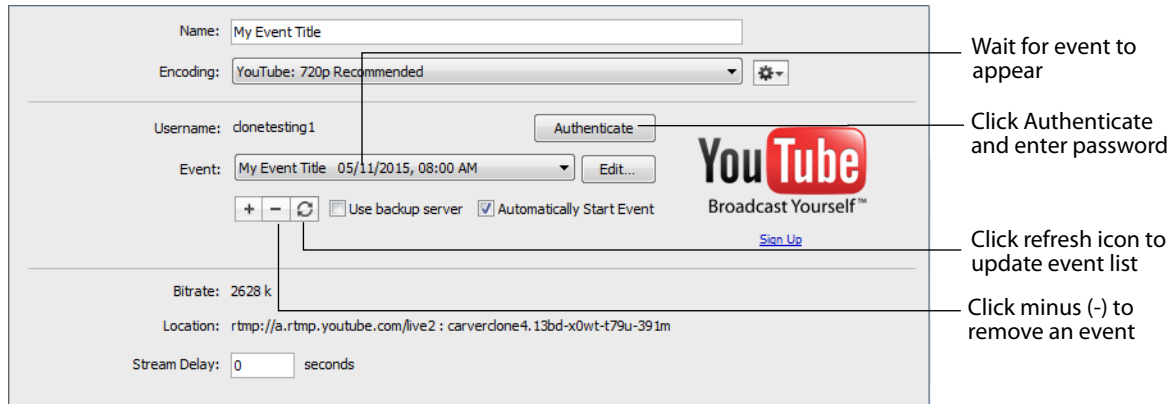
Note: If you are not already signed in, an OAuth window is launched enabling you to sign into your YouTube account. Enter your account information and click *Sign In*.

5. When the permission window displays, click *Accept* to authenticate your account.
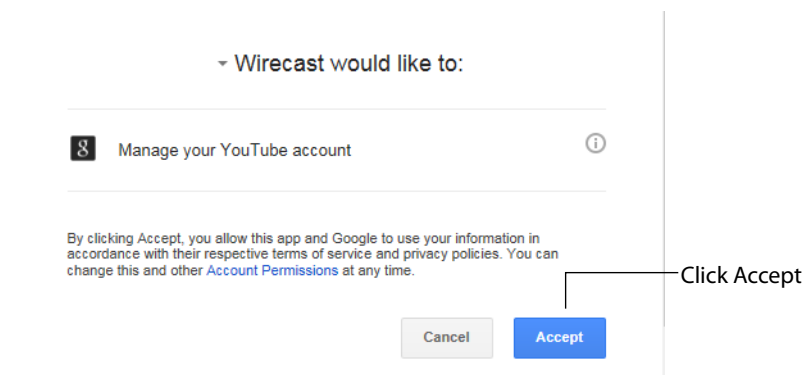
6. Click the *Stream* button to start streaming.
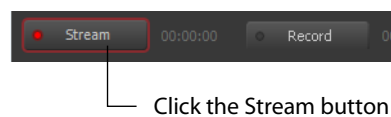
7. If you did not check the *Automatically Start Event*, then you will have to start your event manually. To do this, select *Output > Control Room* to bring up the YouTube Control Room in a browser. Click the *Preview* button, and then click the play icon in

the preview window to see your stream. (It may take some time for the preview display to show your stream).

Click the Preview button

Click the play icon

8. After you have previewed your stream, click *Start Streaming.*

Click Start
Sreaming
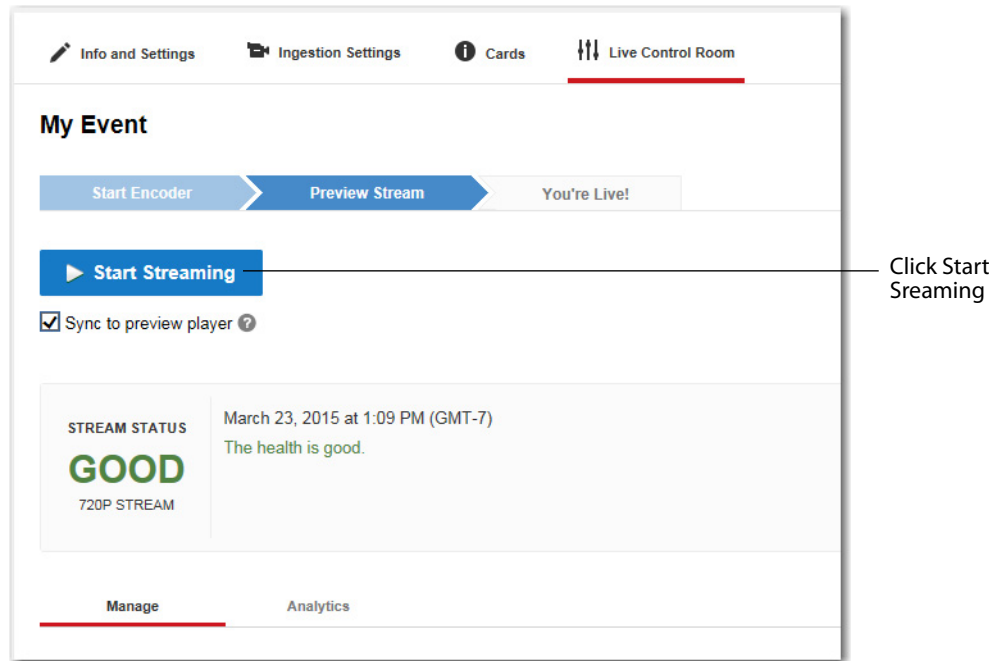
9. It may take some time for your stream to actually go live as a broadcast, but when it does you can view it by selecting *Output > Active Broadcast*, which opens the YouTube active broadcast window in a browser. If your broadcast has been scheduled for a future time, a standby window with a count down timer will be displayed.
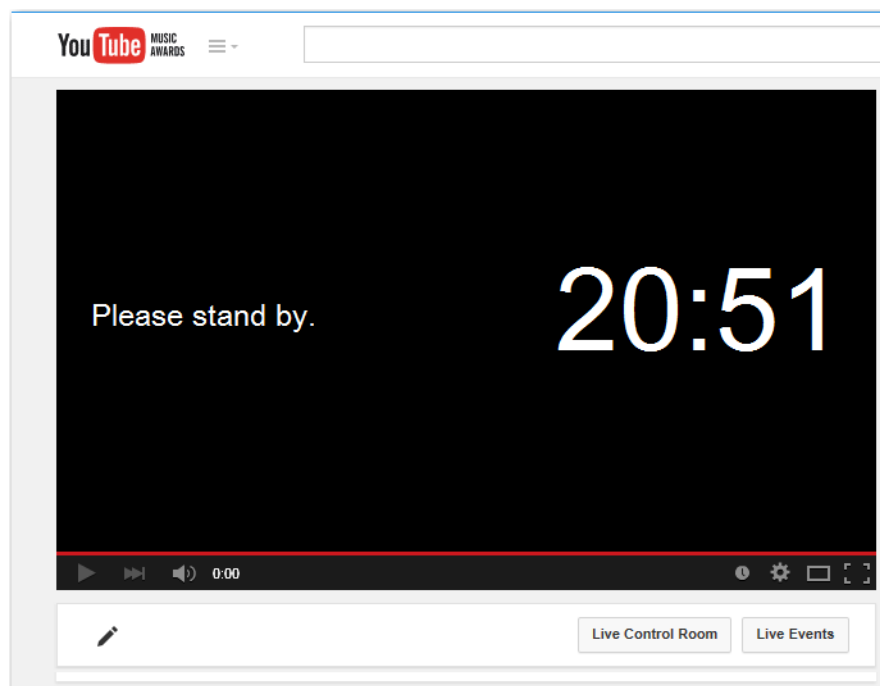
10. Select *Output > VOD of Last Broadcast* to open a YouTube page containing the recording of the last completed broadcast. You may need to wait for the recording to finish processing if it does not begin playing immediately.

To stream your presentation, click the *Stream* button at the top of the Main window.

Click Stream — | Click Record

Stream 00:00:00 Record 00:00:00

If you have not already selected a destination and logged into it, a dialog box displays. Select a destination, log in when asked to do so, then click OK.

Select an Output Destination | — Select Destination
Destination: RTMP Server ▼ More...
Cancel OK — Click OK

The Stream LED will blink until a connection is made. Once you are connected the LED turns full on and a red box is placed around the Stream button. If you cannot connect an error message will display.

Stream 00:00:00 Record 00:00:00

— Red LED and red box

Connection strength bars are displayed on the right. Fewer bars indicates a weaker (slower) connection.

CPU: - % Connection: ‖‖‖ — Green connection strength bars

If the connection is ever broken, the green bars are reduced to a single red bar, then immediately a *no connection* icon is displayed in place of the bars.

CPU: - % Connection: ⊘ — *No connection* icon

When the connection recovered, the *no connection* icon is replaced with the green bars.

Click *Stream* again to stop streaming. You can also record your broadcast by clicking *Record*. When you stop streaming, if you

Your Event 'My Event Title' is still Live, would you like to Complete the Event at this time?

Once an Event has been completed, you can no longer restart it.

Complete Event | Don't Complete

Streaming

You can stream your broadcast to your service provider. To do this, click the *Stream* button at the top of the Main window. You can also record your streaming by clicking the Record button .

Click Stream   Click Record

If you have not already selected a destination and logged into it, a dialog box displays. Select a destination, log in when asked to do so, then click OK.

Select Destination

Click OK
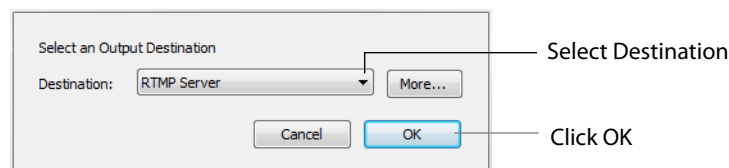
If you click the plus (+) button to create a new event, the New Event window displays. Enter your new event information and click *Save*.

The Stream LED will blink until a connection is made. Once you are connected the LED turns full on and a red box is placed around the Stream button. If you cannot connect an error message will display.

Red LED and red box

Connection strength bars are displayed on the right. Fewer bars indicates a weaker (slower) connection.

Green connection strength bars

If the connection is ever broken, the green bars are reduced to a single red bar, then immediately a *no connection* icon is displayed in place of the bars.

No connection icon

When the connection recovered, the *no connection* icon is replaced with the green bars.

Click *Stream* again to stop streaming. You can also record your broadcast by clicking *Record*.

Record To Disk

If you want to archive your stream, you can use the Record To Disk destination.

Note: Wirecast auto-saves your Stream/recording every 20 seconds.

To record to disk, follow these steps:

1. Click the Record button at the top of the Wirecast Main window.
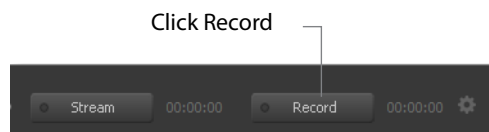
Click Record

2. When the dialog box displays, select *Record to Disk* and click *OK*.

Select Record to Disk

Click OK
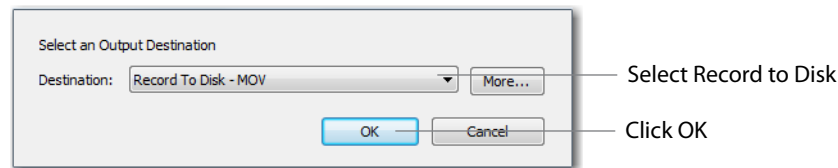
3. When the Output Settings window displays, Select *Record To Disk* (for MP4 or Windows Media, MOV)

4. Select an encoder.

5. Click Browse or enter the path to where you want your recording located.

6. Check the Auto Increment Filenames checkbox (optionally), if you want your filename to have an incremental number appended to the end of it. This causes a new file to be created every time you start recording to disk. If you do not check this checkbox, then your previous file is overwritten.

7. Click OK.

Name:	Record To Disk - MOV
Destination:	Record To Disk - MOV ▼ More... ⚙▼	→ Select Record To Disk
Encoding:	MJPEG 720p 16:9 (1280x720) ▼ ⚙▼	→ Select an encoder
File:	C:\Users\carlj\Videos\MyStream.mov	→ Enter filename or navigate to file Location
	☑ Auto Increment Filenames Browse...	→ Check Auto Increment Filename (optionally)
Bitrate:	2217 k
Location:	C:\Users\carlj\Videos\MyStream.mov
	OK Cancel	→ Click OK
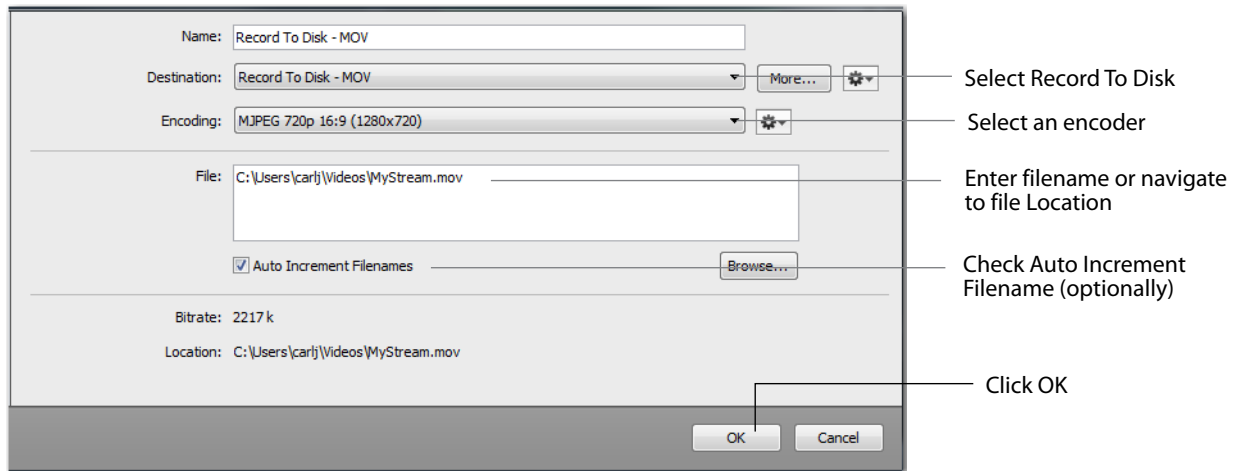
Note: When recording to disk on FAT32 formatted drives, single files cannot be larger than 4GB in size. So, recording to disk on a FAT32 formatted drive may result in files that do not close properly if they exceed 4GB in size. It is recommended that you record to disk on a Mac OS X Extended formatted partition whenever possible.

Encoder Presets

Introduction

STUDIO

Wirecast supports a wide variety of encoders (also known as codecs).

An encoder is a program that compresses the audio and/or video output of Wirecast for broadcast. Without an encoder, the uncompressed data is too large to successfully broadcast across a network. This is why encoders are so important.

The settings for encoders range from simple to very complex. Because of this, Wirecast offers presets of the most common settings for encoders. This provides a starting point, reduces complexity, and enables you to experiment and adjust settings as you test your broadcast.

Note: Encoder Presets can also be edited from the Output Settings window. To do this select *Output > Output Settings*, click the gear icon, then choose *View Details* from the drop-down menu.

Topics

- *The Encoder Presets Window*
- *MainConcept H.264*
- *x264*

The Encoder Presets Window

To open the Encoder Presets window, select Window > *Encoder Presets*. The Encoder Preset menu at the top of the window provides a list of encoder presets. Select a preset to edit.
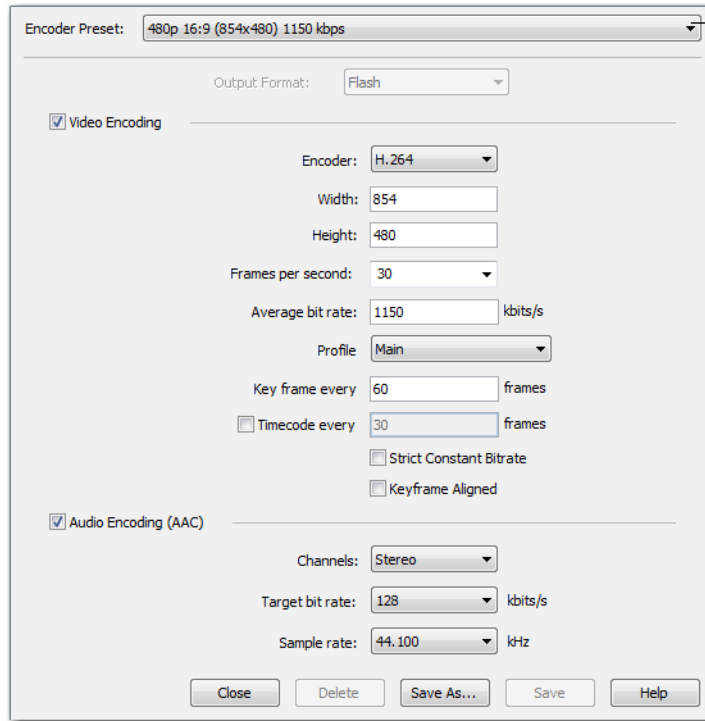
Select an encoder preset

Creating New Presets

The default encoder presets cannot be changed. However, you can make a copy of any preset, modify it as needed, and save it under a new name. You can refer back to the default presets at any time since they are never modified.

To create a new preset, you must make a copy of an existing preset. To do this, select an existing preset from the Encoder Presets menu that is close to what you need, change settings as needed, then click *Save As* to save the preset with a new name.
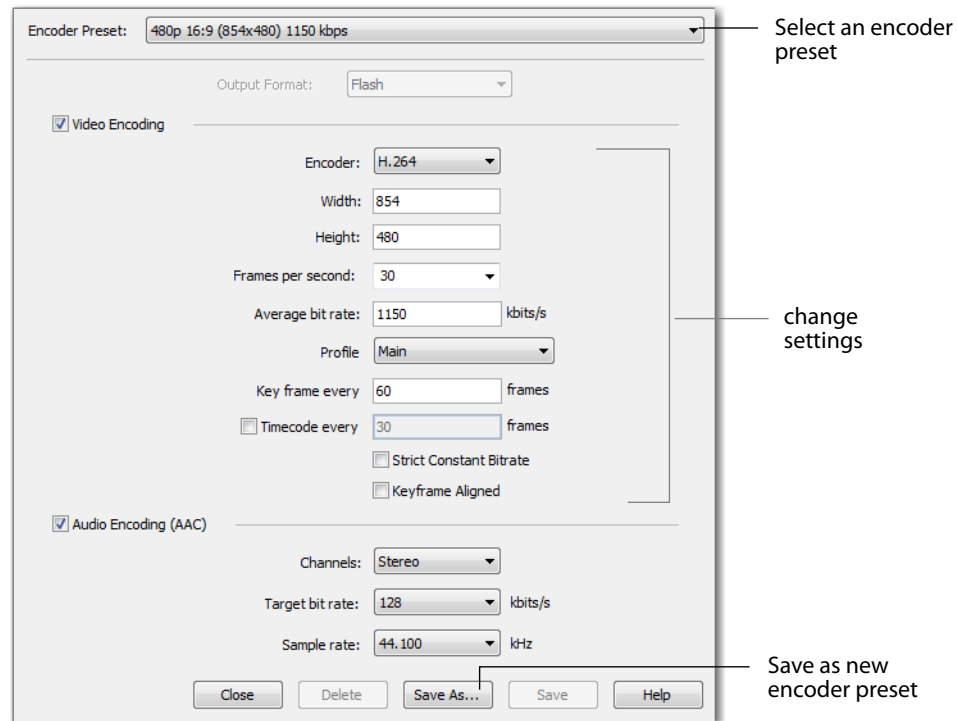
Profile Options

Many encoder presets enable you to select one of three profiles: Baseline, Main, or High.

Baseline Profile (BP) Baseline profile is primarily for low-cost applications that require additional data loss robustness. This profile is used in some video conferencing and mobile applications. It includes all features supported in the Constrained Baseline Profile, plus three additional features used for loss robustness (or for other purposes such as low-delay multi-point video stream compositing). The importance of this profile has faded somewhat since the definition of the Constrained Baseline Profile in 2009. All Constrained Baseline Profile bitstreams are also considered to be Baseline Profile bitstreams, since these two profiles share the same profile identifier code value.

Main Profile (MP) The Main profile is used for standard-definition digital TV broadcasts that use the MPEG-4 format as defined in the DVB standard. It is not, however, used for

high-definition television broadcasts, since the importance of this profile faded when the High Profile was developed in 2004 for that application.

High Profile (HiP) The High profile is the primary profile used for broadcast and disc storage applications, particularly for high-definition television applications. For example, this profile is used by the Blu-ray Disc storage format and the DVB HDTV broadcast service.

MainConcept H.264

STUDIO

To modify a MainConcept H.264 preset, follow these steps:

1. Open the Encoder Presets window.
2. Select the MainConcept H.264 encoder preset from the Encoder menu.

Note: To use a newly created preset (See *Creating New Presets*).

3. Check the Video Encoding checkbox. When checked, the video for your broadcast is encoded. When unchecked, a blank video screen is provided. This is the preferred method of producing audio-only broadcasts.
4. Enter the Width of your broadcast video.
5. Enter the Height of your broadcast video.

6. Select the desired frames per second (fps) of your broadcast. This value is a target value for the encoder and the exact value is not guaranteed.

7. Enter the average bit rate in Kbits (1000 bits) per second. This is the target bit rate of your video. Higher numbers provide better quality. The connection speed of your audience is a significant factor in determining your target bit rate. The encoder compresses the video to approximate this target. However, at different times during your broadcast the bit rate may be higher or lower than the target rate.

8. Select an encoder profile from the Profile menu. Three profiles are provided: Baseline, Main, and High. The Baseline profile is commonly used in mobile applications. It is also used in other applications which operate with limited processing power, storage capacity, and/or bandwidth. The Main profile is appropriate for general-purpose applications of broadcast media, such as high-bandwidth Internet broadcasting. The High profile provides the highest broadcast quality encoding.

9. Key Frame (optionally) allows you to enter the number of frames. A movie is a sequence of images and each image is called a frame. To compress video data, most encoders take a frame and make it a reference (also known as a key). This keyframe is sent as part of the broadcast, and all of the data after that keyframe is relative to it. The benefit of this is that the compressor only needs to send what has changed since the last keyframe. The main drawback of this is that over time it becomes harder for the encoder to distinguish the frame-difference information, especially if there is a lot of motion in the video. Another drawback is if your viewer's computer misses a keyframe, the video is distorted until the next keyframe is sent. However, you can control how often the encoder makes a new keyframe by setting the number of frames. The more keyframes you broadcast, the more bandwidth required and less compression, but results in better quality video.

10. Check (optionally) the Timecode Every checkbox and enter the number of frames between timecodes. Wirecast can generate timecodes embedded in the flash stream. If a frames value of zero is entered, the timecode is never sent. Wirecast sends metadata along with the frames. This data looks like an ONFi call. Various timecodes and timestamps are also sent with the stream.

11. Check (optionally) Strict Constant Bitrate. When checked, it forces the Average bit rate (see item 8 above) to maintain the exact bit rate entered. CBR pads the data (when necessary) to meet exact bitrate specified. Disabling CBR can result in slightly improved quality and decrease file size, but at the cost of greater bitrate fluctuations which could prove troublesome for certain streaming destinations. Selecting this option for recording is not recommended because it can result in decreased quality and larger files, with no real benefit.

12. Check (optionally) Keyframe aligned. When checked, it facilitates adaptive bitrate streaming by ensuring that keyframes from multiple streams are in sync, along with the keyframes timestamp, DTS and PTS values. But this is true only if those other streams also have the option turned on and have the same keyframe interval. To accomplish this, Wirecast disables scene detection and manually inserts the keyframe at the exact keyframe interval specified. Therefore, to ensure quality and smooth switching in the player, the keyframe interval should be in the 1 to 4

second range. When Keyframe Aligned is enabled, absolute timestamp is also enabled.

13. Check (optionally) the Audio Encoding (AAC) checkbox. When checked, the audio for your broadcast is included. When unchecked, audio is absent. This is the preferred method of producing video-only broadcasts because the presence of silent audio uses bandwidth.

14. Select the number of channels: Mono or Stereo. Mono uses less bandwidth than stereo, but stereo is more pleasing to the listener.

15. Select the audio bit rate, in Kbits (1000 bits) per second, from the Target Bit Rate menu. This is the target bit rate of your audio. Higher numbers provide better quality. The connection speed of your audience is a significant factor in determining your target bit rate. The encoder compresses the audio to approximate this target. However, at different times during your broadcast the bit rate may be higher lower than the target rate. The total broadcast bit rate is a function of video bit rate plus audio bit rate.

16. Select the audio sample rate, in kHz (1000 Hz) per second, from the Sample Rate menu. This value specifies how many thousands of times per second to sample the audio in the broadcast. Higher values provide better quality sound, but at greater bandwidth.

17. Click Save to save your settings.

x264

STUDIO

Note: The x264 implementation of the H.264 standard results in better quality and lower CPU usage for any given bitrate, but at the cost of higher memory usage. The default implementation is based on the MainConcept codec and uses less memory.

To modify an x264 preset, follow these steps:

1. Open the Encoder Presets window.

2. Select an x264 from the Encoder menu.

Note: To use a newly created preset (See *Creating New Presets*).

3. Check the Video Encoding checkbox. When checked, the video for your broadcast is encoded. When unchecked, a blank video screen is provided. This is the preferred method of producing audio-only broadcasts.

4. Enter the Width of your broadcast video.

5. Enter the Height of your broadcast video.

6. Select the desired frames per second (fps) of your broadcast. This value is a target value for the encoder and the exact value is not guaranteed.

7. Enter the average bit rate in Kbits (1000 bits) per second. This is the target bit rate of your video. Higher numbers provide better quality. The connection speed of your audience is a significant factor in determining your target bit rate. The encoder compresses the video to approximate this target. However, at different times during your broadcast the bit rate may be higher or lower than the target rate.

8. Select encoding quality (*Ultra fast* to *Very slow* encoding). Slower encoding results in better quality.

9. In the *x264 command line options* edit box, enter any command line options you want included.

10. Select an encoder profile from the Profile menu. Three profiles are provided: Baseline, Main, and High. The Baseline profile is commonly used in mobile applications. It is also used in other applications which operate with limited processing power, storage capacity, and/or bandwidth. The Main profile is appropriate for general-purpose applications of broadcast media, such as high-bandwidth Internet broadcasting. The High profile provides the highest broadcast quality encoding.

11. Key Frame (optionally) allows you to enter the number of frames. A movie is a sequence of images and each image is called a frame. To compress video data, most encoders take a frame and make it a reference (also known as a key). This keyframe is sent as part of the broadcast, and all of the data after that keyframe is relative to it. The benefit of this is that the compressor only needs to send what has changed since the last keyframe. The main drawback of this is that over time it becomes harder for the encoder to distinguish the frame-difference information, especially if there is a lot of motion in the video. Another drawback is if your viewer's computer misses a keyframe, the video is distorted until the next keyframe is sent. However, you can control how often the encoder makes a new keyframe by setting the number of frames. The more keyframes you broadcast, the more bandwidth required. The result is less compression but better quality video.

12. Check (optionally) Strict Constant Bitrate. When checked, it forces the Average bit rate (see above) to maintain the exact bit rate entered. CBR pads the data (when necessary) to meet exact bitrate specified. Disabling CBR can result in slightly improved quality and decrease file size, but at the cost of greater bitrate fluctuations which could prove troublesome for certain streaming destinations. Selecting this option for recording is not recommended because it can result in decreased quality and larger files, with no real benefit.

13. Check (optionally) Keyframe aligned. When checked, it facilitates adaptive bitrate streaming by ensuring that keyframes from multiple streams are in sync, along with the keyframes timestamp, DTS and PTS values. But this is true only if those other streams also have the option turned on and have the same keyframe interval. To accomplish this, Wirecast disables scene detection and manually inserts the keyframe at the exact keyframe interval specified. Therefore, to ensure quality and smooth switching in the player, the keyframe interval should be in the 1 to 4 second range. When Keyframe Aligned is enabled, absolute timestamp is also enabled.

14. Check (optionally) the Timecode Every checkbox and enter the number of frames between timecodes. Wirecast can generate timecodes embedded in the flash

stream. If a frames value of zero is entered, the timecode is never sent. Wirecast sends metadata along with the frames. This data looks like an ONFi call. Various timecodes and timestamps are also sent with the stream.

15. Check (optionally) the Audio Encoding (AAC) checkbox. When checked, the audio for your broadcast is included. When unchecked, audio is absent. This is the preferred method of producing video-only broadcasts because the presence of silent audio uses bandwidth.

16. Select the number of channels: Mono or Stereo. Mono uses less bandwidth than stereo, but stereo is more pleasing to the listener.

17. Select the audio bit rate, in Kbits (1000 bits) per second, from the Target Bit Rate menu. This is the target bit rate of your audio. Higher numbers provide better quality. The connection speed of your audience is a significant factor in determining your target bit rate. The encoder compresses the audio to approximate this target. However, at different times during your broadcast the bit rate may be higher or lower than the target rate. The total broadcast bit rate is a function of video bit rate plus audio bit rate.

18. Select the audio sample rate, in kHz (1000 Hz) per second, from the Sample Rate menu. This value specifies how many thousands of times per second to sample the audio in the broadcast. Higher values provide better quality sound, but at greater bandwidth.

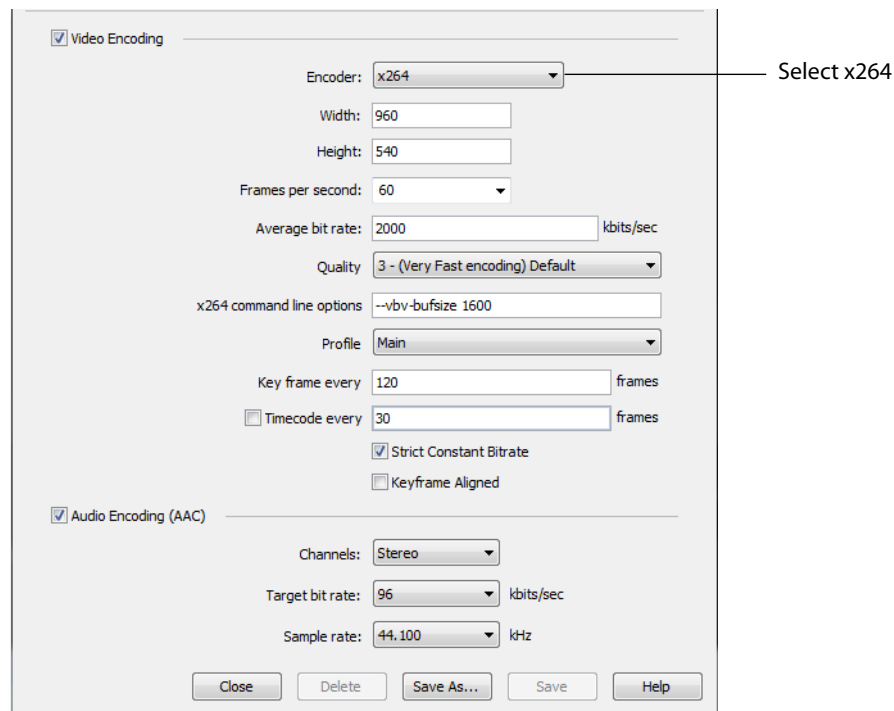**19.** Click Save to save your settings.

Making Great Broadcasts

Introduction

These topics provide helpful information about how to prepare for creating great presentations.

Topics

- *Overview*
- *High Quality Audio*
- *Good Lighting*
- *Broadcast Settings*

Overview

There are many ways to make a good live event even better. But this appendix focuses on two main things to remember about video streaming:

- **High Quality Audio Input** Great looking video with poor audio input appears unprofessional.
- **Good Lighting** Poor lighting can ruin an otherwise excellent live event. If you are doing chroma keying, this may become the most important part of your setup.

When video is saved to disk or sent over the network, it needs to be compressed. The compression process is done by encoders (codecs) which are optimized to work with clean input data. This means that if the audio or video is muddy to start with, it remains muddy after compression. Some codecs may even highlight poor input because the algorithm is built to look for differences.

Your goal should be to give the best possible quality audio and video to the compression process as possible. This means making sure what you see in the Live area is the best possible quality because Wirecast takes exactly what you see and sends it to the codecs.

High Quality Audio

Audio has an artistic aspect to it. You can make a great live event even better by remembering to focus on a few details. Here are some suggestions on producing clean audio.

- **Use a Good Microphone** Though this may sound obvious, a good microphone can make a huge difference. Most DV cameras have an audio input for an external microphone. Use this, whenever possible, instead of the built-in microphone that comes with the camera. Built-in microphones are usually not good quality and tend to pick up hum from the electronics inside the camera. Even when it is not a great microphone, an external microphone almost always sound better.

- **Use a Microphone Splitter** If you are doing an interview with one camera, you can use two microphones with a splitter (less than $5). This often gives better results than one omni-directional microphone at a distance. You can also use a dual lapel microphone with a splitter.

- **Position the Microphone Properly** Place any microphone as close to the sound source as possible, even when using omni-directional microphones, because sound volume decreases greatly the farther away the microphone is placed. Stronger signals coming into the microphone results in better quality.

- **Use Lapel Microphones** Even inexpensive (less than $20) lapel microphones can make a huge difference because it places the microphone much closer to the person speaking.

- **Control Environmental Noise** If a chair squeaks, use a different one. If you have a wood floor and you can hear people shuffling their feet as they talk, put down a rug. Do whatever it takes to keep noise at a minimum. Microphones pick up everything.

Good Lighting

Do not underestimate the power of lighting. When an event is shot outdoors, a great deal of attention goes into lighting. For professionals, lighting is viewed as an artistic task. Many people make their living controlling lighting, so there is a lot to it. Here are a few suggestions to help you obtain reasonably good lighting:

- If you are using only one lighting source, do not shine it directly on your subject. You should diffuse the light by bouncing it off of a wall or by shining it through opaque material.

- Avoid deep shadows. Make sure you fill all areas of your subject with light. Sometimes this requires adjusting the light to bounce off a different wall or use two lights. Placing a light low and another one high is often a good way to light evenly.

- Do not light too evenly. If you evenly light a set, you may actually be worse off than not lighting the set at all. Take a sample shot and see if it looks natural. Good lighting usually has a little more light coming from above than any other direction. You should very rarely light just from below a subject.

- Beware of having too much light on your subject. If your subjects are people and you must use a lot of light, use make-up to compensate for the overly bright lighting. This is not necessarily a bad thing, but you must choose how much effort you want to go through to make a good live event. If your lighting balance is excellent, you can avoid using make-up on your subjects. The key in adjusting the lighting is to look at your subject and make sure they do not look washed out.

- Watch professional events and learn from them. As you watch, notice the lighting instead of watching the program. Notice how they employ the suggestions listed above.

These guidelines might seem to suggest subtle improvements, but good lighting can make an amateur video look professional and a professional video look fabulous. The important thing to remember is that one or two properly placed lights makes a huge difference in the quality of your live event.

Triangular Lighting

One advanced and very effective approach to good lighting is known as *triangular lighting* (or *three light setup*). Although this may sound complicated, it is actually quite simple. It involves setting up three lights (sometimes using natural light as one of the light sources), in a configuration that achieves a good balance. Here are the main elements of Triangular Lighting:

- **Main Light (Key Light)** This is the strongest of your lights and does most of the work. This light normally comes from one side of the camera (the left, for example) and is slightly raised. However, using just the main light results in shadowing.

- **Fill Light** This is a soft light placed directly in front of the subject. It removes shadows and fills in the image. It is usually direct and usually comes from the same direction as the camera (or just to the side and behind it). It could be, for example, placed on the same level as the head of a person you are lighting. If you use only a fill light, your subject might appear too dark. The only purpose of a fill light is to add to the main light by filling in shadows. If your key light comes from the left of your camera, your fill light should come from the right, and vice versa.

- **Back Light (Rim Light)** This light is directed from behind the subject and above it. This is the hardest light to explain, but the best way is to describe it as an accent of your subject. If you look at a typical high school yearbook picture, you will notice that the top-left (or top-right) part of each head shot has a highlight of light in it. This light is the *back light*. It is also called a *rim light* because it makes a slight rim around the edge of the head of your subject. This light normally comes from behind and above the subject, and it is focused. Make sure it is not directed at the camera.

Most serious lighting starts with these three basic lights. There are also some great Websites that describe these techniques in great detail.

Broadcast Settings

Once you have good video and audio coming into Wirecast, the final item of importance is make sure the Broadcast Settings are configured correctly for your presentation. Though there are many broadcast parameters to modify, there are three that are the most important: bandwidth, motion, and encoder settings.

Bandwidth

The first item of importance is knowing how much bandwidth is available. Bandwidth is how much data you can broadcast from your computer. This depends on the speed of your network connection and the type of connection your viewers are using. More specifically, it is the minimum speed between you and all of your viewers. For example, if you have one viewer who is using a dial-up modem, for that viewer to see good quality you must broadcast at Modem speed.

Thus, you must know who your viewers are and what kind of connection they have. This may be difficult to know because you must determine if their connection is cable modem or DSL and whether or not they reside on your local network.

In some situations, you are broadcasting for just your local network (in an office building, for example). In this case you should discuss your plans with your network administrator and verify that you will not disrupt the network with your broadcasts. Ask them what your upper limit bandwidth should be. Your available bandwidth is the minimum of what you can upload, combined with what your viewers can download.

Motion

Once you know your bandwidth, you need to decide whether or not your video contains a lot of motion. Motion is how much things move around in your video presentations. An interview is considered low motion. A sports event, however, would probably be high motion. Wirecast comes configured with defaults to help ease your configuration task. Choose a default configuration that meets your motion (and bandwidth) constraints.

Encoder Settings

The parameters of the encoders are quite technical and can be overwhelming. It is beyond the scope of this document to describe the delicate balance required in setting them. There are professionals who fine-tune encoders to do exactly what is required. The Wirecast default settings are generally optimal for the various network environments. (See *Encoder Presets* for information on changing the encoder settings.)

Acknowledgments

Acknowledgments

Overview

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