# Wirecast 5.0 *Windows*

## User's Guide

telestream

March 2014

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# Preface

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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 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.

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

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. 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, Viewcast Osprey 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, IP camera support, integration with Teradek Cube, and Telestream Pipeline support (a networked real-time encoding and decoding device). Wirecast Pro also provides live scoreboards and includes the HDV option license which adds support for HDV codec encoding.

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**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.

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# Tutorials

We suggest 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 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.

Next, we suggest that you read *Appendix A: Making Great Presentations*. 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 Alt 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 Alt 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 Shift+Ctrl keys and click the shot.

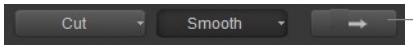
- **Open the Preview window** The operator should use Preview mode to examine everything before it becomes live.
- **Use the Layer Windows to make more shots available** Select New Layer Window from the Window menu to open additional layer windows so you can quickly flip between shots on several layers.
- **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. Shift+Ctrl+Click loads a shot into the preview but does not make it live.

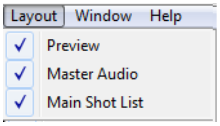



When AutoLive is off, you click on a shot in the Main Window to display it in Preview, then the Go button is required to make the shot live. Shift+Ctrl+Click takes a shot live immediately.

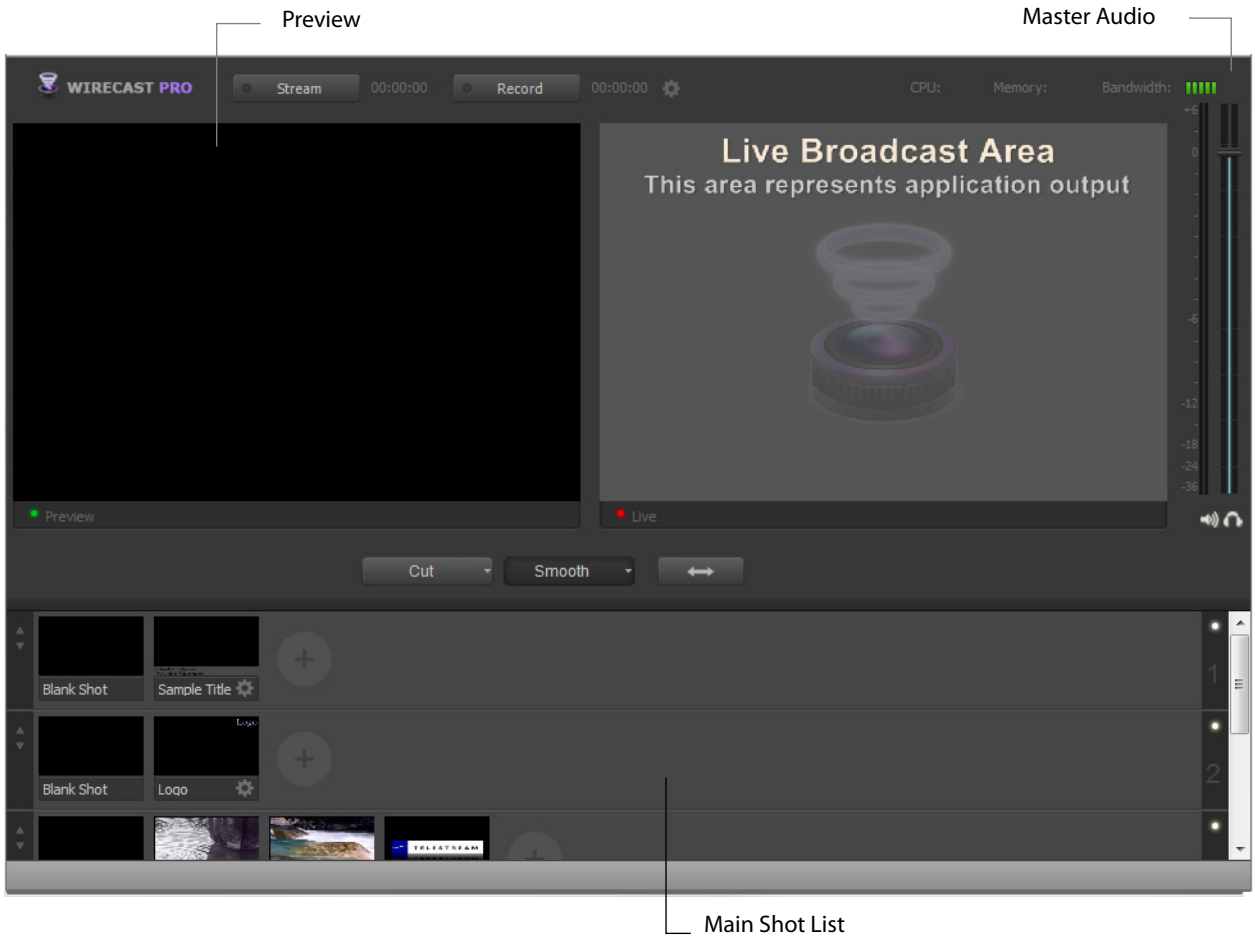
Sometimes you may want to temporarily turn on and off (toggle) the AutoLive state. Hold down the Shift and control keys at the same time to temporarily turn on Autolive. This enables you to quickly switch AutoLive on for one action (i.e. a mouse-click), then off again.

# 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.



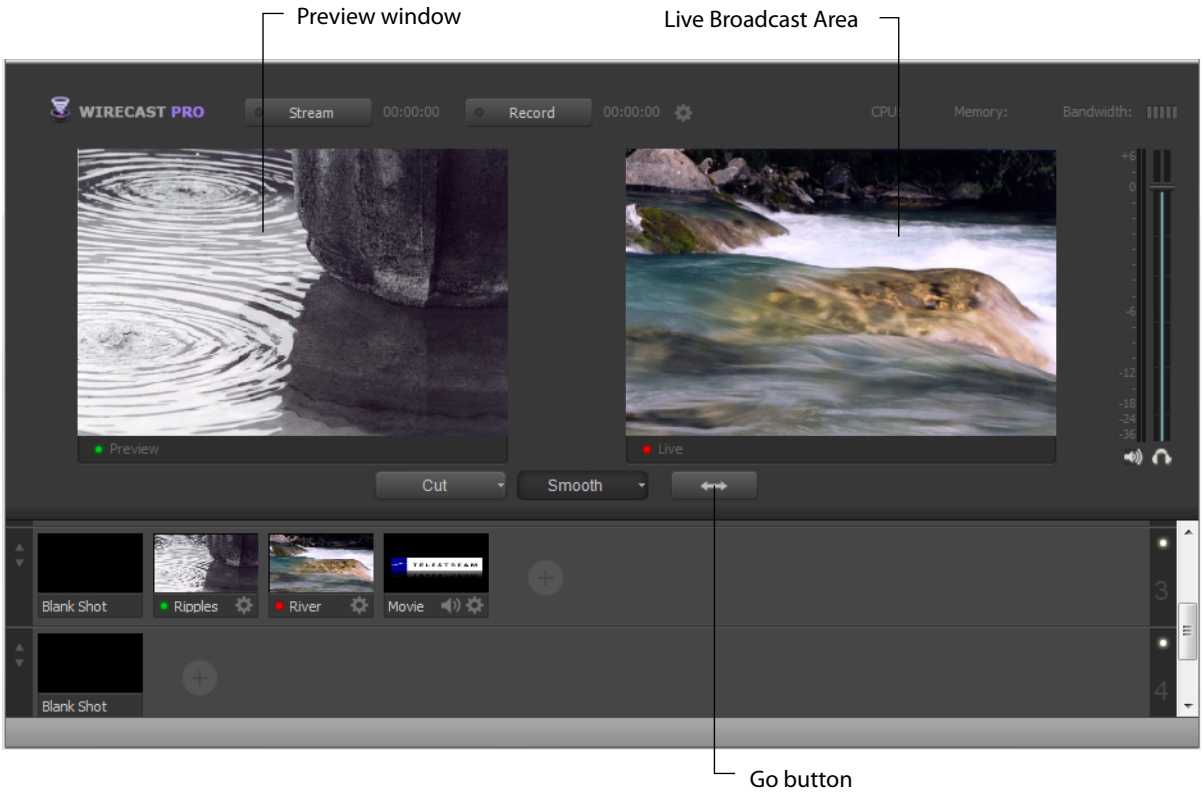
There are three layout options: Preview, Master Audio, and Main Shot List. Each option represents a pane in the Main window and is turned on or off by selecting it. A check mark indicates that the option is turned on.



# Preview

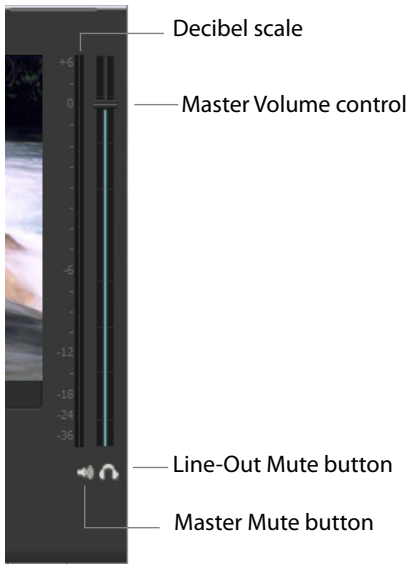
STUDIO

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



# Master Audio

The Master Audio panel enables you to control the output volume level, mute audio output, and mute the line-out feed. To display Master Audio, click *Layout* > *Master Audio*.



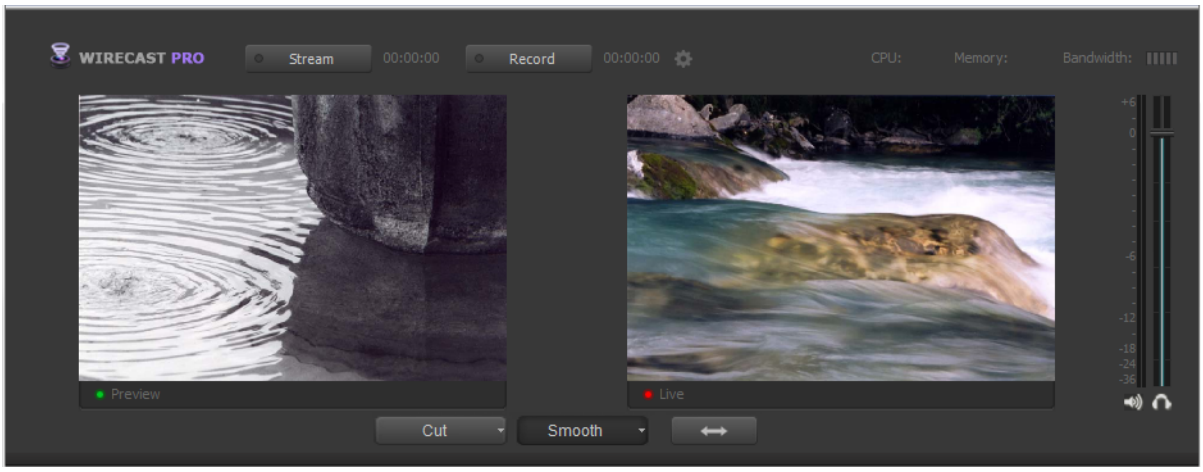

The Master Volume control enables you to adjust the master audio volume. Click and drag the slider control up or down to set the volume. The decibel scale next to the slider indicates the audio level.

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

The Line-Out Mute button controls what you hear locally. When line-out is muted, audio is not sent to your headphones or speakers, but your viewers still hear it.

# 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.




# 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*).

- **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.

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

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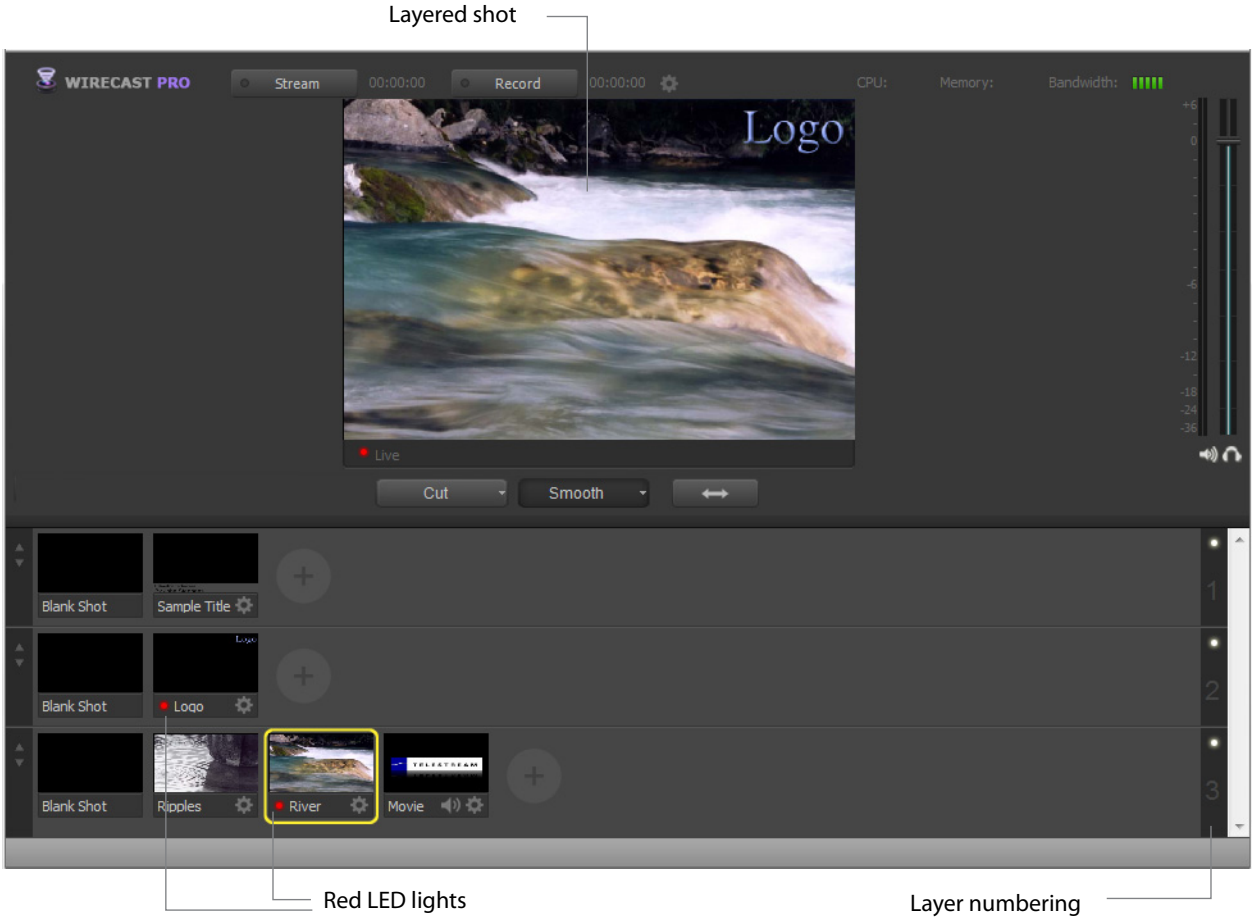
- **Memory usage** This displays the current percentage of memory use when streaming or recording. It is recommended that you keep memory usage below 90% to avoid running out of memory.
- **Bandwidth** This displays the current bandwidth used by your broadcast. The greater the number of green bars, the greater the bandwidth. As the green bars fall away it indicates lower than required bandwidth. A single red bar indicates that the bandwidth has dropped out completely.

# Layers

STUDIO

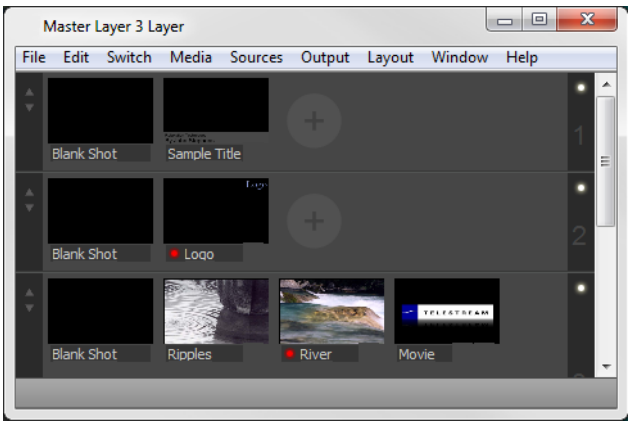
Wirecast displays five layers in the Main Shot List window. They are numbered 1 through 5 along the right side of the window. Each layer contains shots that can be selected by clicking them. A red LED light indicates that a shot is Live. (If AutoLive is turned on, when a shot is selected it is displayed 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.



## 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

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

Scripting documentation and examples are located at *C:\Program Files (x86)\Telestream\Wirecast\rsrc* or *C:\Program Files\Telestream\Wirecast\rsrc*.

# 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*

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**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.

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

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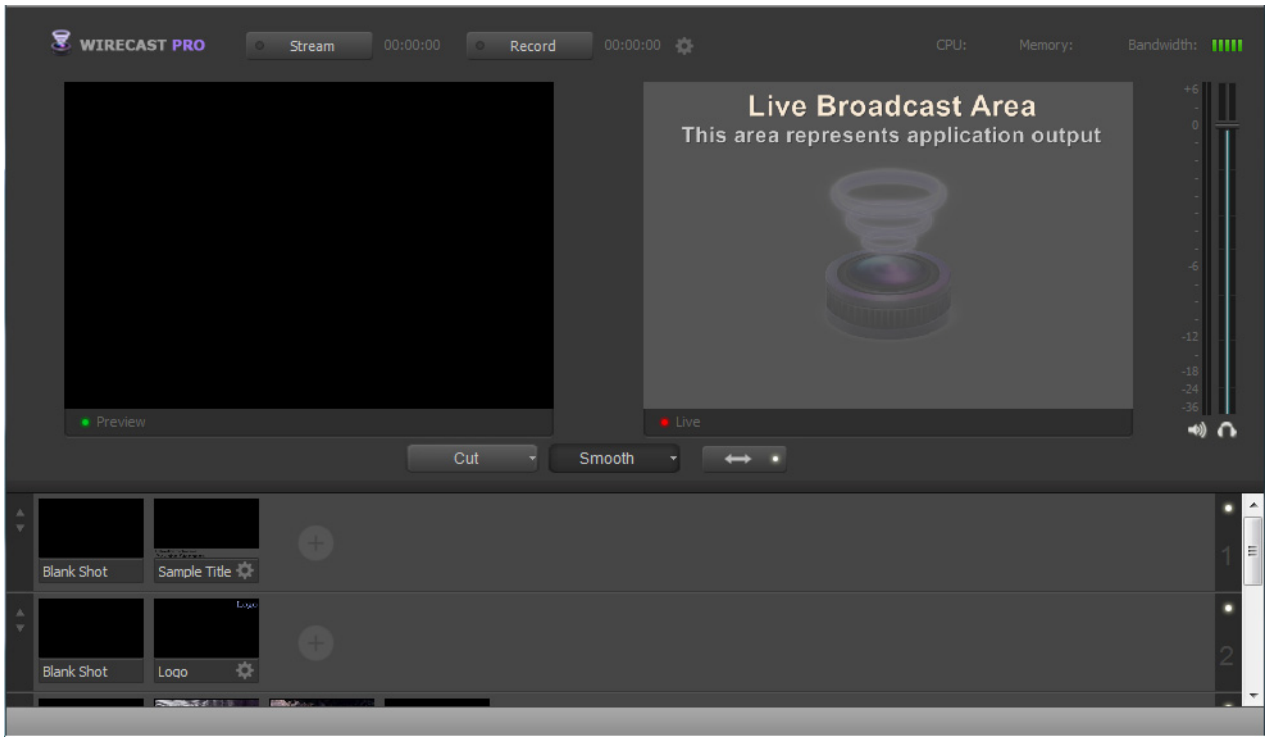
# Tutorial 1: Basic Concepts

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.



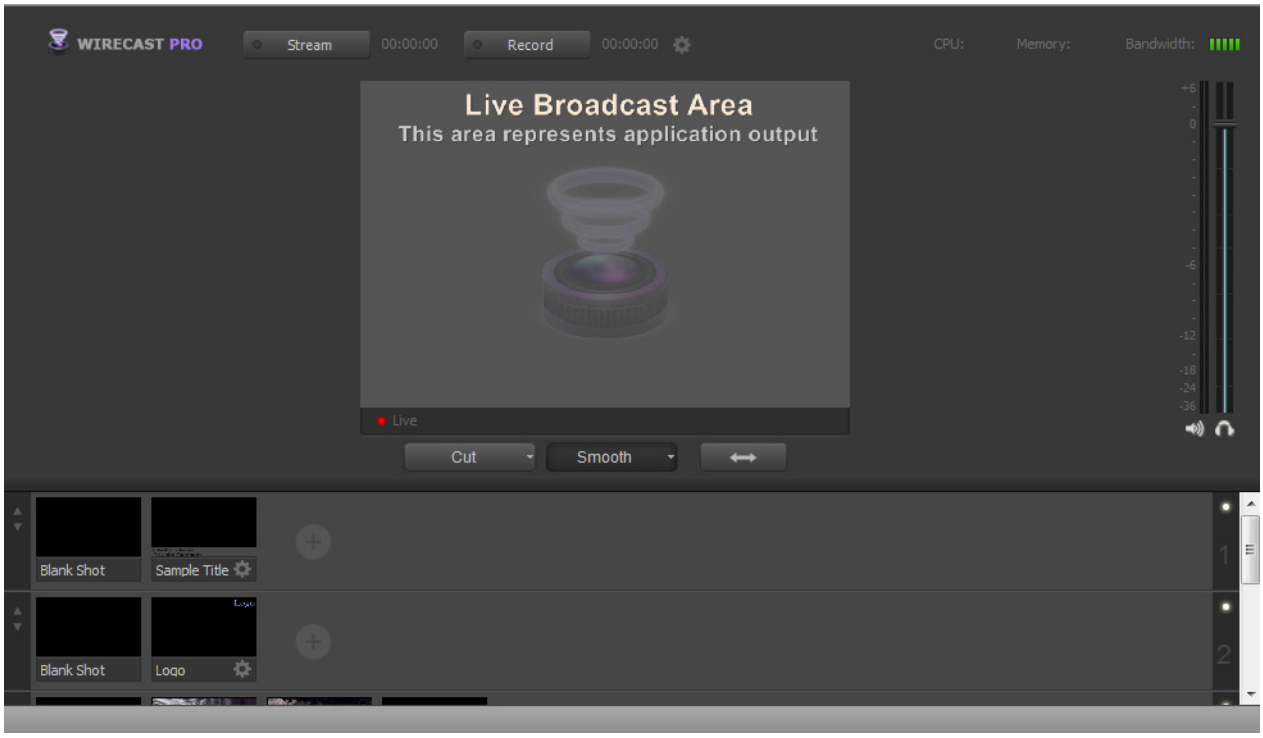

**Note:** If you are running the tutorial with Wirecast in demonstration mode, the Wirecast logo appears from time to time and audio output has a periodic voice-over.

## Tutorial Prep

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

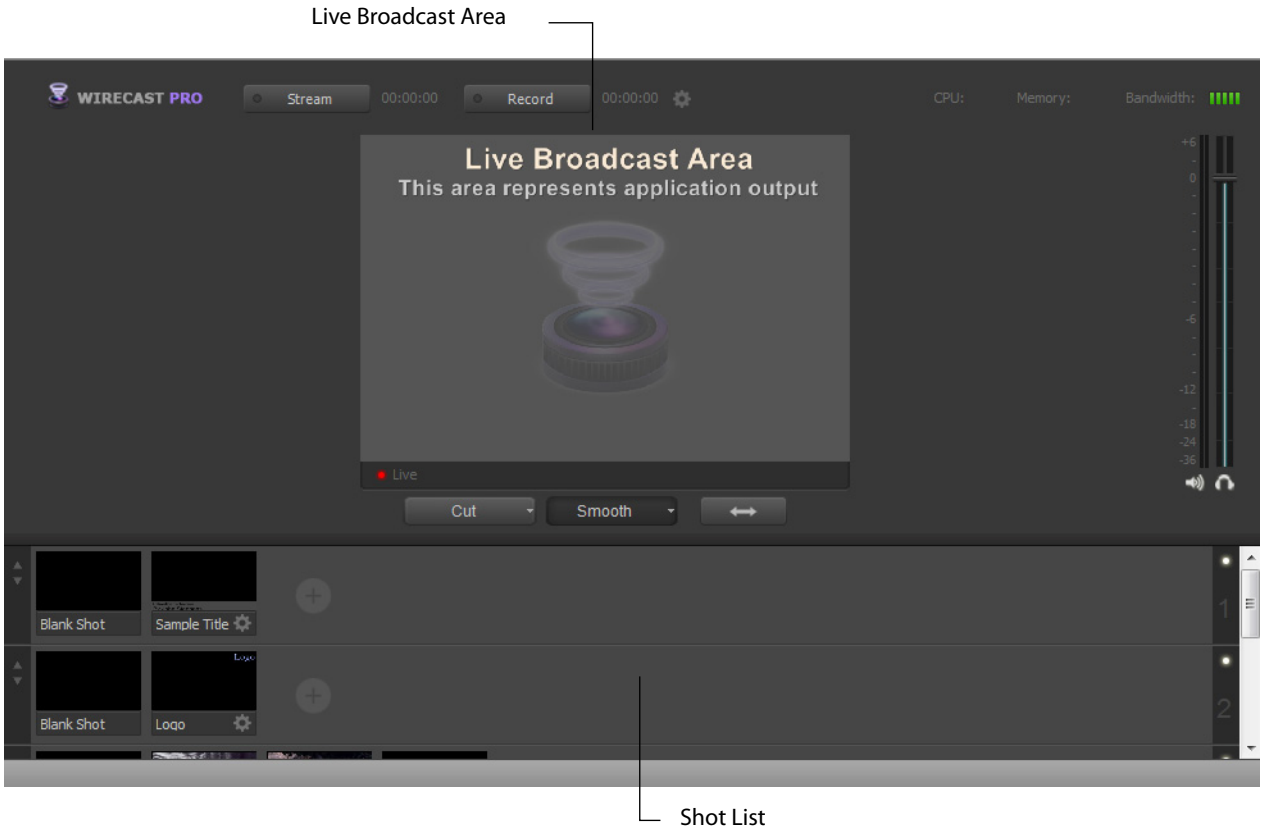
First, select *Switch >Auto Live* to turn on the Auto Live option. But also select Layout > Preview to turn off the Preview option. Both of these options will be changed back later in the tutorial.

The Wirecast Main Window should now look like this:



# 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.



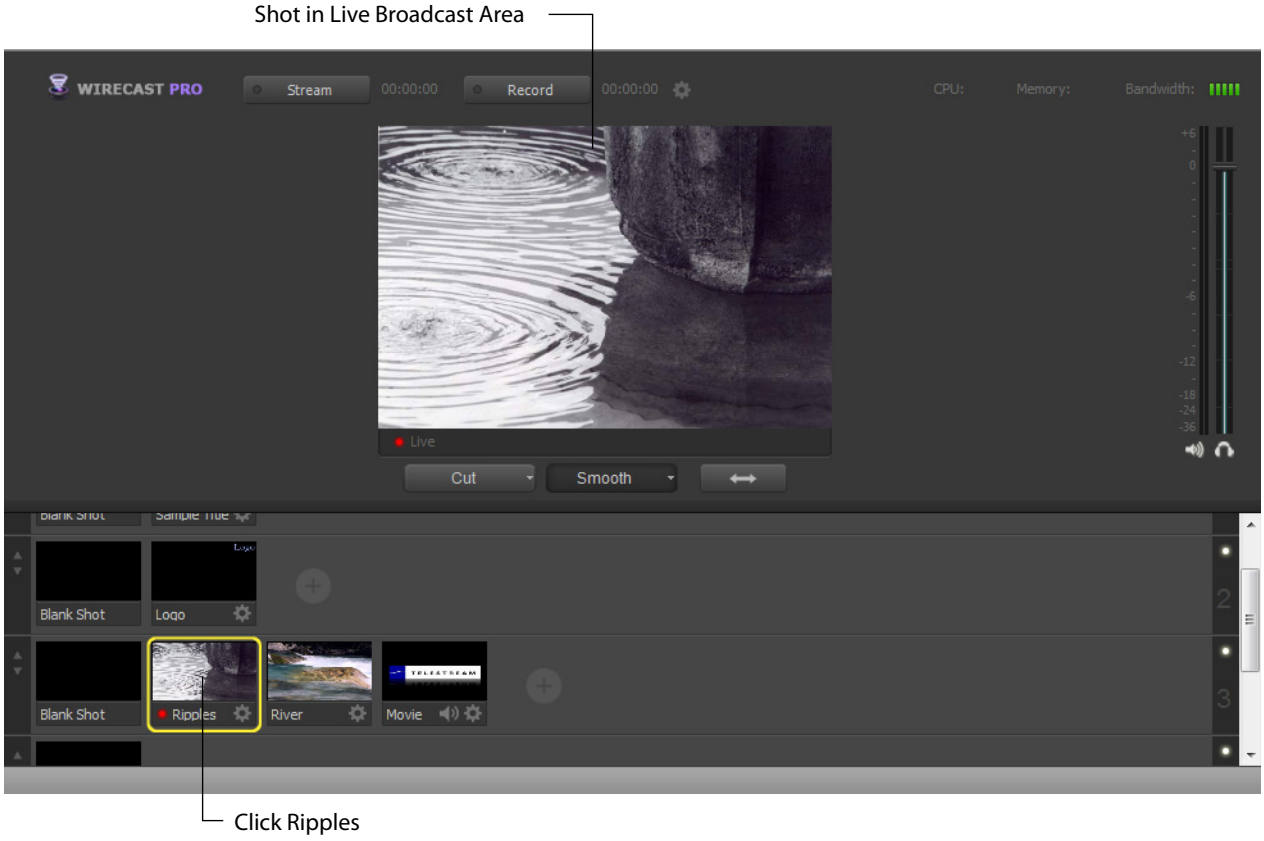

## What Is a Shot?

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.

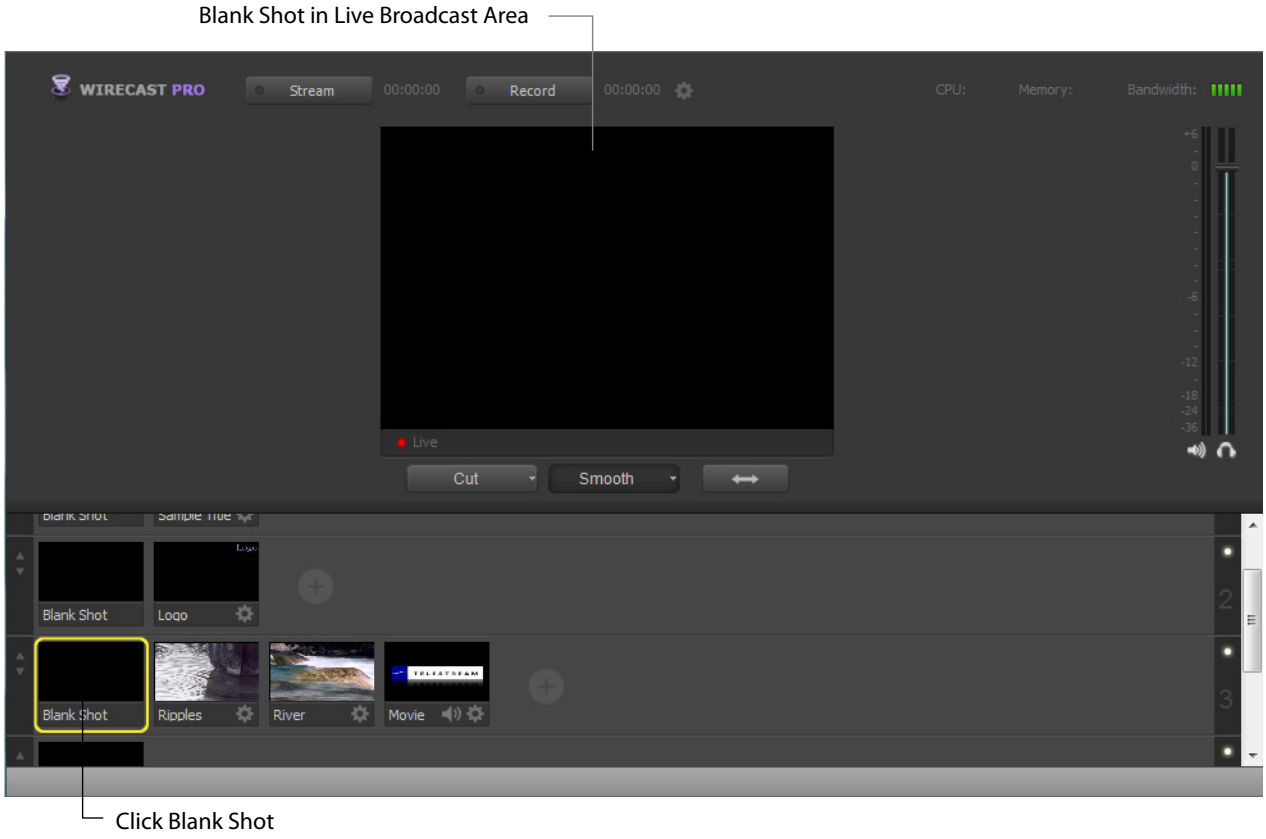
A shot can be edited and its settings can be changed (See *Tutorial 2: Editing Shots*). Shots are important because they enable you to configure a lot of information before you broadcast your presentation. This enables you to concentrate on creating a good production during your broadcast.

## 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.

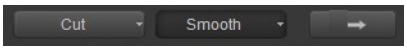


Click the shot labeled Blank Shot and the Ripples image fades to a blank screen. The Blank Shot enables you to display nothing, which is sometimes useful.




# Transitions

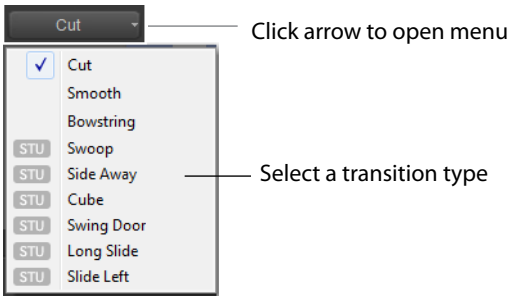
In the previous examples, a fade occurred when you clicked on a shot. This is because a smooth transition is the default. Transition controls are located just below the Live Broadcast Area where two kinds of transitions are shown: Cut and Smooth.



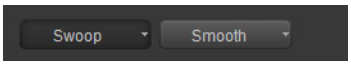

When Cut is selected, transitions are immediate. When Smooth is selected, transitions fade in (as demonstrated above).

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.




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.

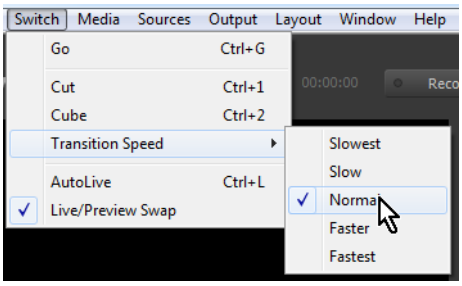



Now click back and forth between River and Ripples using Swoop.

These two transition buttons can also be selected by using the following key combinations: Ctrl+1 and Ctrl+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 Ctrl+G) enables you to make a transition.


Clicking the Go button does nothing when Wirecast is in its default mode of AutoLive. 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 the AutoLive mode is off.

# Layers

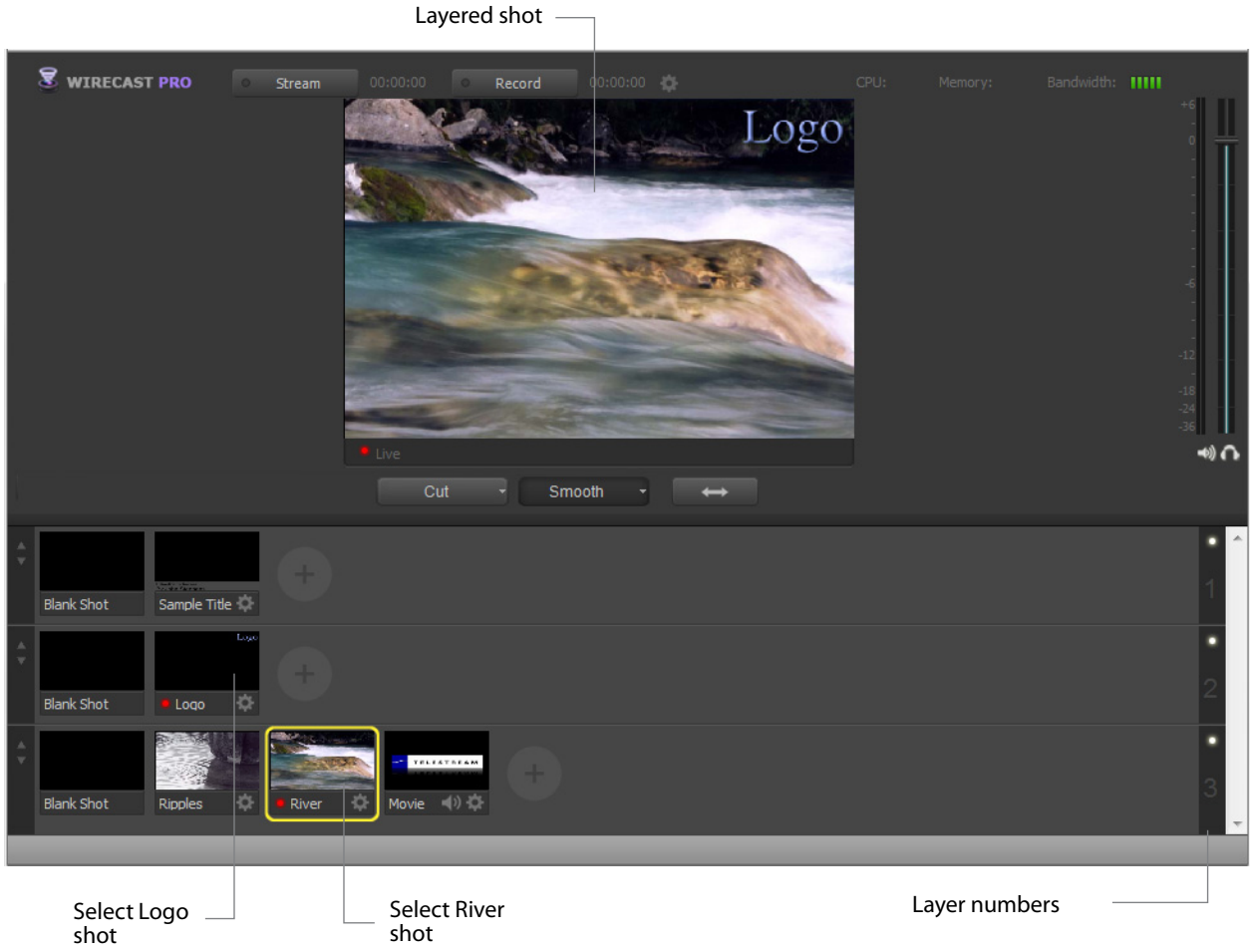
**Note:** Before you start this section, please select Smooth as your transition.

STUDIO

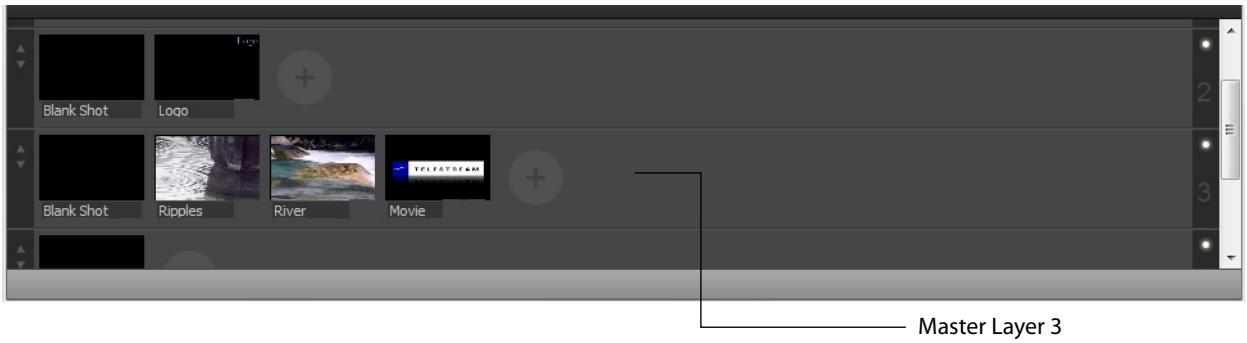
Wirecast enables you to use several layers. Layers are different kinds of displays (shots, logos, titles, etc.) placed on top of each other so that all are seen at the same time. It is an excellent way to add and remove objects in your broadcast.

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).

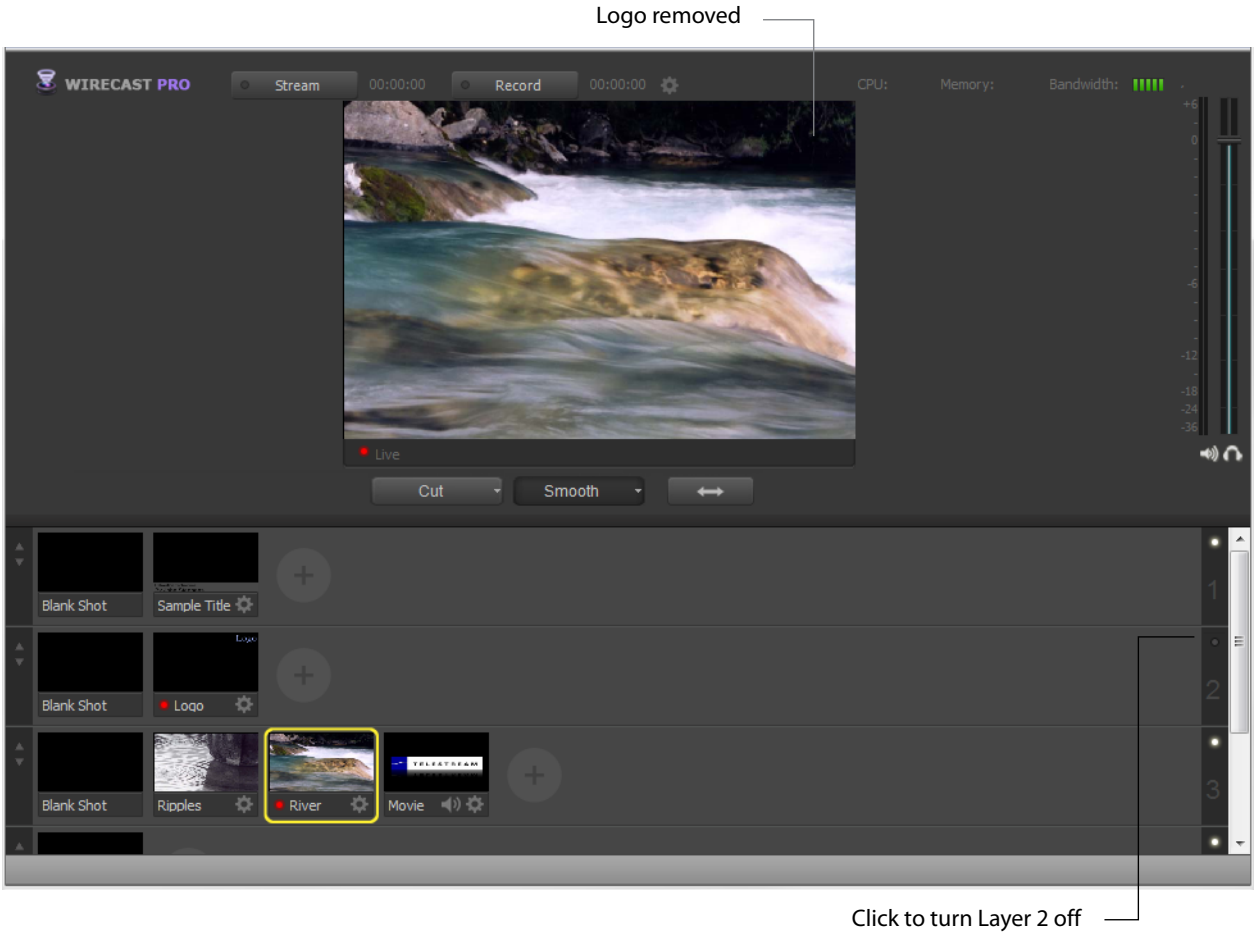
Select the Logo shot in layer 2 and the River shot in layer 3. The result is a layered shot containing both images.




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.



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.




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.

Make sure AutoLive is off by unchecking *AutoLive* in the Switch menu. A dialog box is shown informing you that AutoLive mode 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 mode 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.

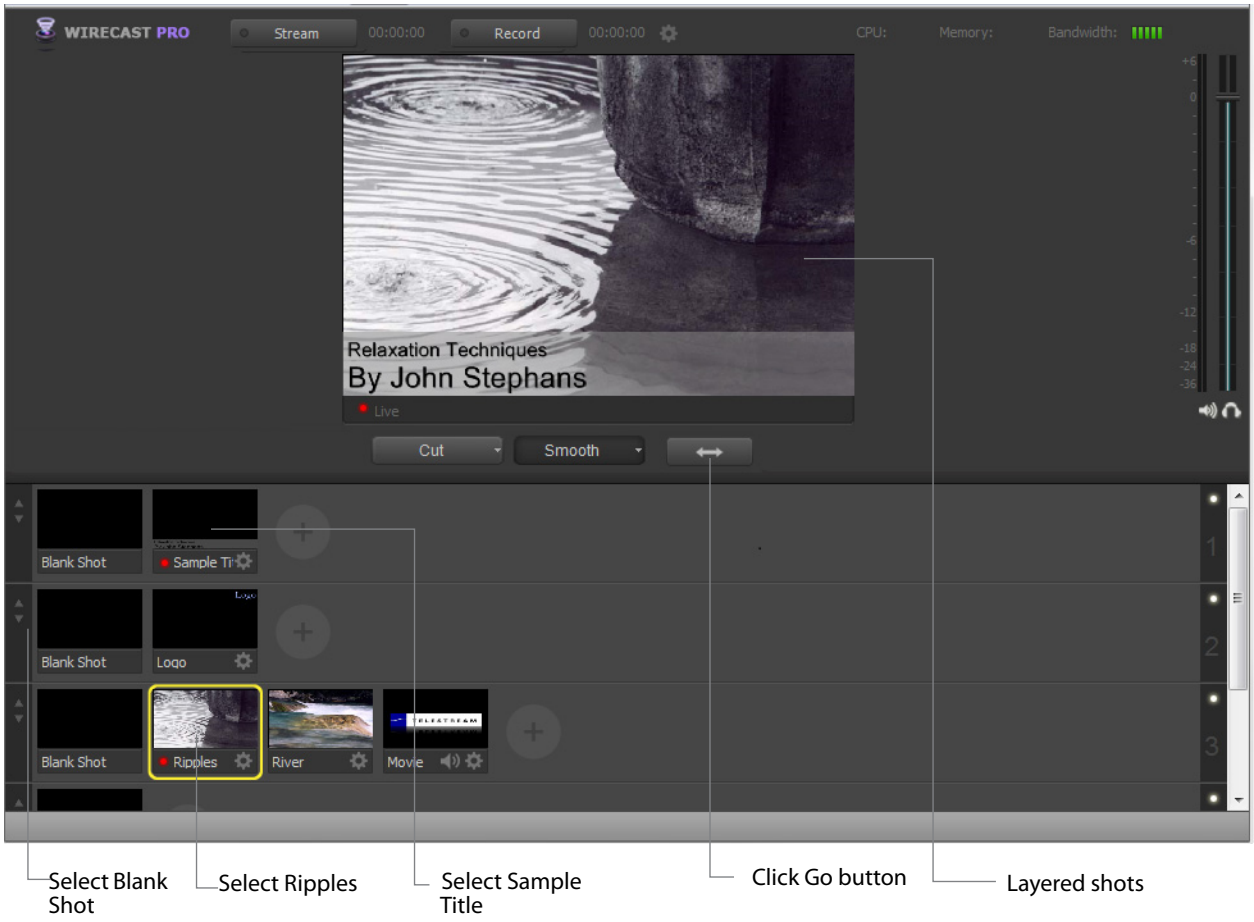
---

**Note:** When AutoLive is off, you must always click the Go button (or press the Ctrl+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 Ctrl+G) to make the *Ripples* and *Sample Title* shots live at the same time.



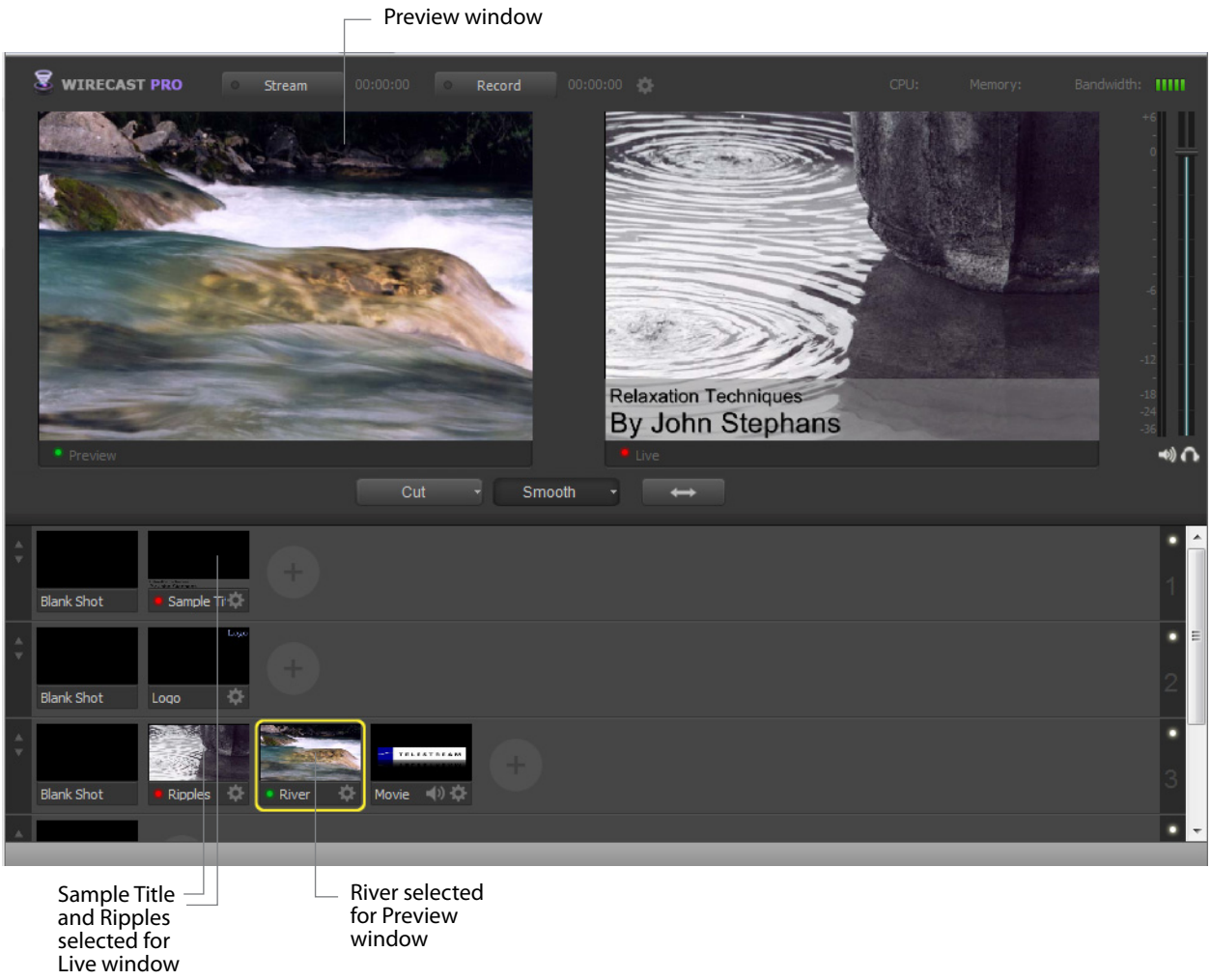
# Preview

STUDIO

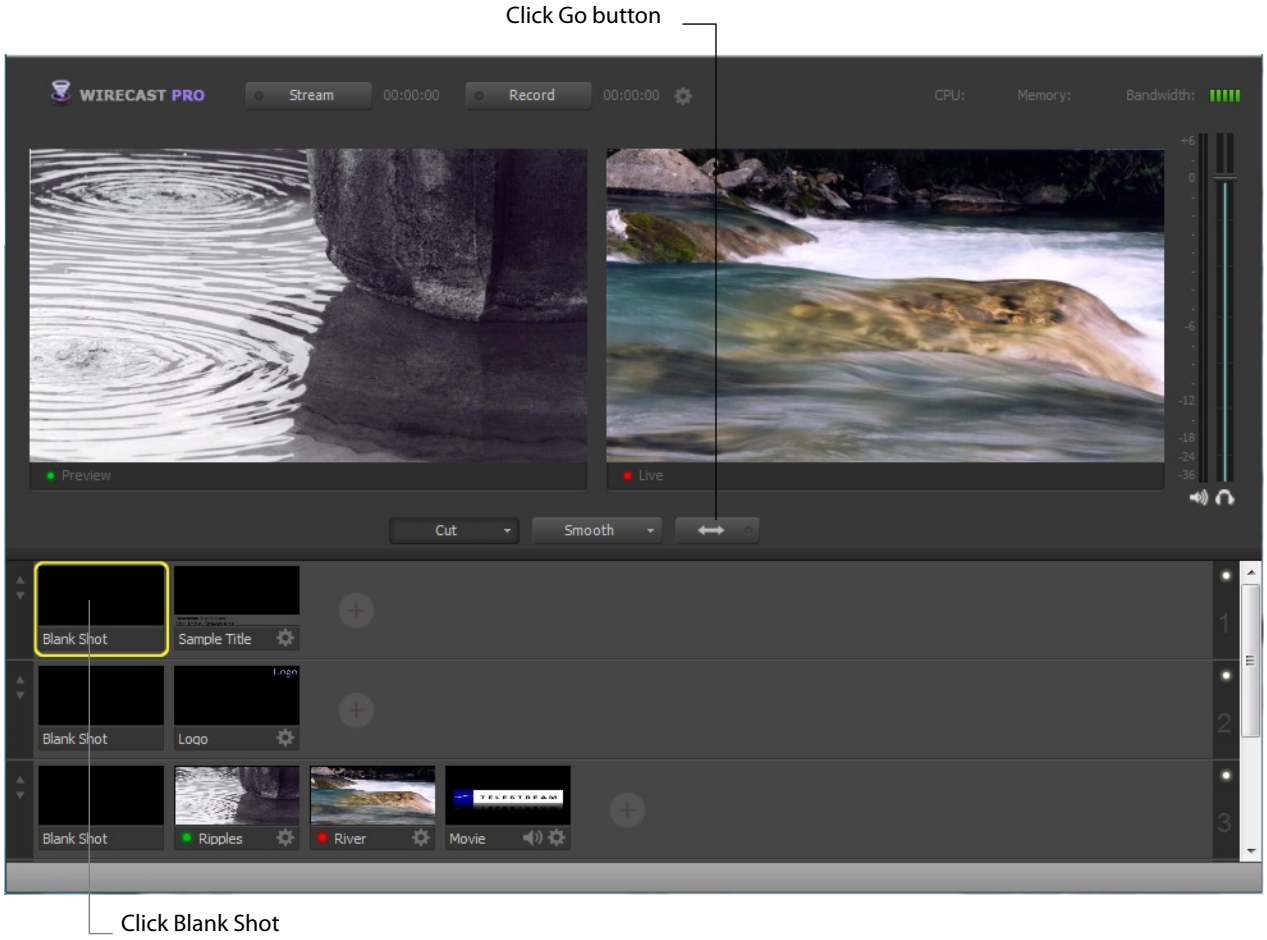
One problem you may have noticed while running this tutorial is that you cannot see the changes you are making before broadcasting them. To solve this problem, Wirecast enables you to see a preview of what you broadcast.

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

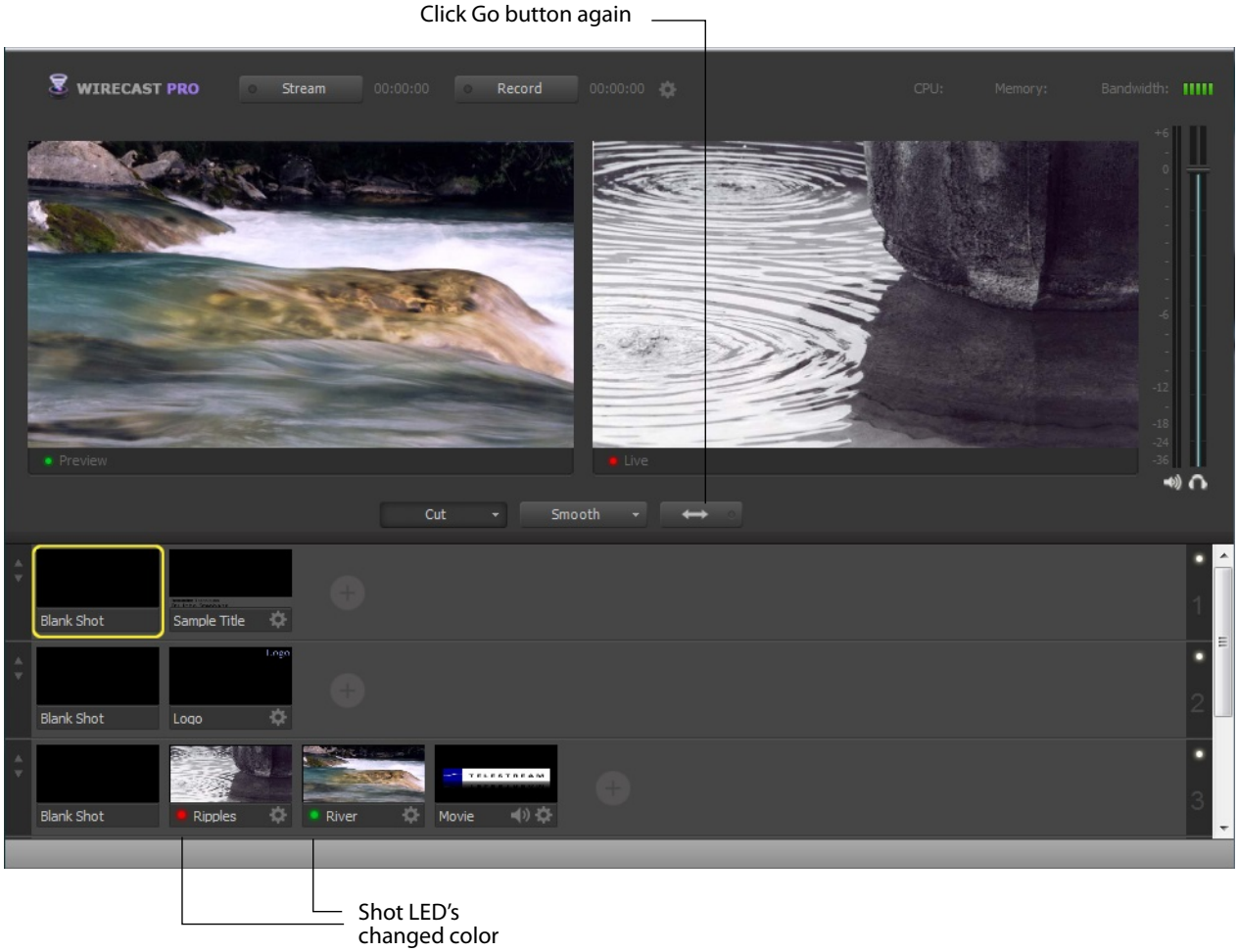
Click the River shot on Layer 3. The River shot is displayed in the Preview window. The Preview windows uses a green LED light to identify it. The Live Broadcast window uses a red LED. When shots are selected they display a green or red LED to indicate selection for preview or live broadcast.



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 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.




# 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.

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**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.

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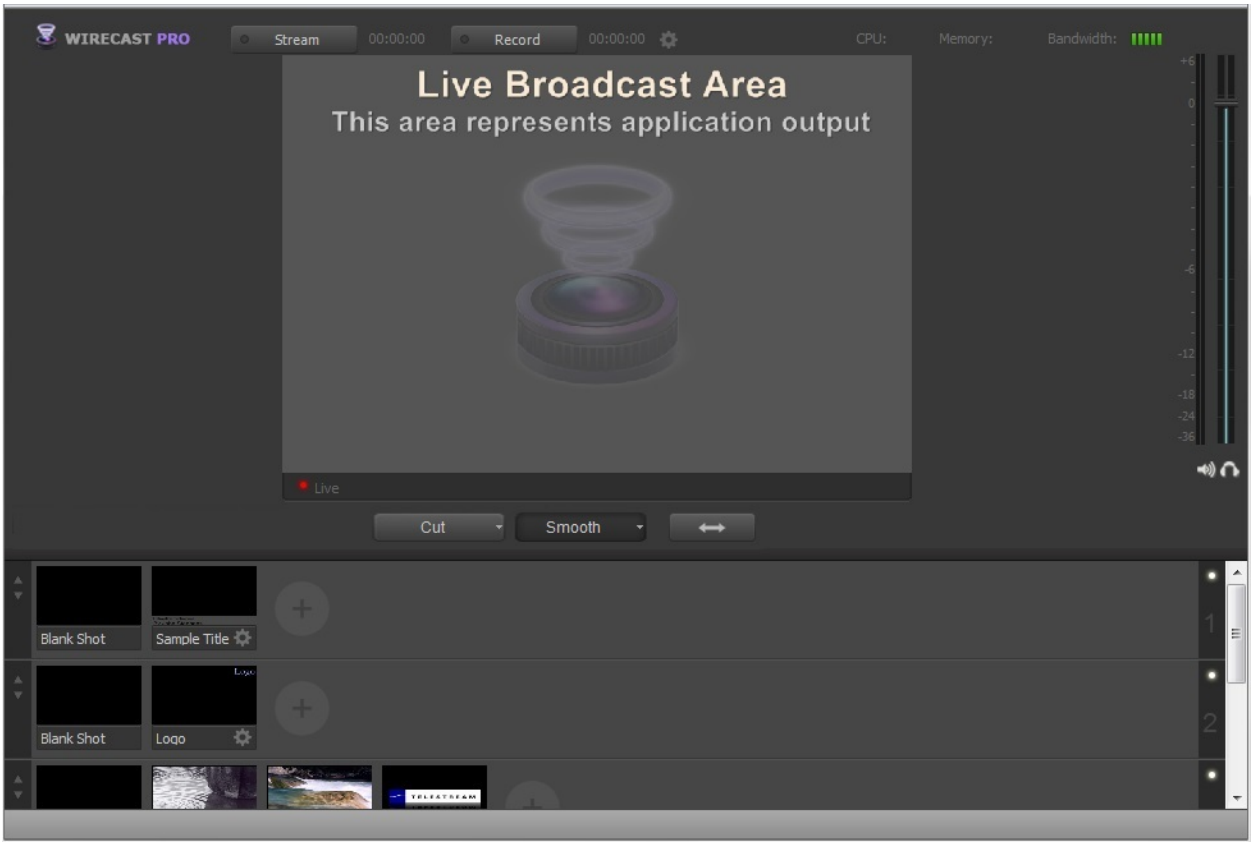



## Shot Editor Overview

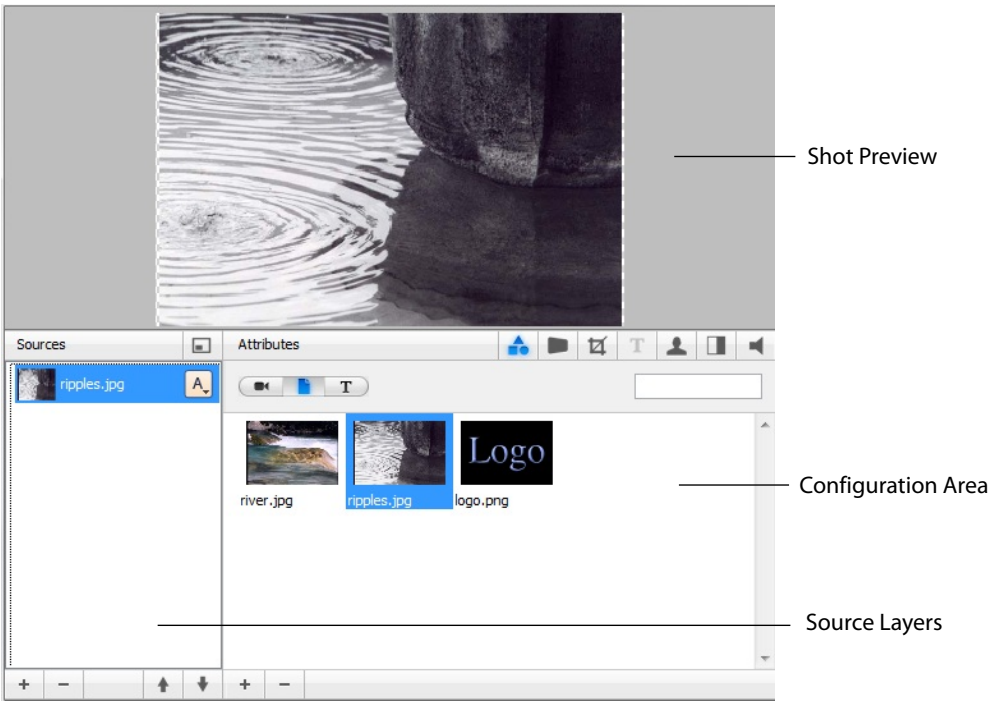
Double click the Ripples Shot. This opens the Shot Editor window.

---

**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.



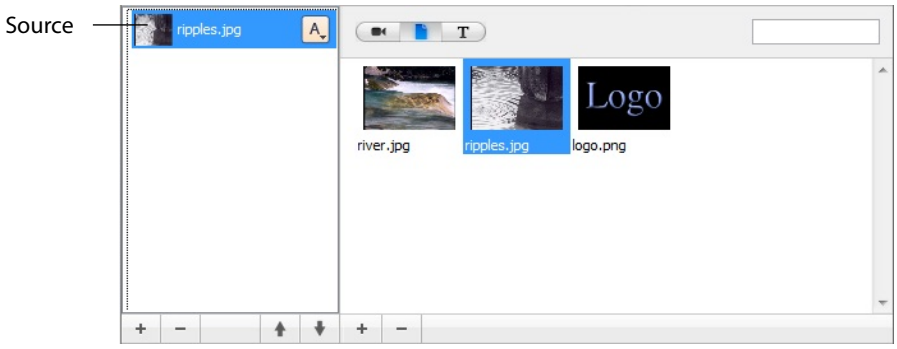

**Shot Preview** This area shows exactly what this shot looks like to your viewers when you take this shot live.

**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

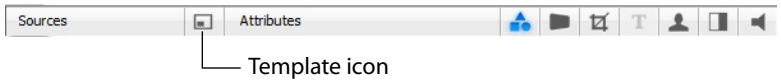
The bottom left part of the Shot Editor window lists the sources that make up your shot.



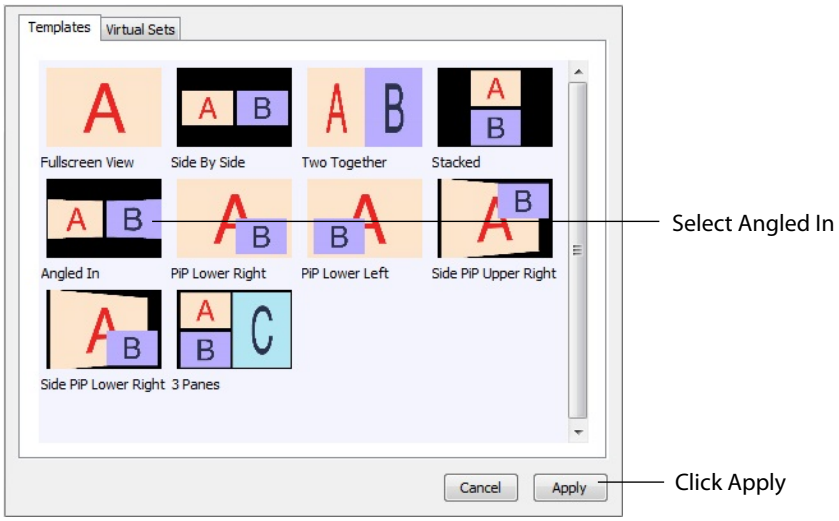

Click on the Logo icon (source) in the Configuration Area. Notice that the Logo is displayed in the Shot Preview area. Click the Ripples icon (source) and the Preview switches to Ripples. This is how you change the source media for this layer in the shot.

## Template Window

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

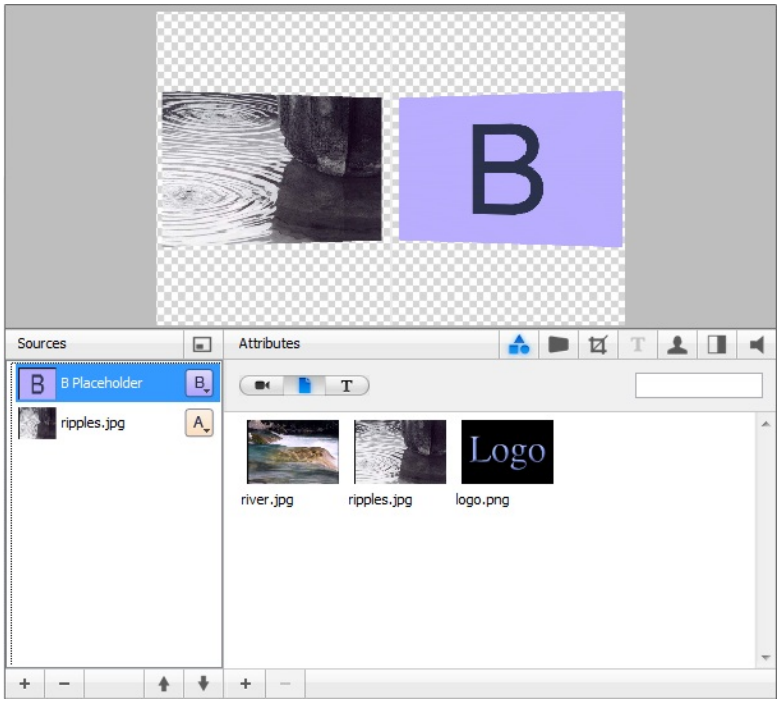



Click on the template window icon to open the Template window. Select the *Angled In* template and click the *Apply* button:



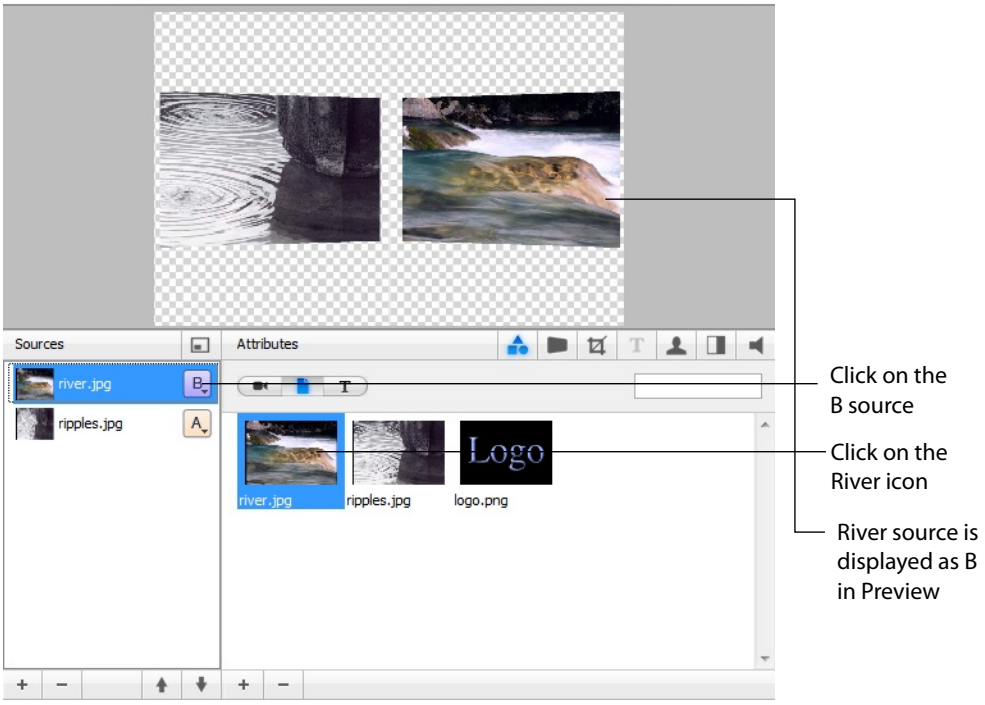

Notice the Preview has changed again in the Shot Editor window, and now shows the Ripples image on the Left side. This is because the template selected has an A and a B

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.

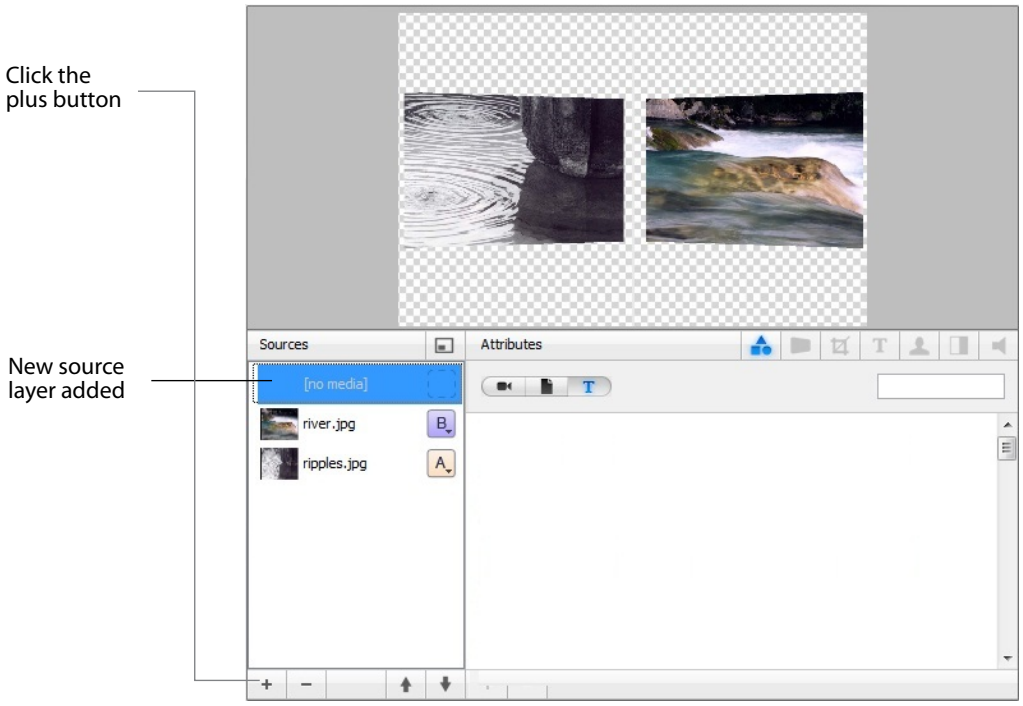
For example, to change the media for the source that is identified as B, select the source identified as B, then click the River icon in the Configuration area. Your Preview should now look like this:



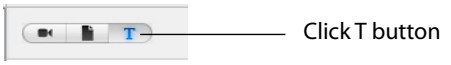
# Titles

STUDIO

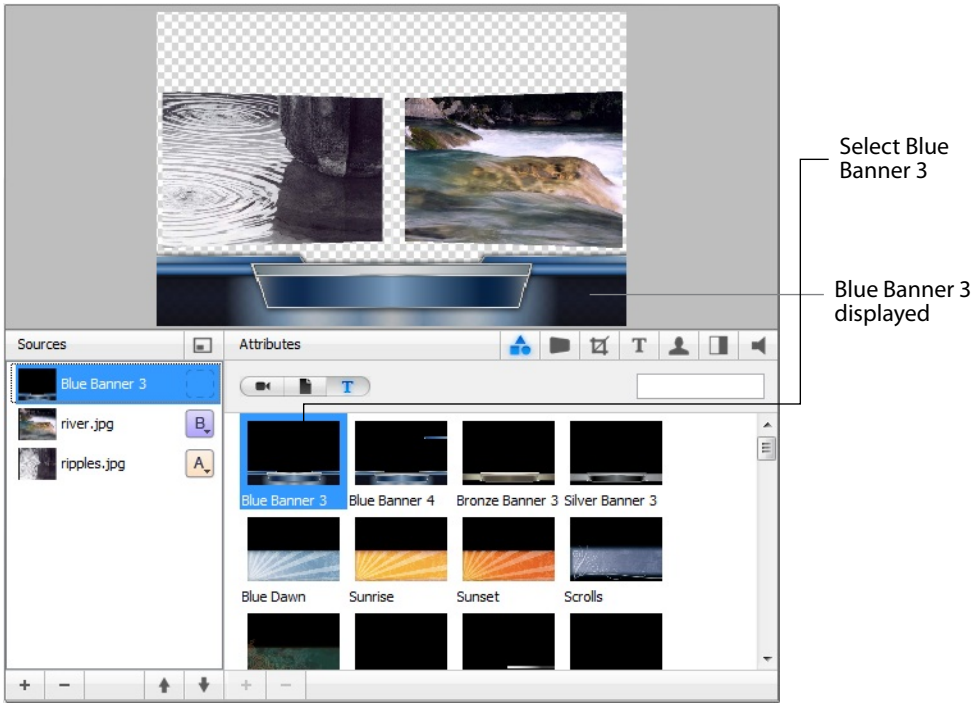
You can also add a title to a shot. First click the plus (+) button on the bottom of the Source list to add a new layer:



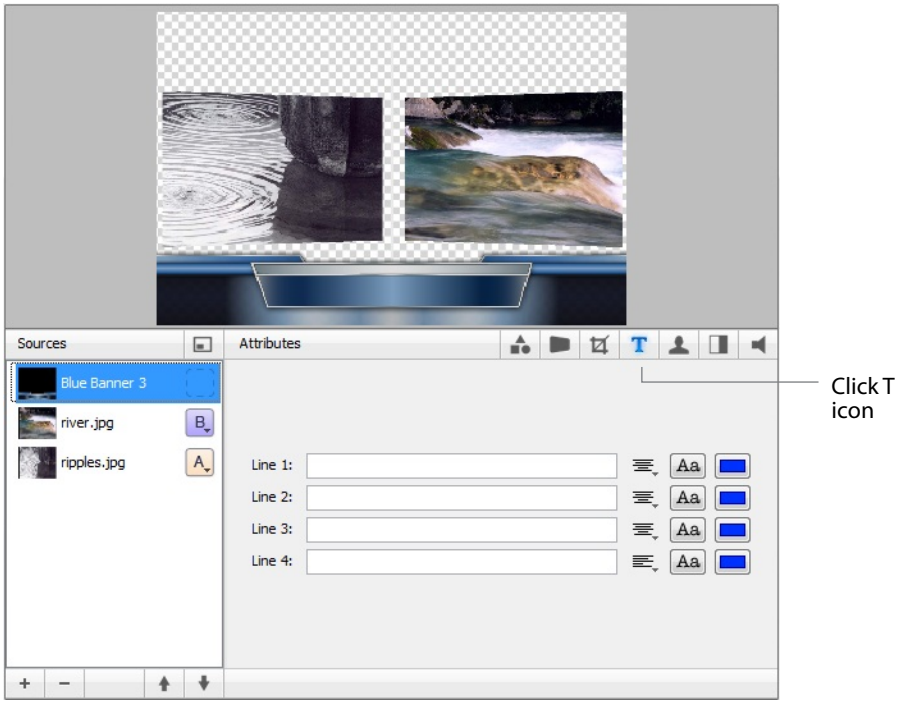

To add a title template, click the T button on the control panel:



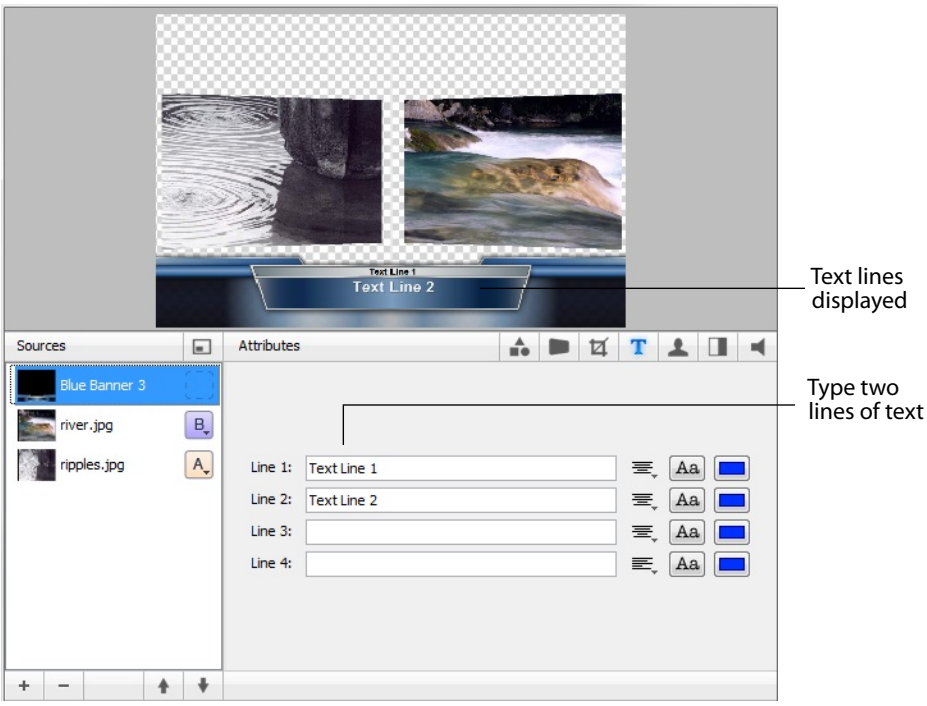
Select the title template called *Blue Banner 3* (items are not listed alphabetically) and your preview adds the title:




Next, click the **T** icon in the Attributes bar to enable text editing:



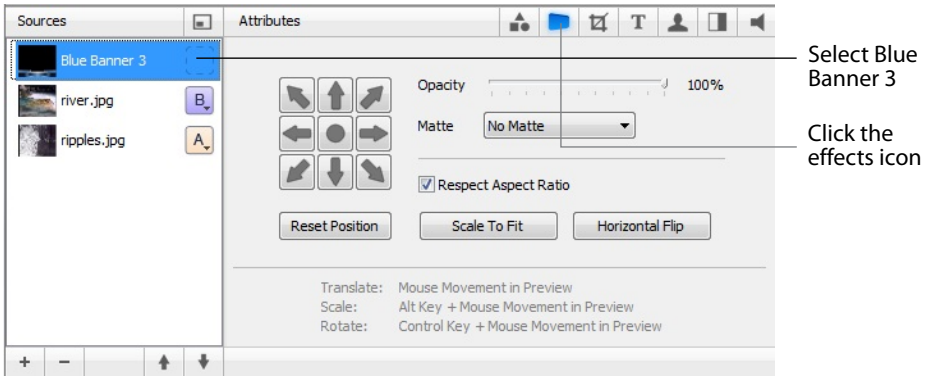
Type text into lines 1 & 2 to display it in the preview window:




# Effects/Motion

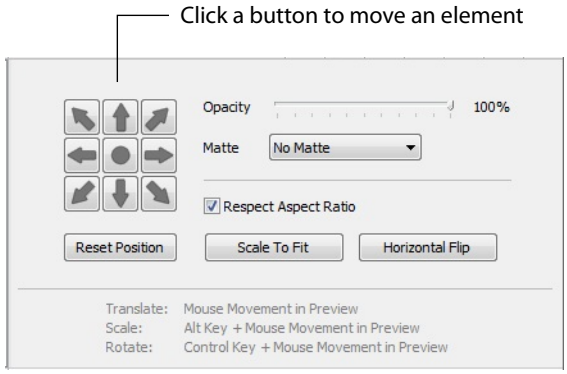
## Positioning Objects

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.




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:



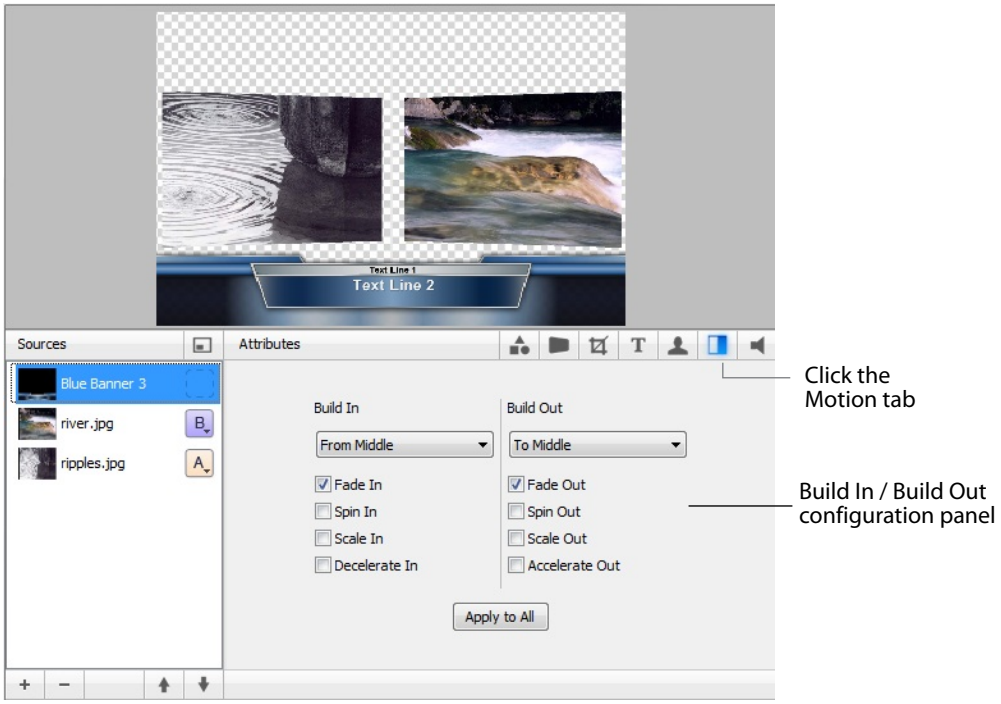

You can also resize or rotate the title.

To resize the title (while respecting aspect ratio), hold the Alt key down while moving the mouse vertically. To resize (independent of the aspect ratio), hold the Alt 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 Ctrl 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:



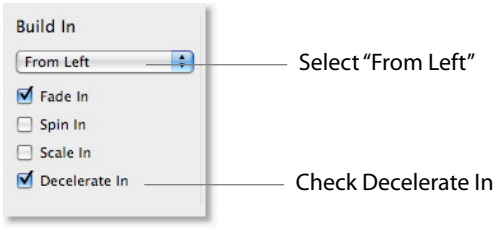
Motion only occurs during a transition (when you click Go, or click a shot in AutoLive mode). Motion defines how to add (Build-In) or remove (Build-Out) a shot element.

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:




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. Your destination is your Streaming Service.

# 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.

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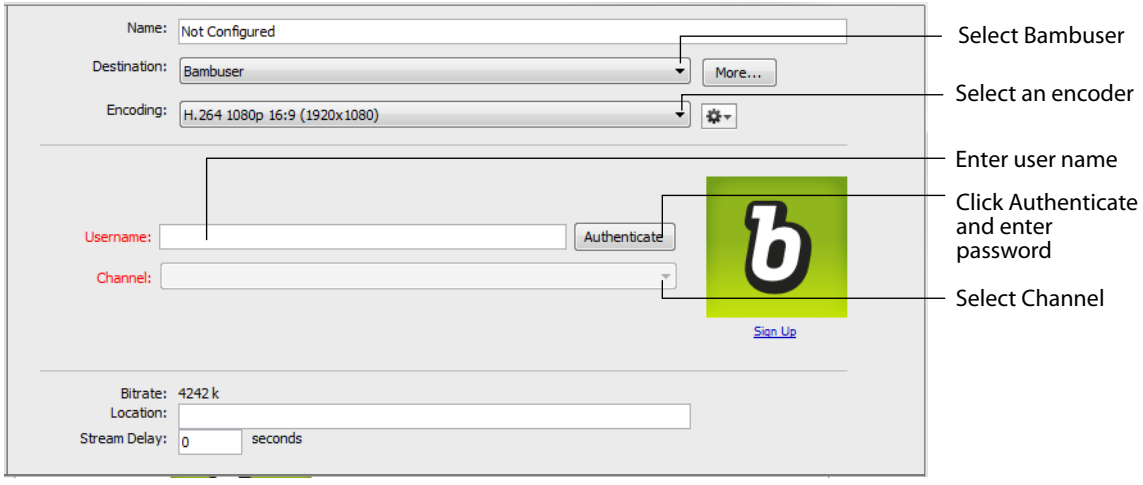
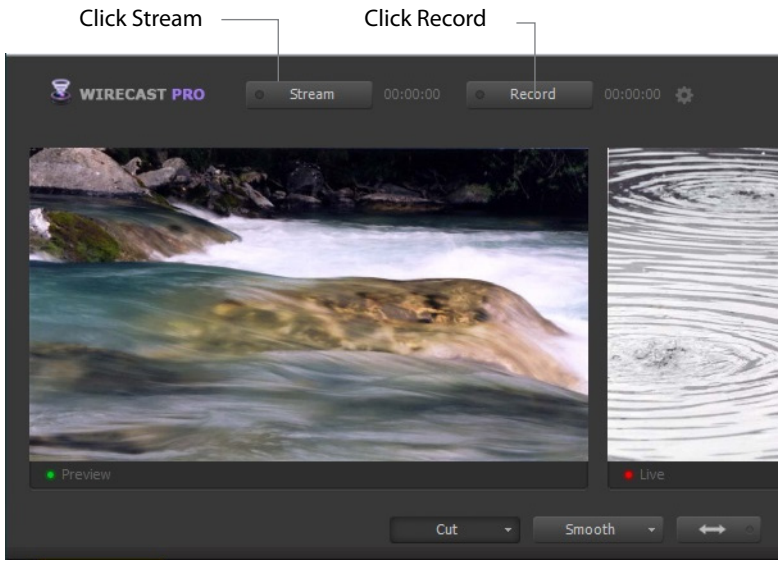
**Note:** If you do not have a username and password, you can sign up with Bambuser by clicking the Bambuser icon or by clicking *Sign Up*.

---

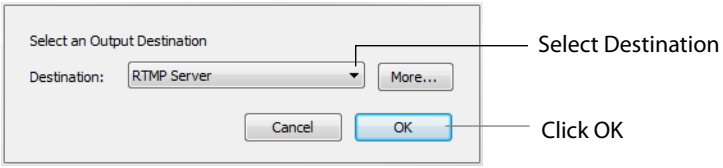
5. Select your Bambuser channel.
6. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is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



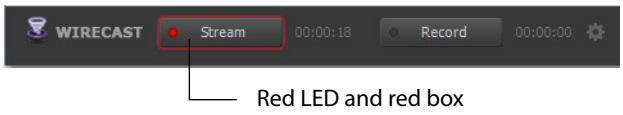
To stream your presentation, click the *Stream* button at the top of the Main window.



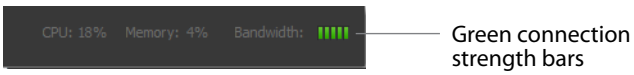

If you have not already selected a destination and logged into it, a dialog box displays. Select a destination, log in when asked to do so, then click OK.



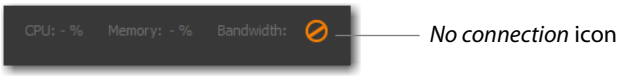

The Stream LED will blink until a connection is made. Once you are connected the LED turns full on and a red box is placed around the Stream button. If you cannout connect an error message will display.




Connection strength bars are disp0layed on the right. Fewer bars indicates a weaker (slower) connection.




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.



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*.

# 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 Ctrl+Shift+I keys, or by clicking the plus (+) button in the Shot Editor.

### Topics



## 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.

# Movies

Wirecast supports a wide variety of movie formats (MOV, AVI, WMV, etc.). Sometimes, however, you need to install a codec to use these formats. A very commonly desired codec is DivX®. Wirecast informs you if a codec is missing or if you need to install one. It is beyond the scope of this user guide to describe all of the possible codecs available on the market today, or explain the installation details. Contact the provider of the codec for details on installation.

## Problems Showing Movie Types

Although there is always the possibility that Wirecast is at fault, please try to open the media with QuickTime player and/or Windows Media Player before contacting technical support. If these players cannot open the file, most likely the codec is not properly installed (or there is no available codec for that media).

Please note that Wirecast does not currently support some file formats (.mpg, .mpeg, .m1v, .m2v). The solution is to convert the media into a different type such as MPEG-4.

Depending on the capability of your computer, Wirecast may have trouble playing back video files encoded at high resolutions and high bitrates. If you notice choppy video playback (low frame rate) and notice the CPU indicator getting high when playing back a video file, it is recommended to re-encode the video file with a lower resolution and bitrate. If the video file can now playback smoothly, make a note of the container (.mov, .mp4, etc.), resolution (720p, 480p, 360p, etc.), and bitrate used to establish a benchmark for what type of video file your computer can easily decode and stream.

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**Note:** Wirecast Studio and Pro offer improved video playback capability. If you find trouble playing back certain movie files, consider upgrading to Wirecast Studio or Pro for improved video playback.

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If QuickTime Player can play the media and Wirecast cannot, please contact Telestream at: support@telestream.net.

## AVI Video

Some AVI files may play the audio but not the video. 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.

# Using Titles

## Introduction

STUDIO

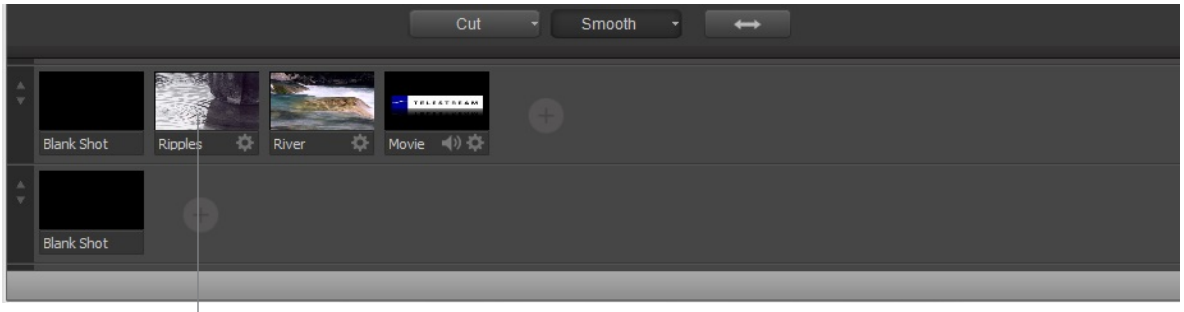
Wirecast offers a wide variety of title banner templates to use in your broadcast. Adding a professional looking title is as simple as selecting a template and adding your text.

### Topics

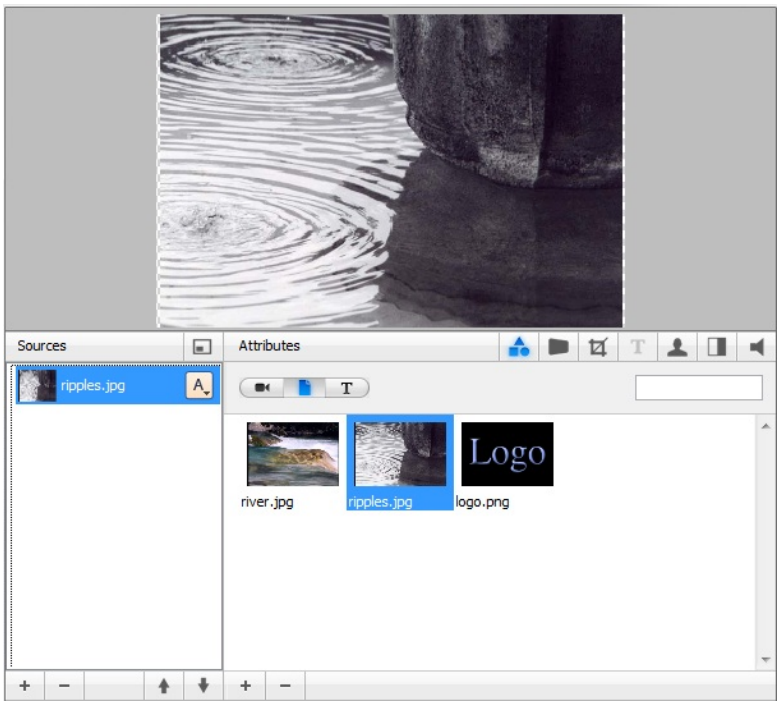


## Adding Titles

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

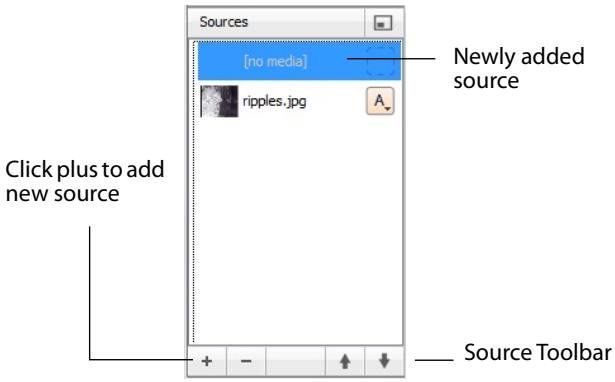


Wirecast displays the shot you selected in the Shot Editor window:

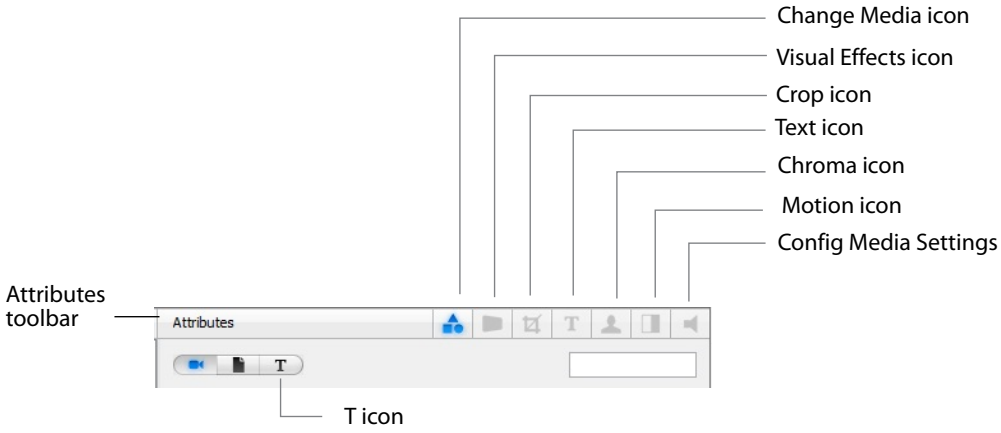



## Adding New Source

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]*.



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




# 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.

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

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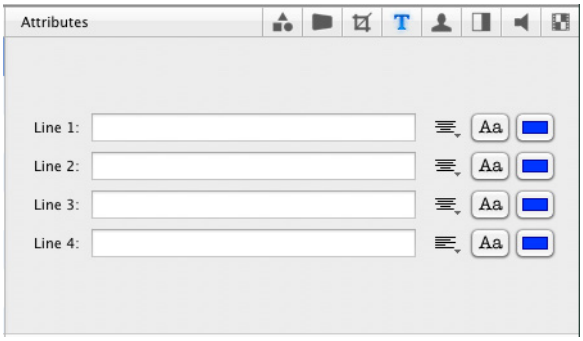
# Modifying Titles

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

## 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.

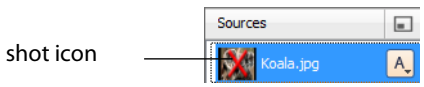
## Seminar Title

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 Ctrl+G). To turn it back on, click the shot icon again and click Go.



# 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:
*C:\Users\[UserName]\My Documents\WirecastTitles*.

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*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*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.

# Using 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.

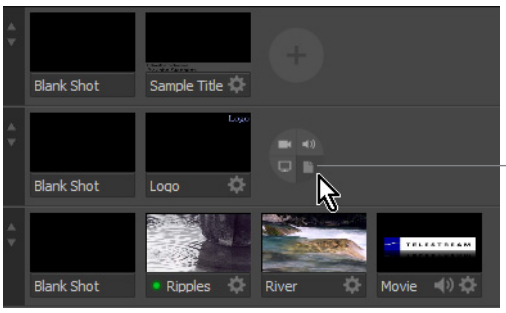
### Topics



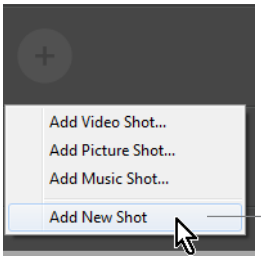
## Global Logos

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:

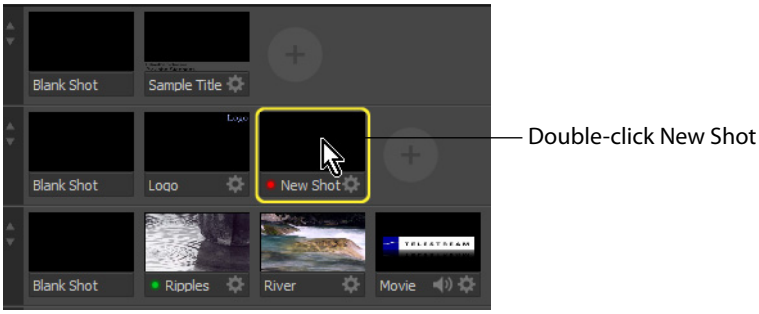
1. On Layer 2 in the Main Shot window, open the Add Shot menu.



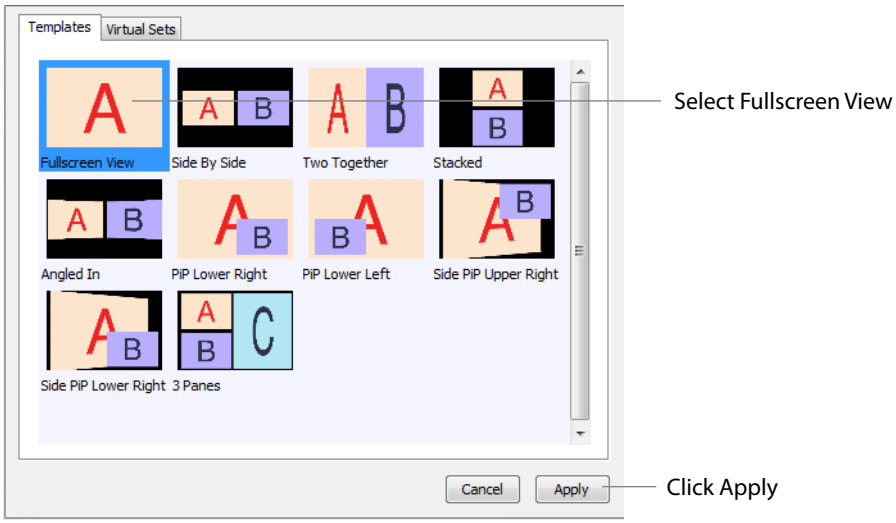
**2.** When the Add Shot menu displays, Select *Add New Shot*.



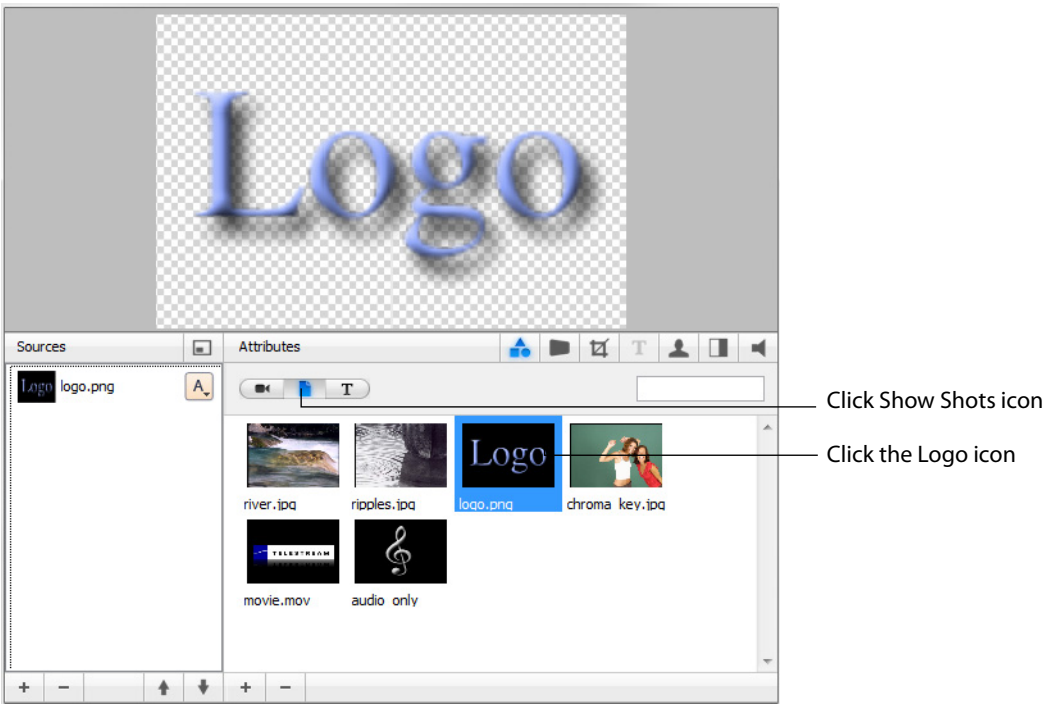

**3.** When the New Shot displays, double-click it to edit it.



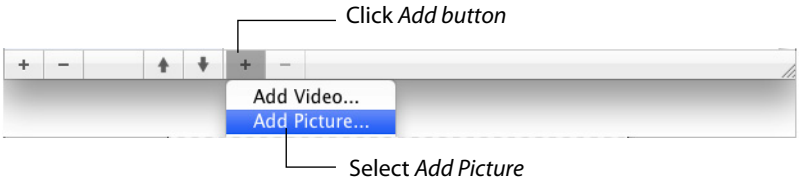

**4.** When the Template window displays, select *Fullscreen View* and click *Apply*.



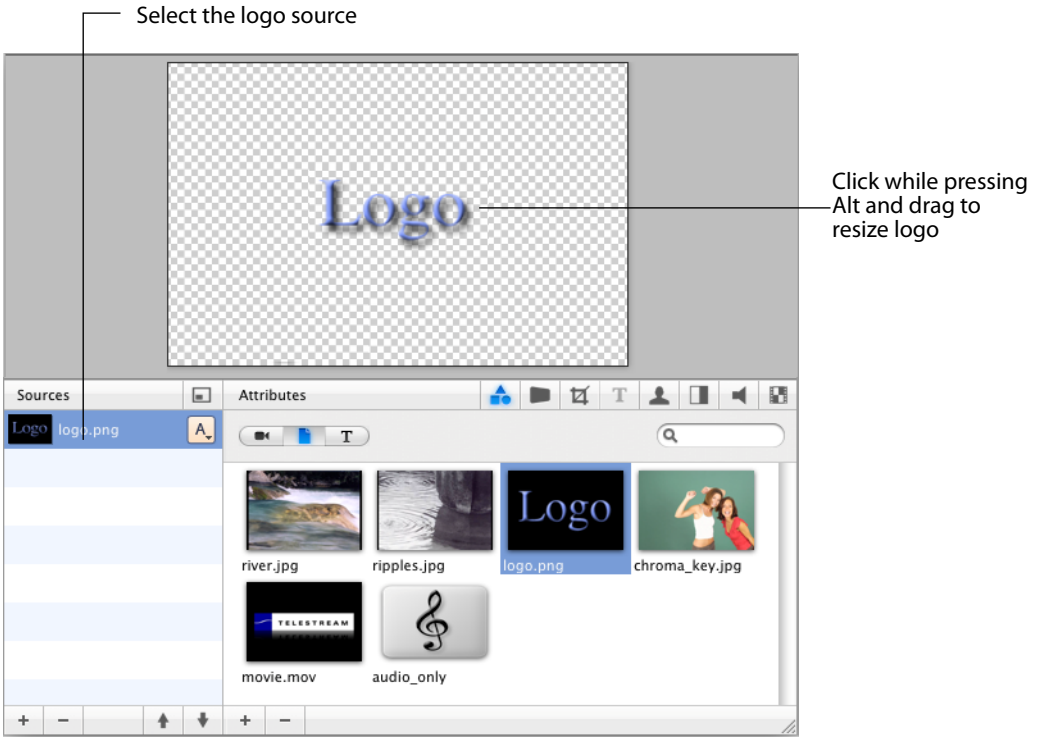
**5.** Click the *Show Shots* icon and select the logo image to display it in the Shot Preview window:



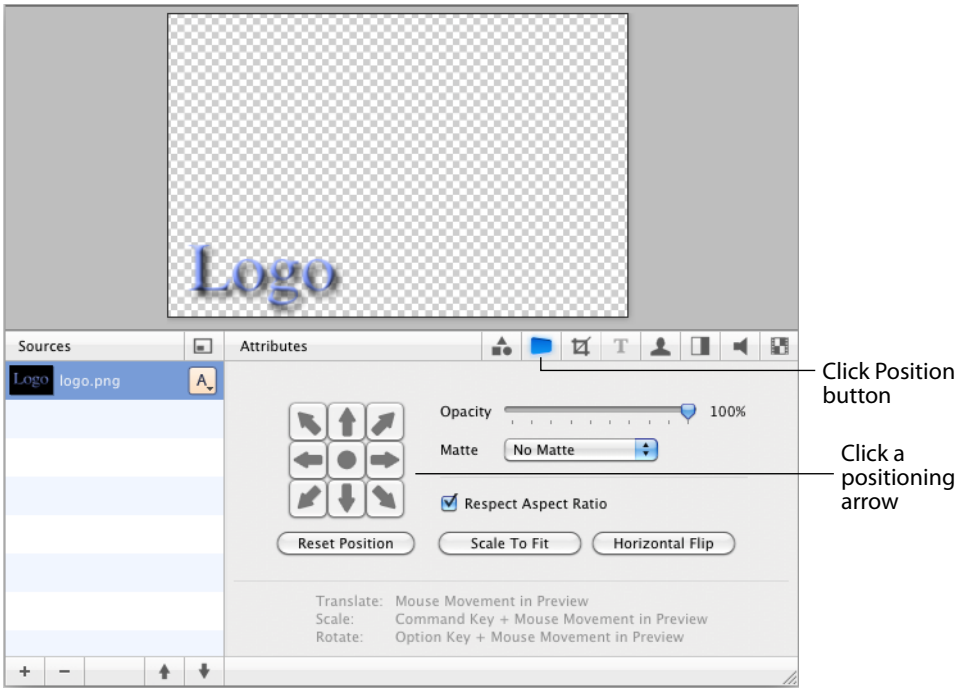

**6.** Alteratively, you can click the Add (+) button, select *Add Picture* from the drop-down menu, then select the image you want to use.



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




**8.** To reposition the Logo, click the *Position* button in the Attributes Toolbar and click one of the positioning arrows:

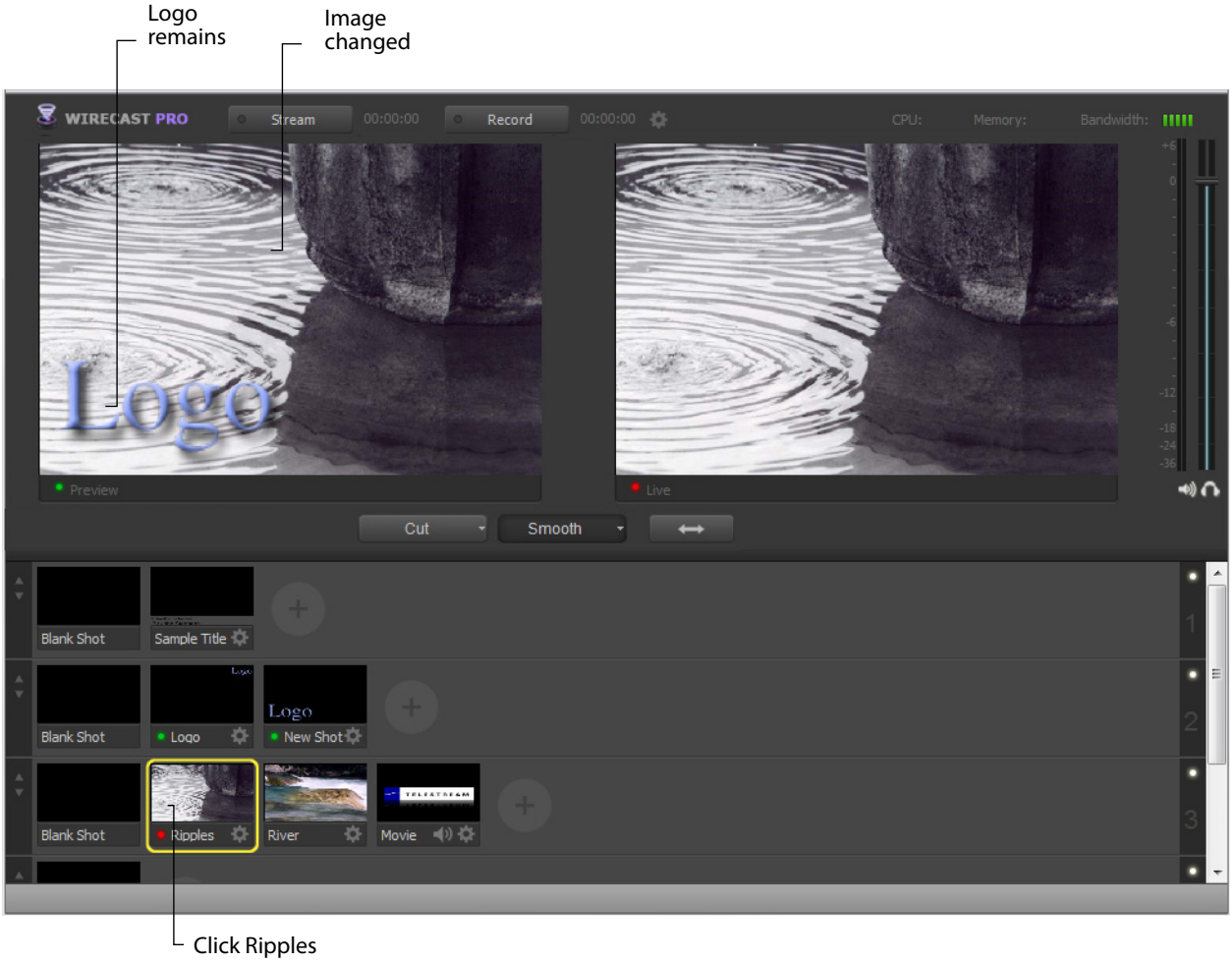


The logo can also be moved, resized, and rotated using these controls:

- **To Move:** Click and drag object to a new location.
- **To Resize (maintaining aspect ratio):** Hold the Alt key down while moving the mouse vertically.
- **To Resize (independent of the aspect ratio):** Hold the Alt 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 Control key while moving the mouse vertically and horizontally.

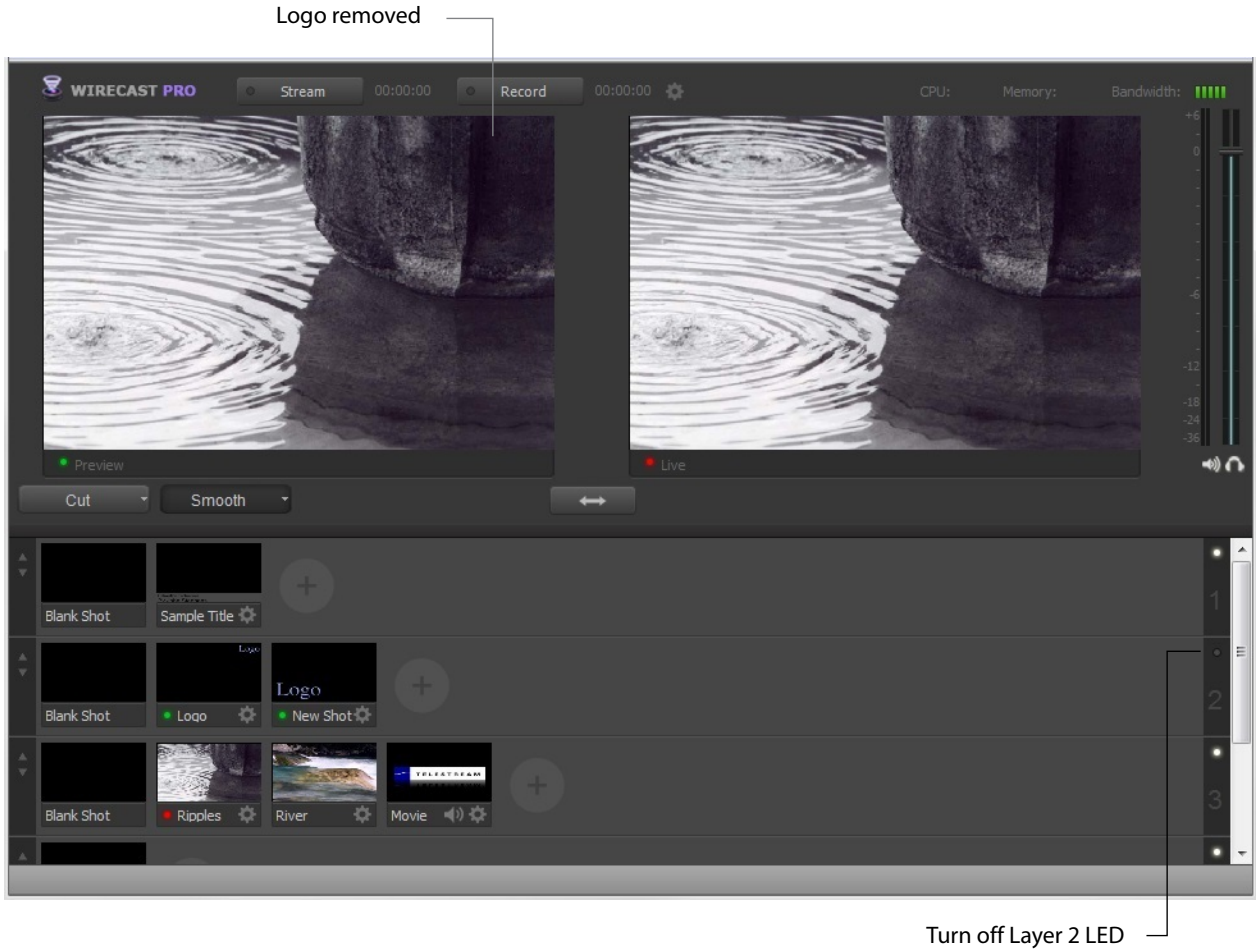
**9.** To add your Logo to the broadcast, close the Shot Edit window, and click New Shot in Layer 2.

1. 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.



## 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.

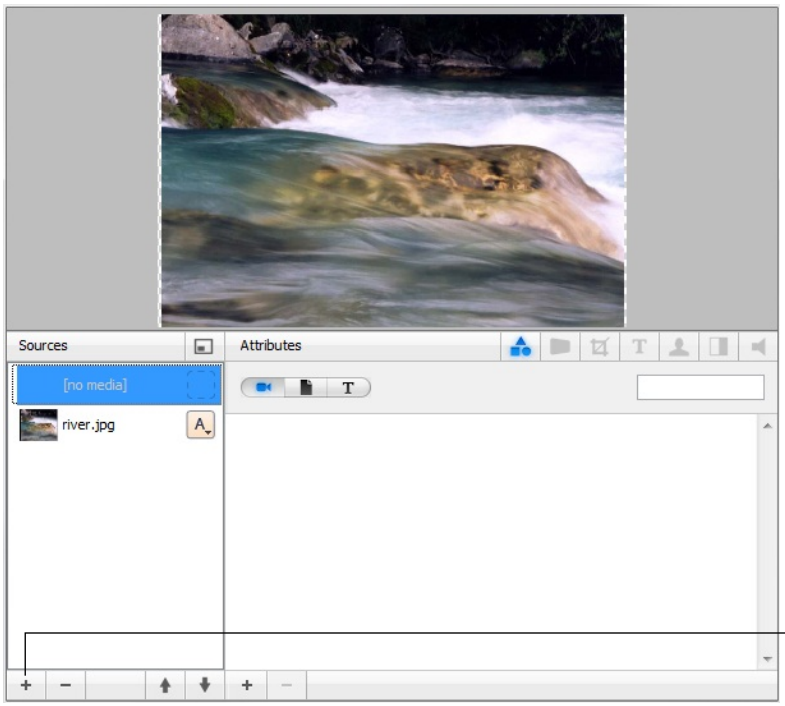



# Shot Logos

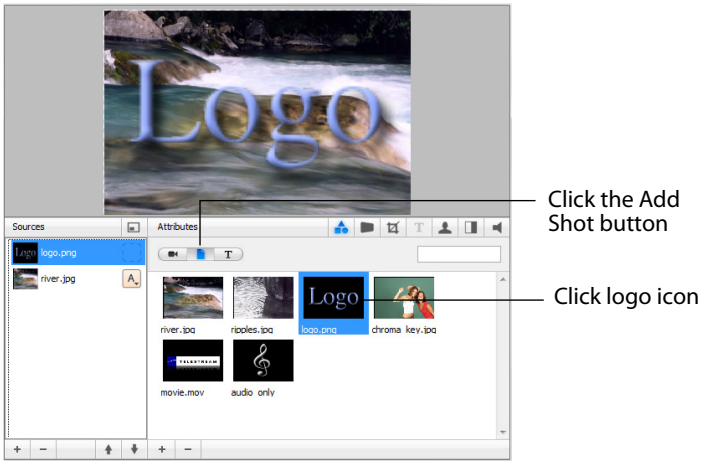
You can also create a shot with the logo embedded in it. To do this, follow these steps:

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

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

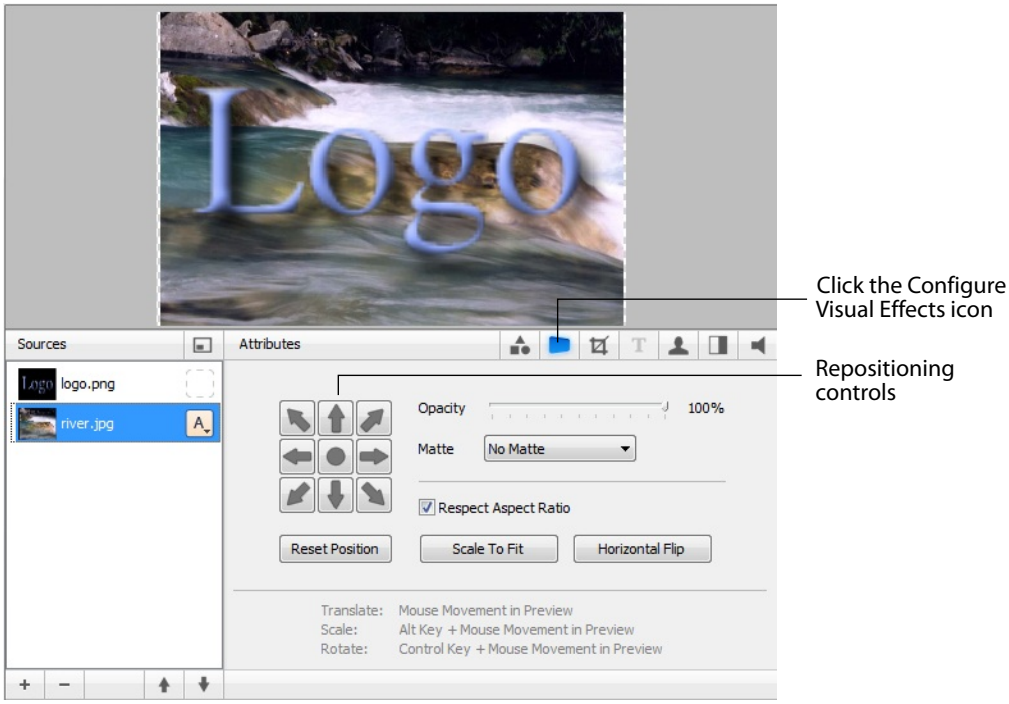



**3.** To add your logo click the *Add Shot* button then click the logo icon:




**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.

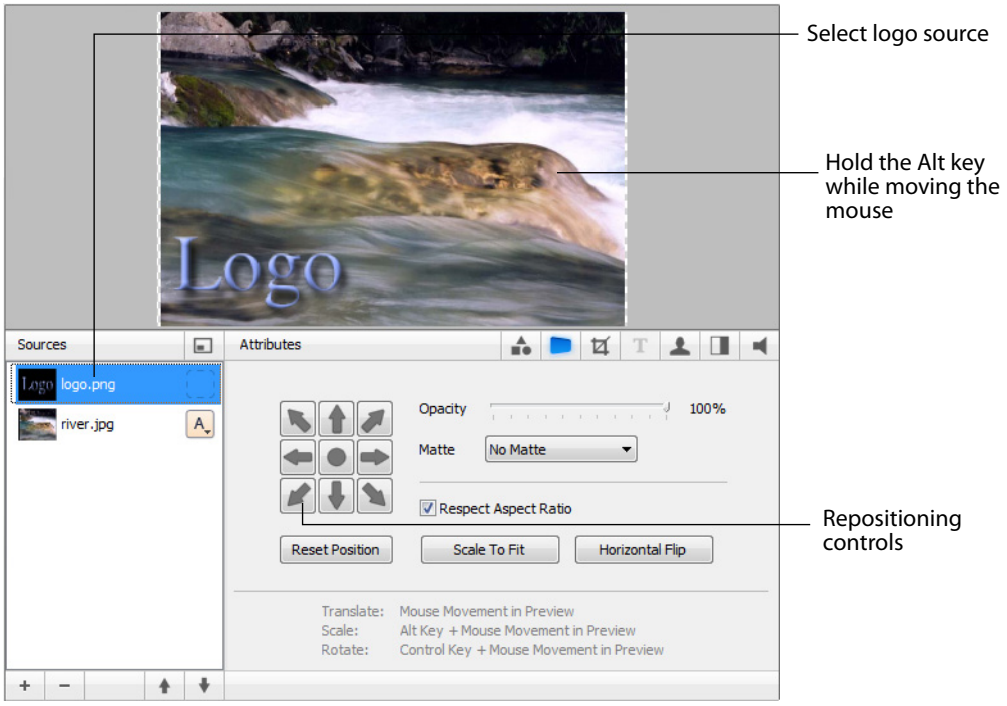
The nine repositioning controls move the logo to the top, bottom, side, corner, or middle of the display:




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



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

# Broadcasting

## Introduction

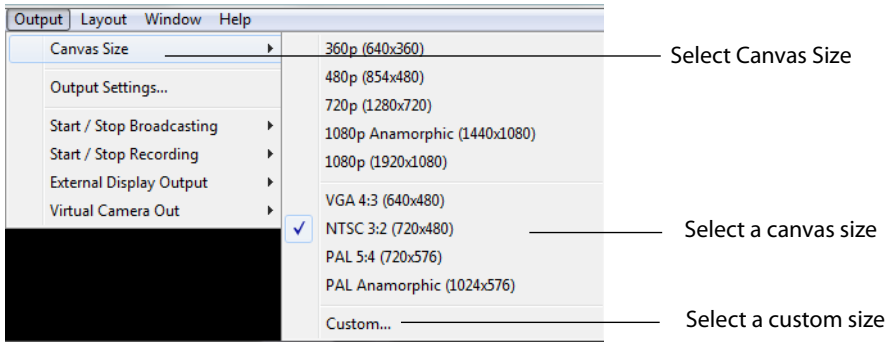
**Note:** Wirecast will not prevent your computer from entering sleep mode. Therefore, to ensure uninterrupted streaming, you should disable sleep mode on your computer while using Wirecast.

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

## Topics

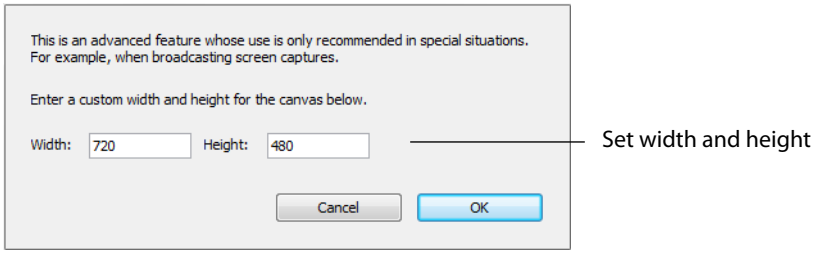
# Canvas Size

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.




**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.

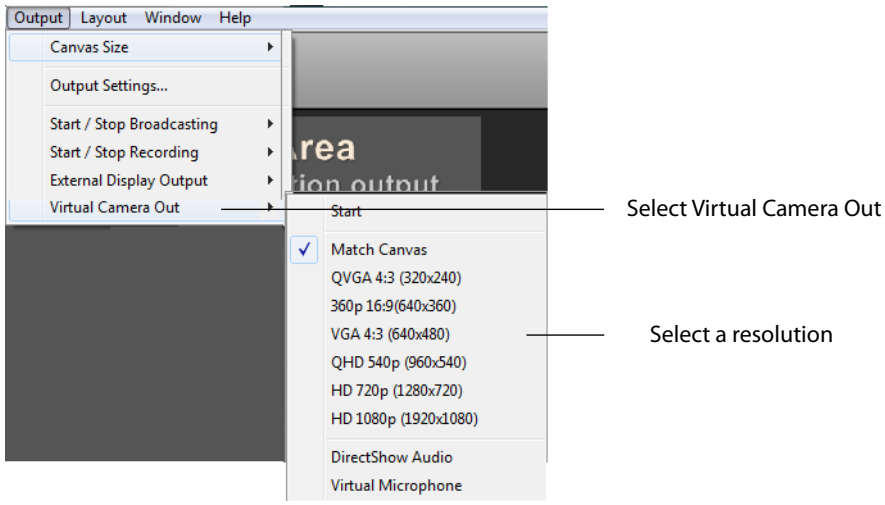


Wirecast can manage a wide variety of input sources, enabling you to have several live camera sources. However, really high-quality video sources can cause more harm than good. For example, an HD camera feed into a Wirecast canvas that is set to HD resolution and then broadcast out in HD, requires a 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

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 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.

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

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

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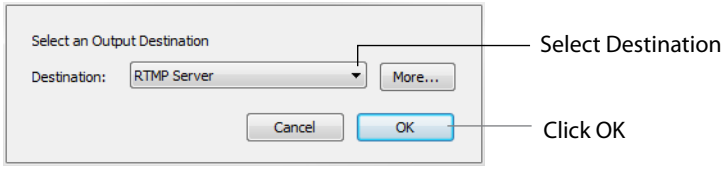
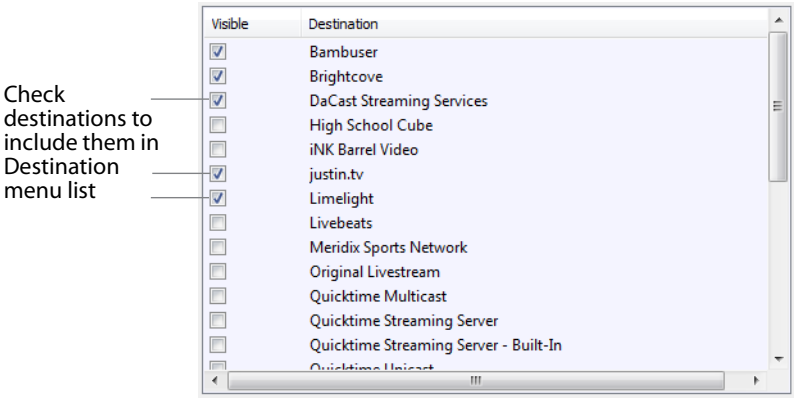
# Configuring Output Settings

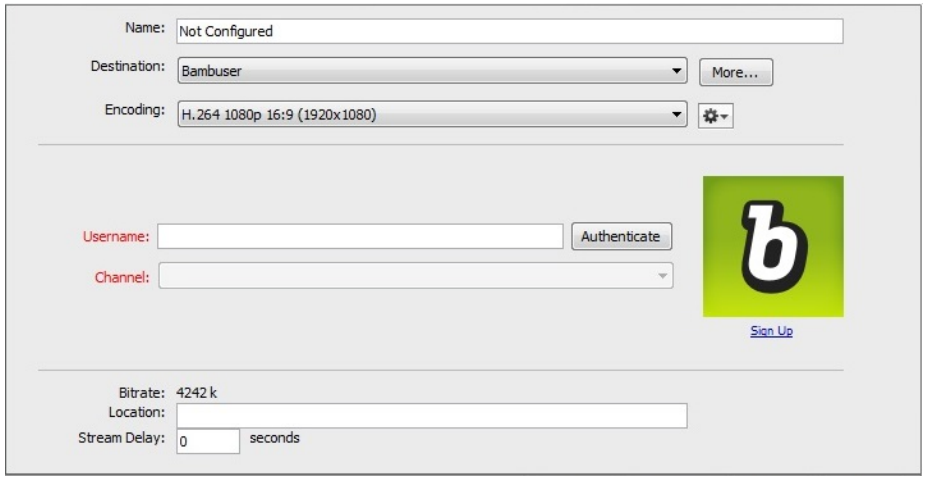
To configure output settings select *Output* > *Output Settings* (or press the Ctrl+Y keys). When the dialog box displays, select a destination and click OK to open the Output Settings window.




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.



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 in QuickTime and Windows Media formats.

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, QuickTime, 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*).

## Windows Media Destinations

There are two destinations offered with Windows Media:

- **Network** The stream broadcasts over the network, either using a Windows Media server or using your local machine as the server. To use a Windows Media server, you need to use the WM-Push To Server option. To use a your computer as a server, you need to use the WM-Pull From Server option.
- **Record to Disk** You may also record your presentation to disk. You can do this whether or not you are broadcasting to a server.

## QuickTime Destinations

There are five destinations offered with QuickTime:

1. **QuickTime Streaming Server** This talks to a QuickTime Streaming Server and uses the server to send the broadcast to users who view that server. (This is the default destination.)
2. **Built-in Streaming Server** Wirecast includes a built-in Streaming Server which allows a small number of viewers to view your broadcast. Define the name of the SDP file and you can immediately broadcast.
3. **Unicast** This broadcasts directly to one single client (computer). You must define the address for the single client, then the presentation is streamed directly to that computer.
4. **Multicast** This is an advanced feature that broadcasts globally on a network. In a LAN environment, this option can provide the ability to broadcast to multiple users without using QuickTime Streaming Server. This feature only works over a LAN, not over the Internet.
5. **Record to Disk** If you want to save your broadcast, you can use this option to record the broadcast stream to disk.

## Flash Log Files

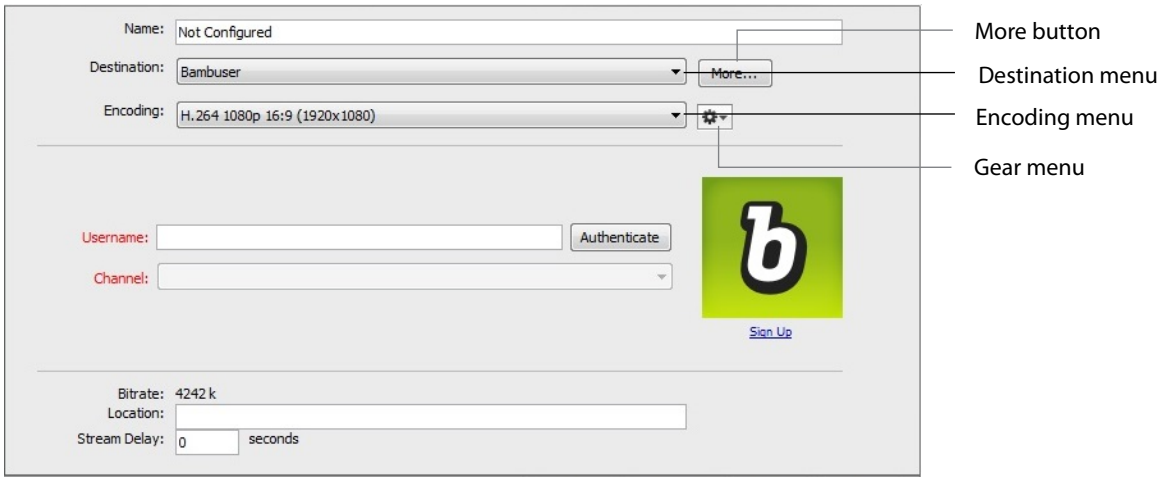
Wirecast generates log files when streaming to a flash-based destination. The files are generated in a rotating fashion with file names of flash_log.txt, flash_log_1.txt, flash_log_2.txt, etc. Technical support may ask for these log files when attempting to diagnose a flash connection issue. The Log file location is ~/Library/Logs/Wirecast/flash_log.txt.

Log file locations:

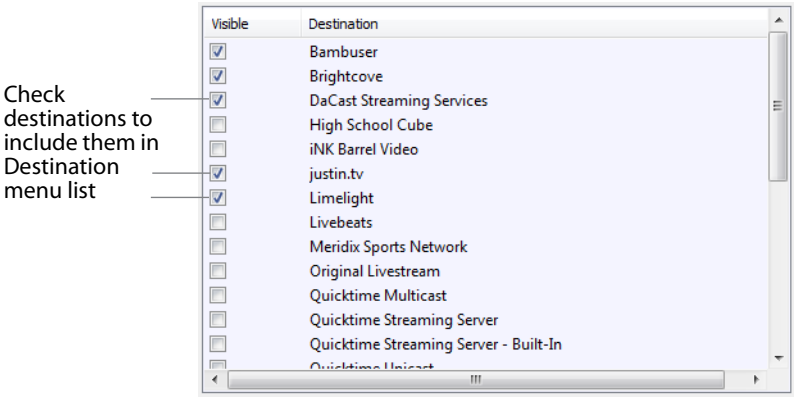
- **Windows 7 and Vista**
  *C:\users\$USER$\AppData\Roaming\Wirecast\flash_log.txt*
- **Windows XP**
  *C:\Documents and Settings\$USER$\Application Data\Wirecast\flash_log.txt*

# Encoder Presets

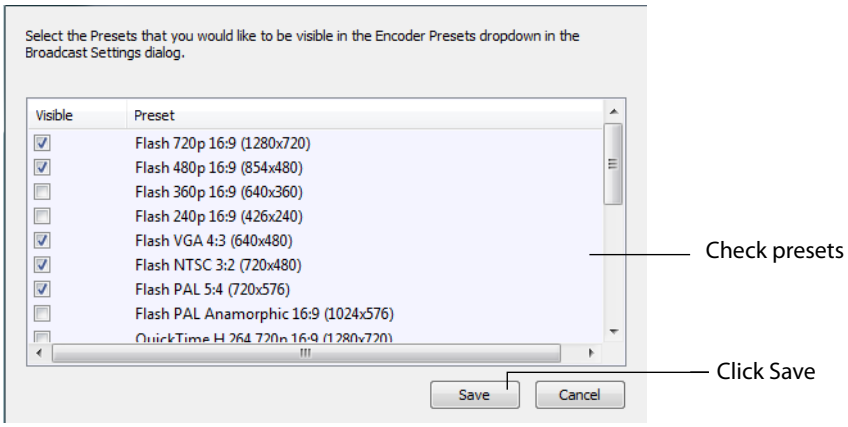
The Encoder menu is located near the top of the Output Settings window. The Destination menu is located above the Encoder menu. The More button and Gear menu provide optional settings.



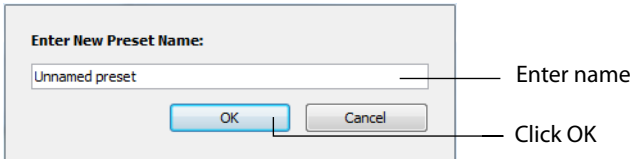

**More** Click *More* to display a list of all available destinations. Check the checkbox for each destination you want to include in the destination menu list.



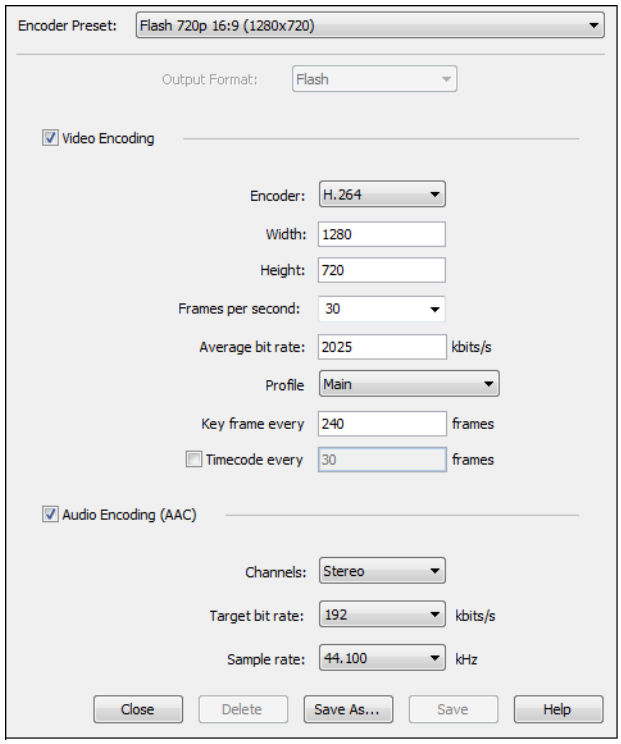
**Filter** Select *Filter* from the Gear menu to display a check list of encoder presets. Check the presets you want to display in the Encoder presets menu. Click *Save* when finished.



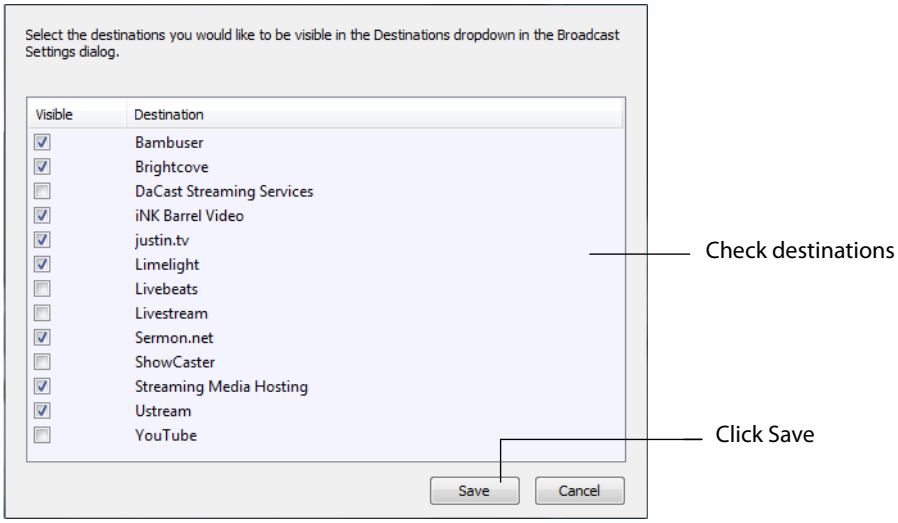

**New Preset** Select *New Preset* from the Gear menu to create a new encoder preset. Enter a name for your new preset and click OK. (See *Creating New Presets*).



**View Details** Select *View Details* from the Gear menu to modify an encoder preset. (See *Creating New Presets*).




**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.




# Windows Media Settings

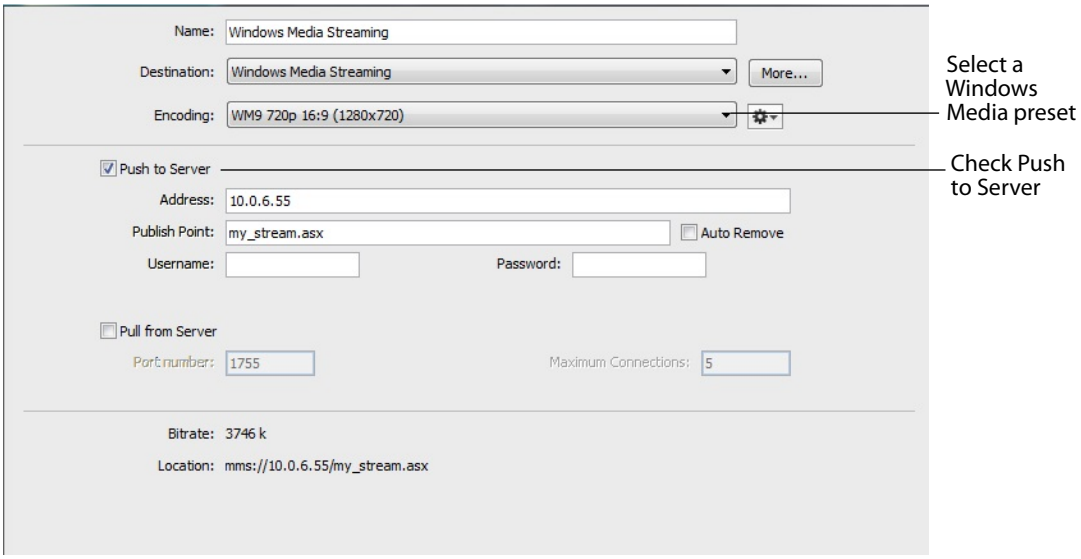
Wirecast offers several default presets. The first choice you need to make is whether you'll be using Flash, Windows Media, QuickTime, or some combination as the

broadcast technology. This decision depends on what you expect your viewers to use. Given enough bandwidth, you can stream to combinations of Flash, QuickTime and Windows Media by adding new destinations to the output settings. Windows Media can be used to broadcast WMV8, WMV9 and WMV9 Advanced.

# WM-Push To Server

To access the WM-Push To Server window, select Output > Output Settings (or press the Ctrl+Y keys). From the encoder presets drop-down menu, select any of the Windows Media based presets, and check the *Push to Server* checkbox.

To use Push To Server, you must have access to a Windows Media Server, either in your organization or hosted by an ISP (search the Internet for Streaming Windows Media Server to find one). This is the professional way of creating a stream because it places the bandwidth strain on the remote server. All you need is a good local connection to the internet to push to the Windows Media Server.




## Configuration Settings

**Address** Enter the Internet address of the Windows Media Server you use to broadcast.

**Publish Point** Enter the name of the file that is put on the server, and that is used as part of the URL that your users use. Wirecast cannot know the resulting URL that your users use, as this may vary depending on the installation of the Windows Media Server. Contact your Windows Media Server administrator to understand how to build a proper URL for your viewers, based on the Publish Point.

**Auto Remove** Check Auto Remove to remove the file used as the publish point when the broadcast is over.

**Username/Password** Enter the user name and password for the Windows Media Server. Contact your Windows Media Server administrator to obtain these. If there is no user name or password required, leave these fields empty.

# WM-Pull From Server

To access the WM-Pull From Server window, select Output > Output Settings (or press the Ctrl+Y keys). From the encoder presets drop-down menu, select any of the Windows Media based presets, and check the *Pull From Server* checkbox.

This option turns your local computer into a mini Windows Media Server, enabling you to broadcast immediately. There are, however, some limitations:

1. **User Requirement** You cannot have more than 50 users connected at any one time.
2. **Bandwidth Requirement** You must have enough bandwidth on your Wirecast computer to supply all of your viewers.
3. **CPU Requirement** Since the Wirecast computer is acting as a server the CPU must be fast enough to handle all of the user connections.

The greatest issue with this method is bandwidth. If, for example, all of your viewers are on a local network (a business or school), then you should be able to use this method. However, if you have a DSL connection to the internet and you want to broadcast a 200k stream to 20 viewers, you may not have enough upload bandwidth to accommodate this.

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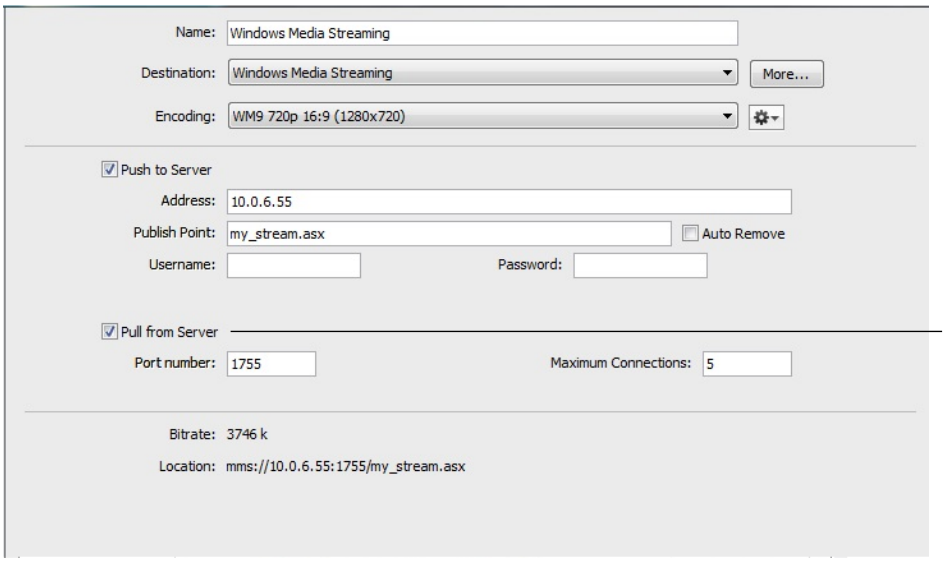
**Note:** Be aware that when you use Wirecast with an internet connection what matters is your upload bandwidth. Most ISP businesses offer packages that have a higher download than upload bandwidth (e.g., a 512k DSL package is often only 256k upload).

---

## Configuration Settings

To use the Network-Pull from Server option, set the port number that your users use to connect to your computer. They connect by using the Open URL option in Windows

Media Player, and enter a URL. For example, if your computer IP address is 10.0.5.55 and your port is 1755, use *mms://10.0.5.55:1755*.




**Port Number** Enter the port on your computer to use as the broadcast port. This can be, effectively, any port number as long as it doesn't conflict with any existing ports on your computer. Be aware that if you have any firewall software installed, you need to enable the port entered here.

**Maximum Connections** The maximum number of connections your server accepts is 50 users. Your CPU is affected by the number of users you have connected, therefore you may need to limit the number of connections.

# QuickTime Streaming Server

Apple's QuickTime Streaming Server runs on Macintosh hardware. The Darwin Streaming Server is the open source streaming server offered by Apple, and runs on many flavors of Unix (OpenBSD, Linux, etc.).

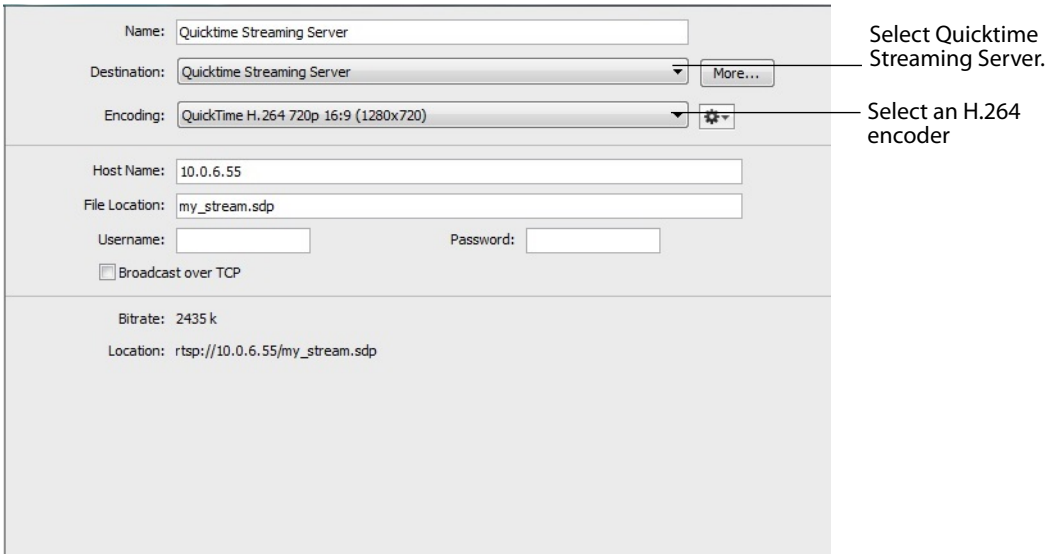
Streaming servers act as reflectors, so your goal is to broadcast from Wirecast directly to one of these servers that, in turn, sends the stream on to your viewers.

---

**Note:** This document does not describe configuring or maintaining QuickTime/ Darwin Streaming Server.

---

To stream to a QuickTime/Darwin Streaming Server, select an H.264 encoder and select *QuickTime Streaming Server* as the destination:




**Host Name** Enter the name (or IP address) of the host computer that is running your streaming server.

**File Location** The streaming server uses a file on the server to contain the specific settings for the stream. You need to define the name of that file here. When you send your viewers the URL for them to use, this file name is a part of that URL. For example, if the File Location is my_stream and the Host Name is www.stream.com then your viewers use this URL: *rtsp://www.stream.com/my_stream.sdp*. This information displays in the bottom of the window as you configure the settings.

**Username/Password** Enter the user name and password, if your streaming server requires it.

---

**Note:** This password is saved as plain-text in the Wirecast document.

---

**Broadcast Over TCP** Defines whether you are using UDP or TCP to send the data to the streaming server. This only defines the connection between Wirecast and the streaming server and has nothing to do with how your viewers receive the broadcast.

UDP is faster, but if you are using a firewall or are behind a NAT, you may not be able to use UDP and you should use TCP. So, if Wirecast can send UDP to the server without errors, use it. It is faster.

# Actions

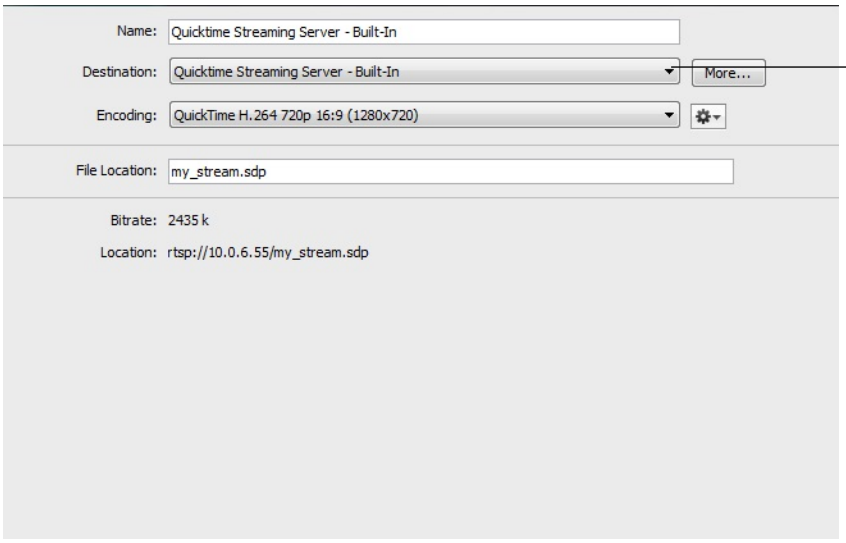
When you have Announce to QuickTime Streaming Server selected, the gear icon has these three actions:

- **Open in QuickTime Player** This opens the stream in QuickTime Player. This is a handy shortcut and saves you from typing "rtsp://…" into QuickTime Player.
- **Save Movie** This saves a QuickTime movie to disk that contains a reference to the configured stream. This Movie file is very small and tells QuickTime where to find your actual stream. It does not contain the data of your movie. When you are not streaming, this movie will not work for your users. But, you can send this movie to your users or post it on your Website so that your users can view your stream when you are broadcasting.
- **Save Multi-stream Reference Movie** This saves a QuickTime movie to disk that contains a reference to all of your QuickTime Streaming Server streams. You can send this movie to your users, or post it on your Website, so that your users can view all your streams. QuickTime chooses which stream to use based upon the users settings. This is a very handy way to broadcast multiple bit-rates at the same time.

# QuickTime Built-in Server

Wirecast provides the free Darwin Streaming Server from Apple. When you use the Built-in Streaming Server it is running on your local computer and uses local resources, causing Wirecast to run slower.

The Built-in Server enables each of your users to connect directly to your computer. If you do not have sufficient bandwidth you won't be able to host many viewers (one or two over DSL, perhaps up to five or ten on a local network). If you plan to have many viewers, you need use a hosted QuickTime Streaming Server which is selected from *Destination > Announce To Quicktime Streaming Server* in Output Settings:




**File Location** Enter the name of the file used by the streaming server that contains the settings for the stream. When you send your viewers a URL to use, this file name is a part of that URL. For example, if the File Location is *my_stream* and the Host Name is

*www.stream.com*, then your viewers would use *rtsp://www.stream.com/my_stream.sdp*. This information is display after the File Location as you configure the settings.

## Actions

When you have Built-in Streaming Server selected, the gear icon provides three actions:

- **Open in QuickTime Player** This opens the stream in QuickTime Player. This is a handy shortcut and saves you from typing "rtsp://…" into QuickTime Player.
- **Save Movie** This saves a QuickTime movie to disk that contains a reference to the configured stream. This Movie file is very small and tells QuickTime where to find your actual stream. It does not contain the data of your movie. When you are not streaming, this movie will not work for your users. But, you can send this movie to your users or post it on your Website so that your users can view your stream when you are broadcasting.
- **Save Multi-stream Reference Movie** This saves a QuickTime movie to disk that contains a reference to all of your QuickTime Streaming Server streams. You can send this movie to your users, or post it on your Website, so that your users can view all your streams. QuickTime choose which stream to use based upon the users settings. This is a very handy way to broadcast multiple bit-rates at the same time.

# QuickTime Unicast

Wirecast lets you broadcast to a specific computer. This is called unicast. To configure the output settings for a unicast, follow these steps:

1. Select *Quicktime Unicast* under the Destination menu.
2. Enter the address. This is the domain name or IP address of the computer receiving your unicast.
3. Enter the Video Port number. This is the video port on the computer receiving your unicast.
4. Enter the Audio Port. This is the audio port on the computer receiving your unicast.
5. Create an SDP File. You must create an SDP file 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. Your remote viewer must open the SDP file using QuickTime player.

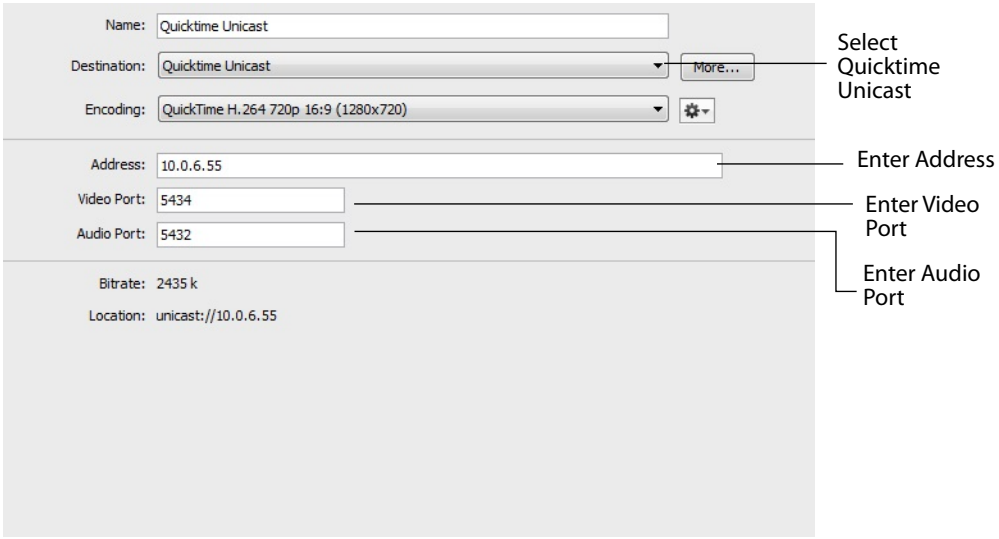
---

**Note:** Your unicast information is not stored in this file. Only QuickTime Streaming Server streams are saved to this file.

---

6. Save a Multi-stream Reference Movie (optionally present). This menu option is only available if you have other settings which use QuickTime Streaming Server.

7. Click the Save button to save your settings.




8. Start your broadcast by selecting *Output* > *Start Broadcast* in the Main window.

# QuickTime Multicast

Wirecast lets you broadcast to your local network so that any computer on that network can view the broadcast. This is called multicast. To configure the output settings for a multicast, follow these steps:

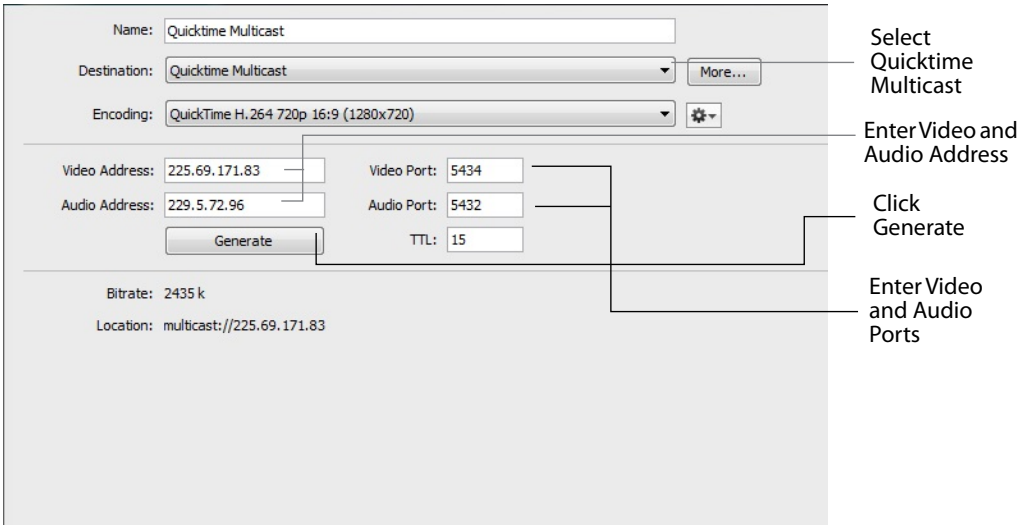
1. Select *Quicktime Multicast* under the Destination menu.
2. Enter the Video and Audio Addresses. This is the unique address the multicast uses for video and audio. Although this looks like an internet address, it is not. This address must be unique among applications on your network that use the multicast protocol. Click the Generate button to generate random video and audio addresses.
3. Enter the Video Port number. This is the port that the multicast protocol uses for video. Normally, this is 5434.
4. Enter the Audio Port. This is the port that the multicast protocol uses for audio. Normally, this is 5432.
5. Create an SDP File. You must create an SDP file 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. Your remote viewer must open the SDP file using QuickTime player.

---

**Note:** Your multicast information is not stored in this file. Only QuickTime Streaming Server streams are saved to this file.

---

6. Save a Multi-stream Reference Movie (optionally present). This menu option is only available if you have other settings which use Announce To QuickTime Streaming Server.
7. Click the Save button to save your settings.




8. Start your broadcast by selecting *Output* > *Start Broadcast* in the Main window.

# How Multicast Works

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 RMTP 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 a Flash preset from the encoder presets menu.
2. Select Destination > RTMP Flash Server.
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.

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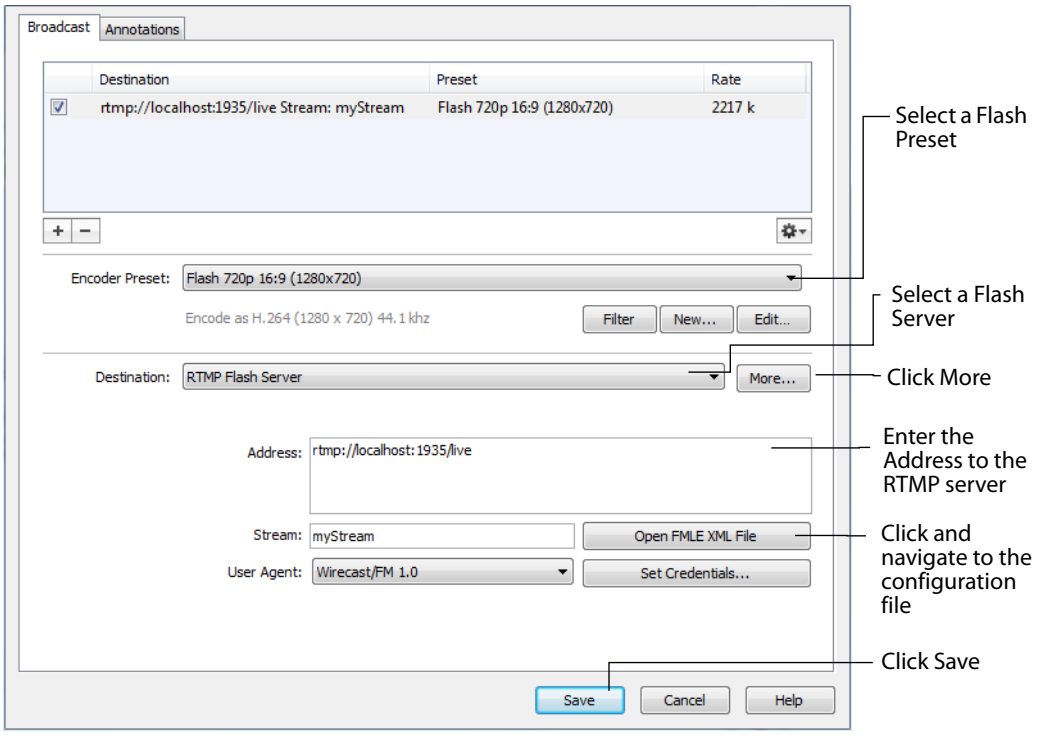
**Note:** Only the Address and Stream information from the XML configuration file is used. No Encoding information is imported.

---

5. Click Save to save your settings:



# Flash To Akamai

To stream to Akamai, follow these steps:

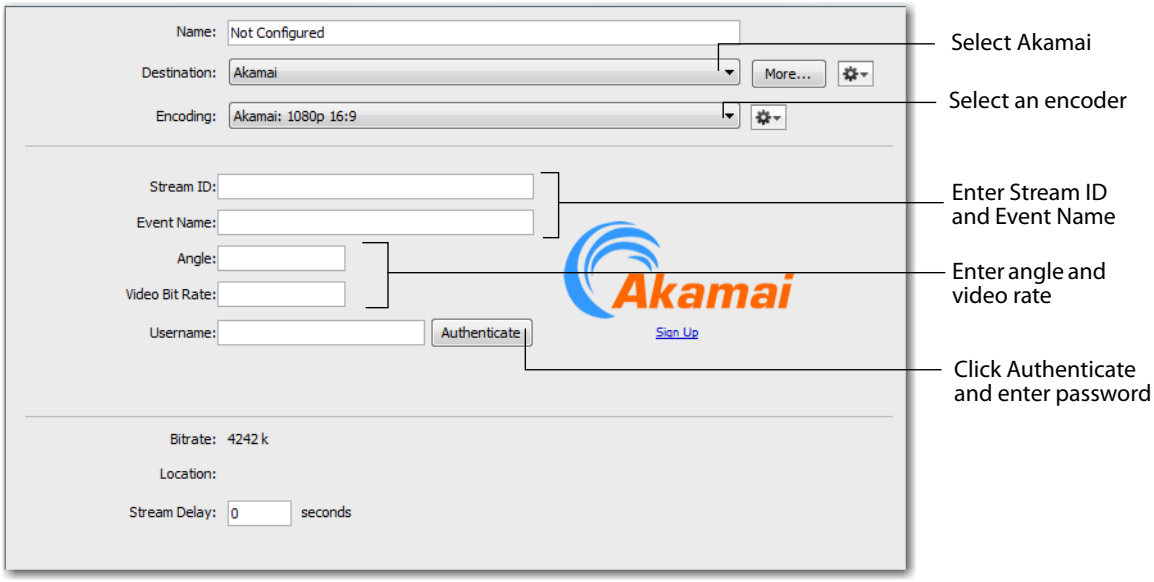
1. Select *Akamai* from the Destination menu.
2. Select an encoder.
3. Enter your Akamai Stream ID and Event Name.
4. Enter your Akamai Angle and Video Rate.
5. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time 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 Akamai by clicking the Akamai 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.



# Flash To Bambuser

To stream to Bambuser, follow these steps:

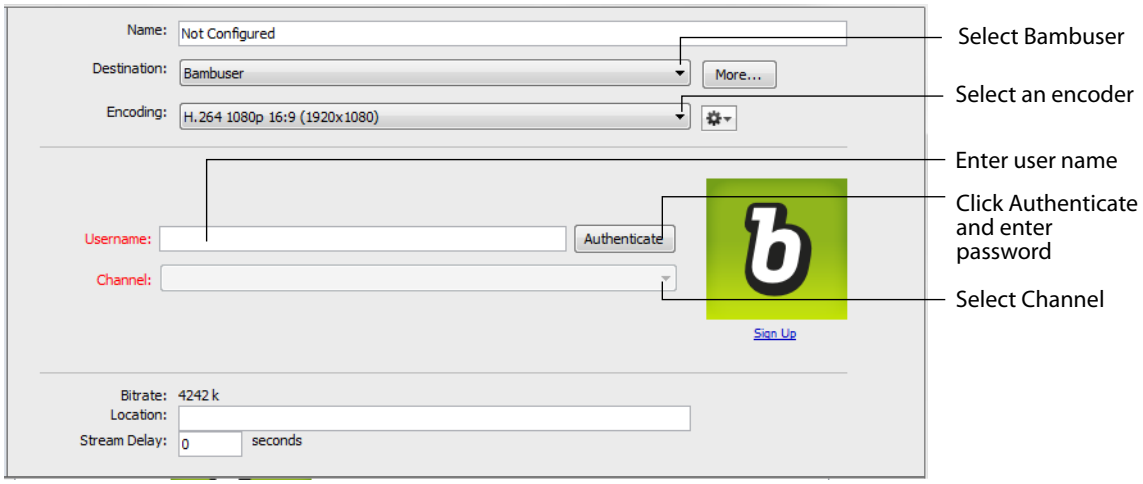
1. Select *Bambuser* from the Destination menu.
2. Select an encoder.
3. Enter your Bambuser username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for 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.



# Flash To Brightcove

To stream to Brightcove, follow these steps:

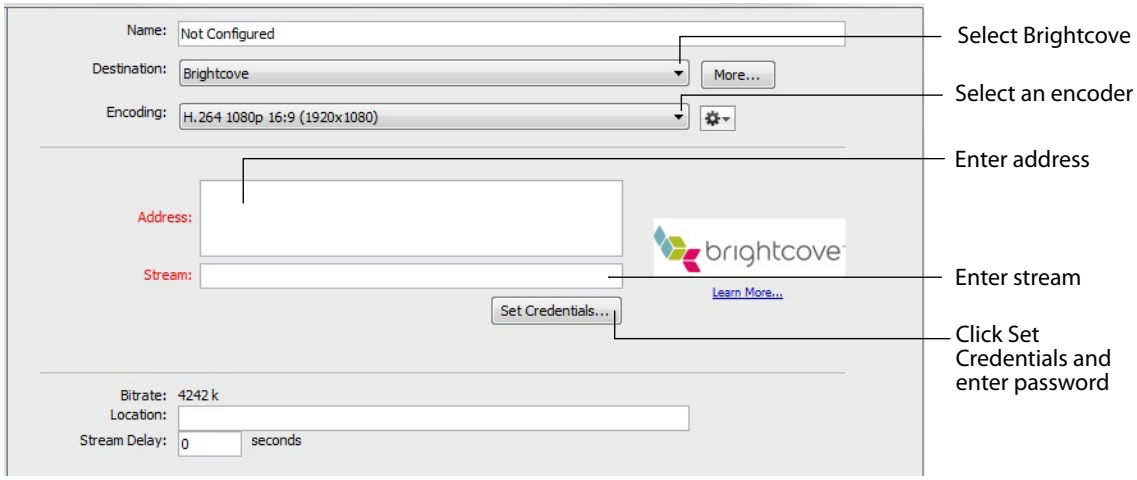
1. Select *Brightcove* from the Destination menu.
2. Select an encoder.
3. Enter the domain name or IP address of your server (this is provided by Brightcove).
4. Enter the stream name of your broadcast (this is provided by Brightcove).
5. Click *Set Credentials* to enter your authorized username and password.

---

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



# Flash To Churchstreaming.tv

To stream to churchstreaming.tv, follow these steps:

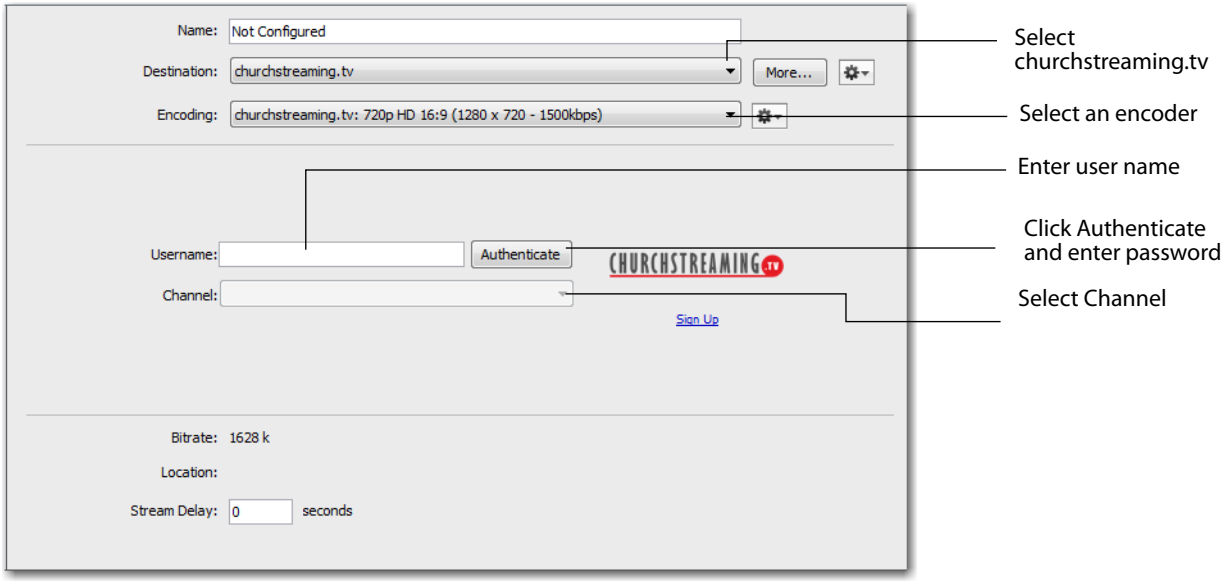
1. Select *churchstreaming.tv* from the Destination menu.
2. Select an encoder.
3. Enter your churchstreaming.tv username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel 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 churchstreaming.tv by clicking the churchstreaming.tv icon, or by clicking *Sign Up*.

---

5. Select your churchstreaming.tv 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*.



# Flash To DaCast Streaming Services

To stream to DaCast Streaming Services, follow these steps:

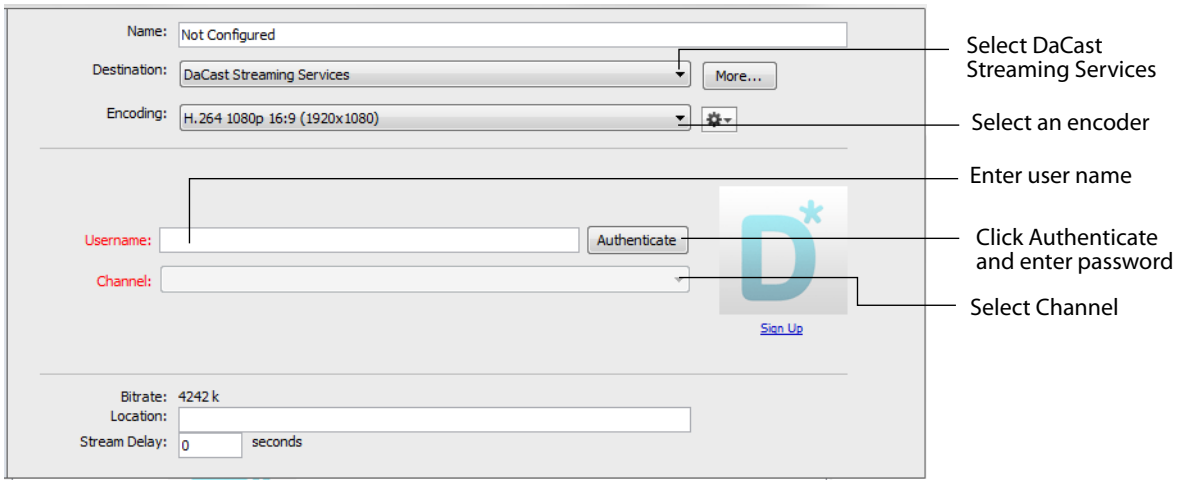
1. Select *DaCast Streaming Services* from the Destination menu.
2. Select an encoder.
3. Enter your DaCast Streaming Services username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores 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 DaCast Streaming by clicking the DaCast Streaming icon or by clicking *Sign Up*.

---

5. Select your DaCast Streaming 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*.



# Flash To High School Cube

To stream to High School Cube, follow these steps:

1. Select *High School Cube* from the Destination menu.
2. Select an encoder.
3. 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 High School Cube by clicking the High School Cube icon or by clicking *Sign Up*.

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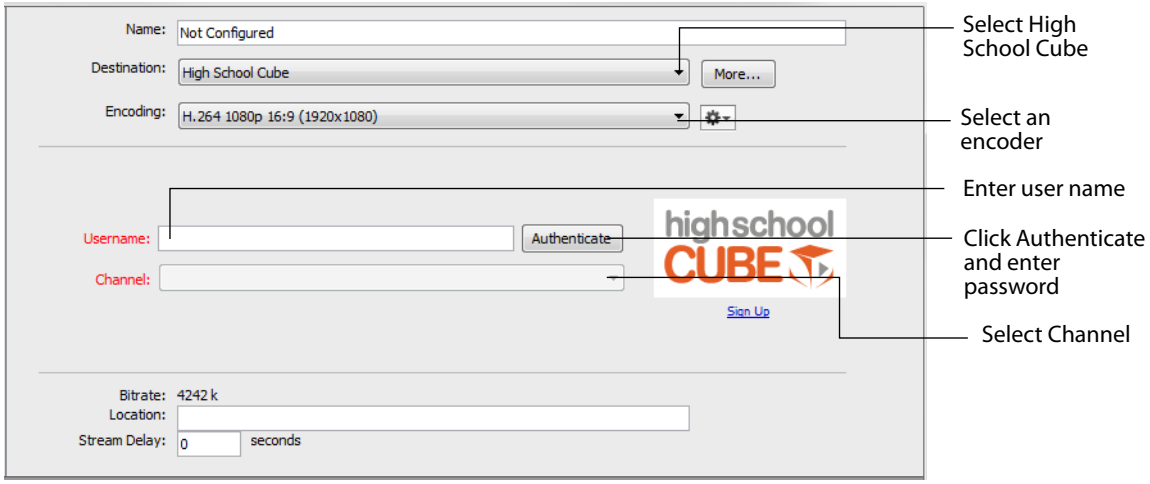
4. Select your High School Cube channel.
5. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory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



# Flash To iNK Barrel Video

To stream to iNK Barrel Video, follow these steps:

1. Select *iNK Barrel Video* from the Destination menu.
2. Select an encoder.
3. Enter your iNK Barrel Video 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.

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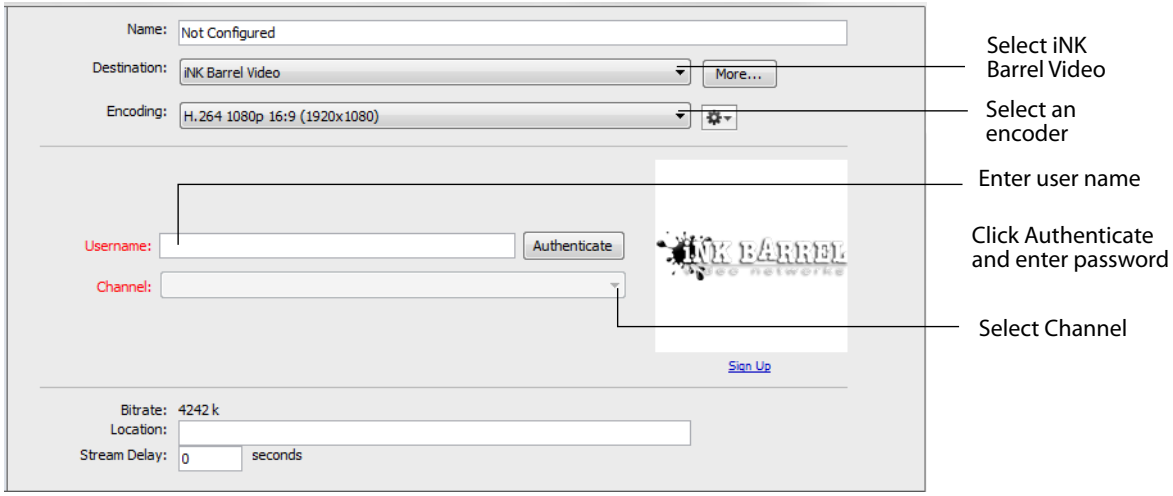
**Note:** If you do not have a username and password, you can sign up with Ink Barrel Video by clicking the iNK Barrel Video icon or by clicking *Sign Up*.

---

5. Select your iNK Barrel Video 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*.



# Flash To justin.tv

To stream to justin.tv, follow these steps:

1. Select *justin.tv* from the Destination menu.
2. Select an encoder.
3. Enter your username and click the *Generate RTMP* button to enter your password. Wirecast configures the RTMP Stream and address for you, enabling you to easily stream to justin.tv. Wirecast asks you for your justin.tv password. You only need to enter it once 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.
4. If you do not have a username and password, you can sign up with justin.tv by clicking the justin.tv icon or by clicking *Sign Up*.
5. 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.
6. Click *OK*.

# Flash To Limelight

To stream to Limelight, follow these steps:

1. Select *Limelight* from the Destination menu.
2. Select an encoder.
3. Enter the domain name or IP address of your server (this is provided by Limelight).
4. Enter the stream name of your broadcast (this is provided by Limelight).
5. Click *Set Credentials* to enter your authorized username and password

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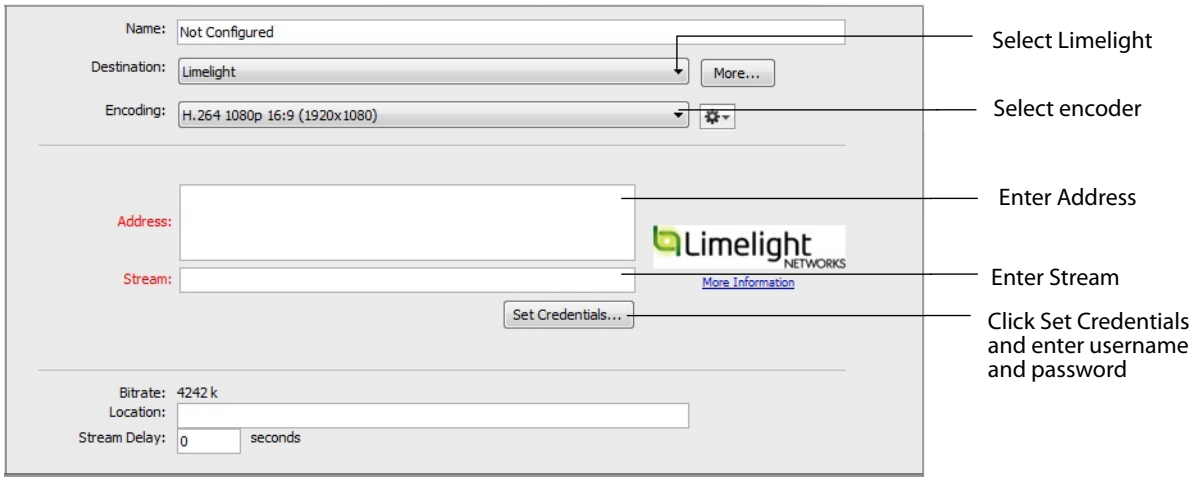
**Note:** If you do not have a username and password, you can sign up with Limelight logo, or by clicking *More Information*.

---

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 Livebeats

To stream to Livebeats, follow these steps:

1. Select *Livebeats* from the Destination menu.
2. Select an encoder.
3. Enter your Livebeats 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 Livebeats by clicking the Livebeats icon or by clicking *Sign Up*.

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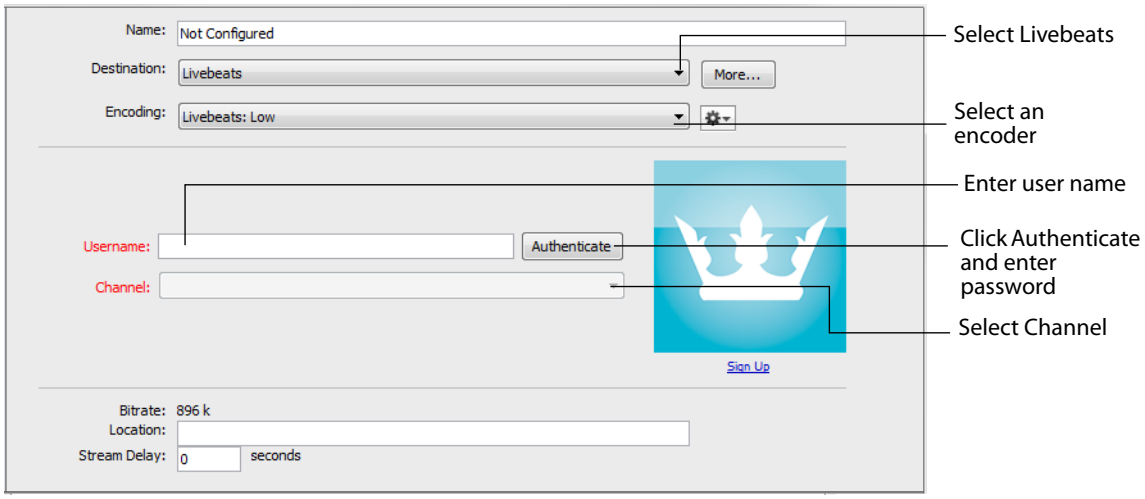
5. Select your Livebeats channel.
6. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. The amount of memory used is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



# Flash To make.tv

To stream to make.tv, follow these steps:

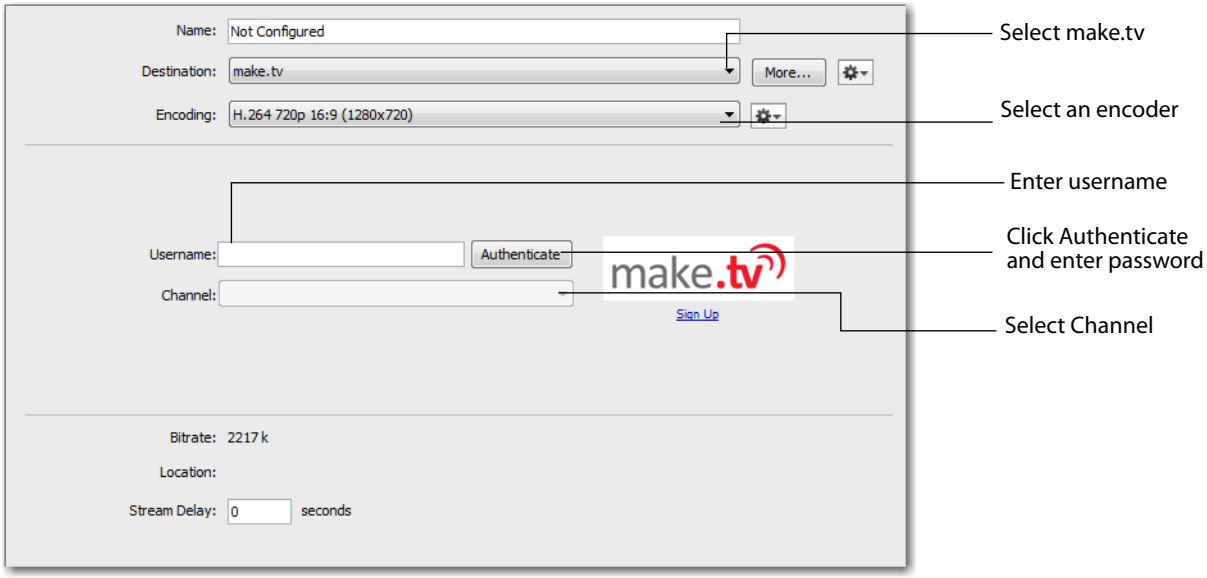
1. Select *make.tv* from the Destination menu.
2. Select an encoder.
3. Enter your make.tv username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future 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 make.tv by clicking the make.tv icon, or by clicking *Sign Up*.

---

5. Select your make.tv 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*.



# Flash To Meridix Sports Network

To stream to Meridix Sports Network, follow these steps:

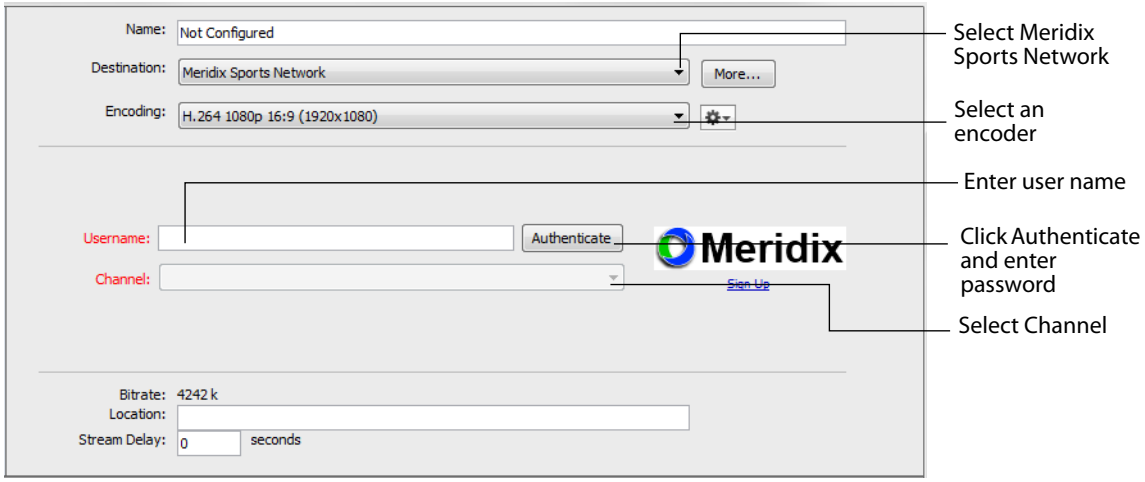
1. Select *Meridix Sports Network* from the Destination menu.
2. Select an encoder.
3. Enter your Meridix Sports Network username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores 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 Meridix Sports Network by clicking the Meridix icon or by clicking *Sign Up*.

---

5. Select your Meridix Sports Network 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*.



# Flash To Netbriefings

To stream to Netbriefings, follow these steps:

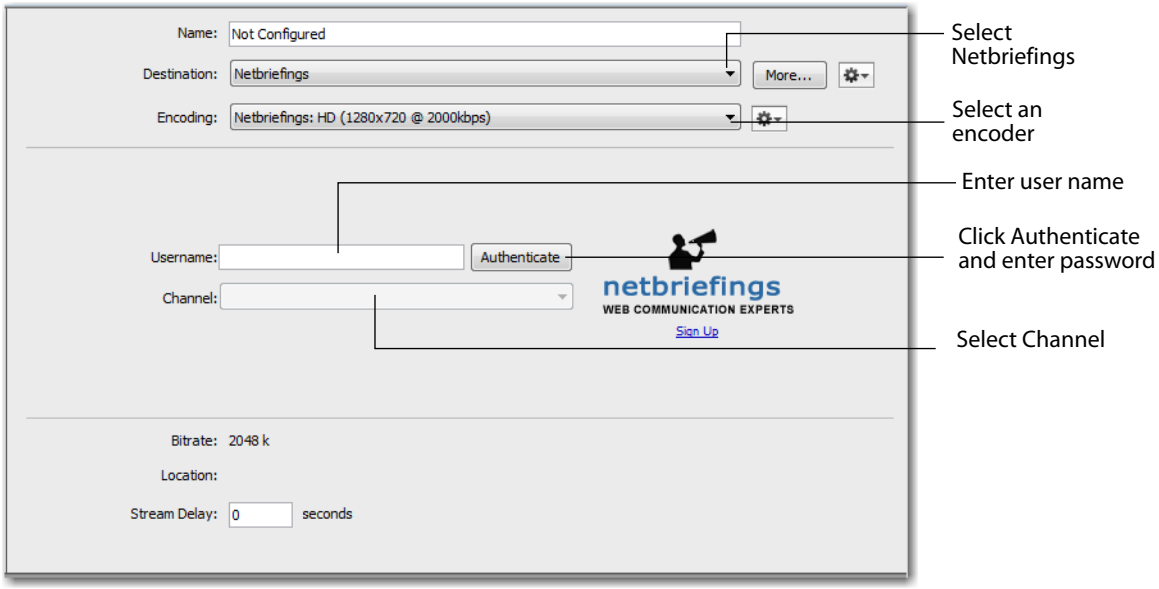
1. Select *Netbriefings* from the Destination menu.
2. Select an encoder.
3. Enter your Netbriefingsusername.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information 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 Netbriefings by clicking the Meridix icon or by clicking *Sign Up*.

---

5. Select your Netbriefings 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*.



# Flash To Sermon.net

To stream to Sermon.net, follow these steps:

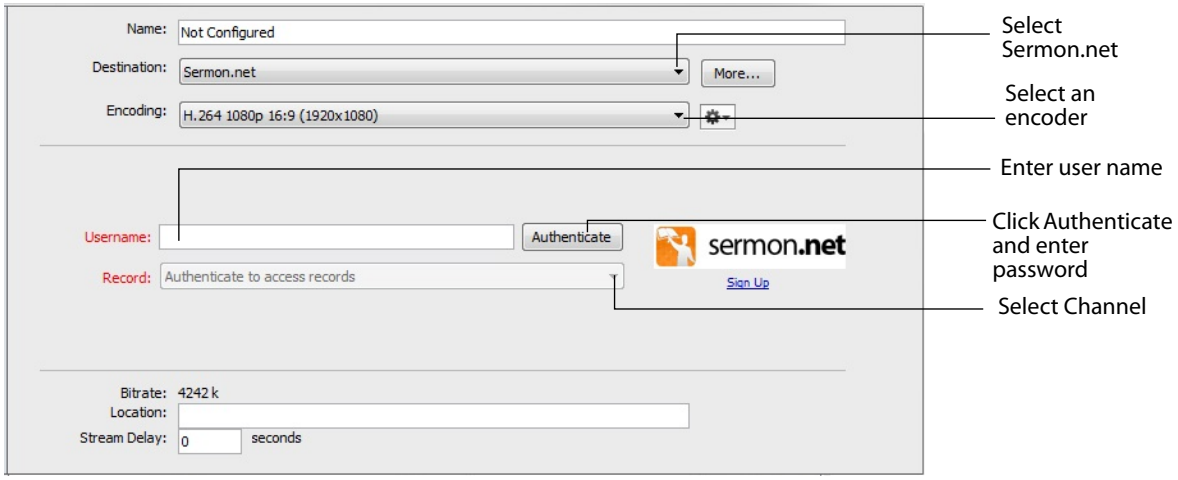
1. Select *Sermon.net* from the Destination menu.
2. Select an encoder.
3. Enter your Sermon.net username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information 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 Sermon.net by clicking the Sermon.net icon or by clicking *Sign Up*.

---

5. Select your Sermon.net 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*.



# Flash To ShowCaster

To stream to ShowCaster, follow these steps:

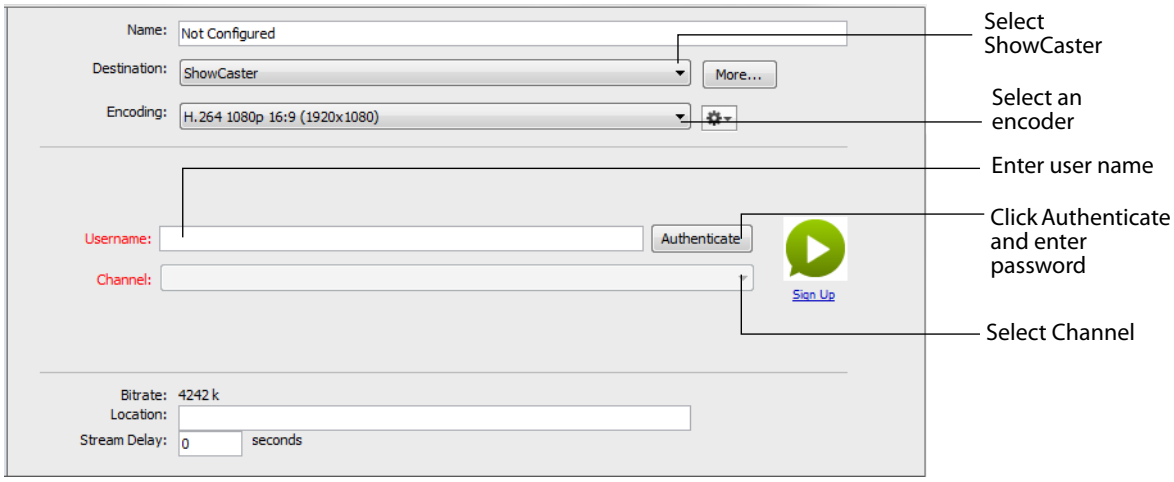
1. Select *ShowCaster* from the Destination menu.
2. Select an encoder.
3. Enter your ShowCaster username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information 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 ShowCaster by clicking the ShowCaster icon or by clicking *Sign Up*.

---

5. Select your ShowCaster 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*.



# Flash To Streaming Media Hosting

To stream to Streaming Media Hosting, follow these steps:

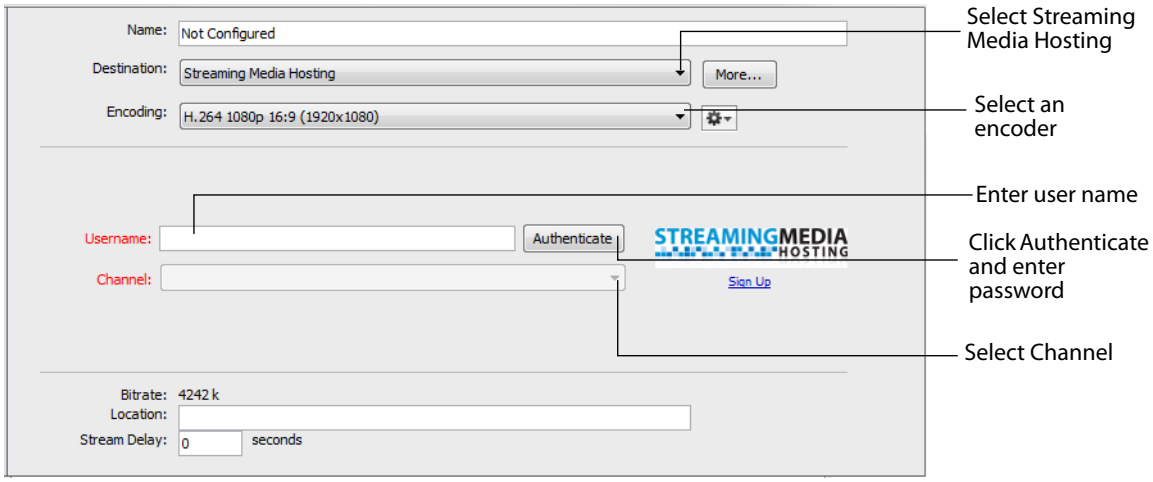
1. Select *Streaming Media Hosting* from the Destination menu.
2. Select an encoder.
3. Enter your Streaming Media Hosting username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores 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 Streaming Media Hosting by clicking the Streaming Media Hosting icon or by clicking *Sign Up*.

---

5. Select your Streaming Media Hosting 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*.



# Flash To StreamVu

To stream to StreamVu, follow these steps:

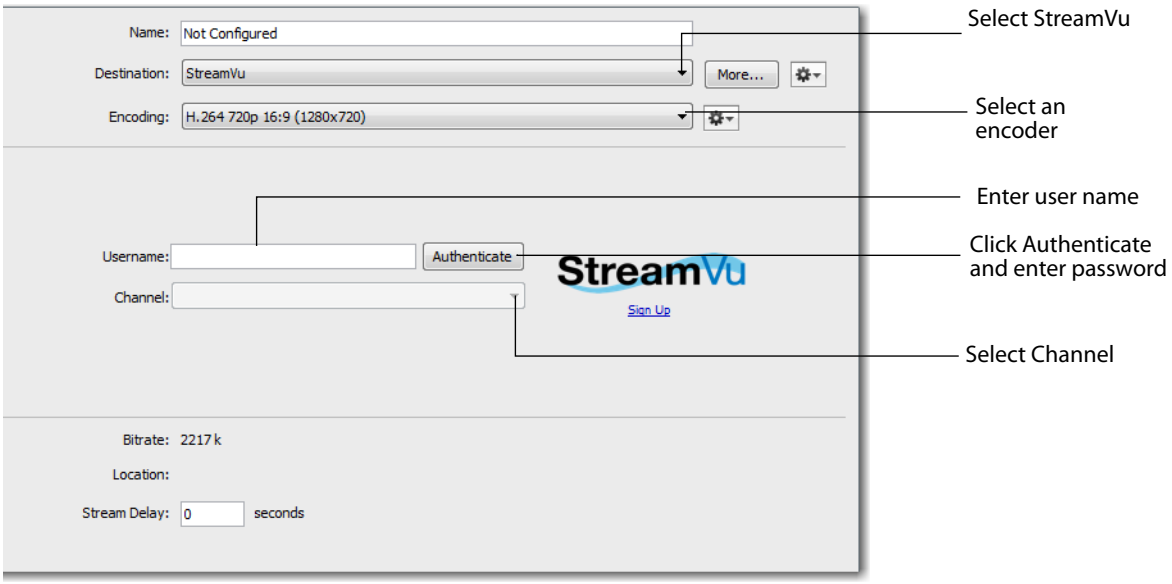
1. Select *StreamVu* from the Destination menu.
2. Select an encoder.
3. Enter your StreamVu username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for 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 StreamVu by clicking the StreamVu icon, or by clicking *Sign Up*.

---

5. Select your StreamVu 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*.



# Flash To Stretch Internet

To stream to Stretch Internet, follow these steps:

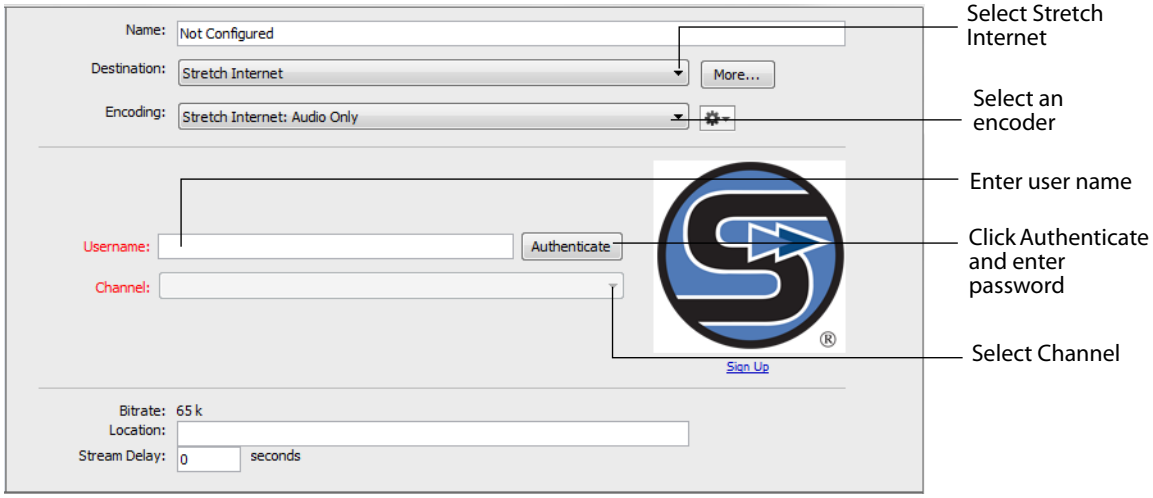
1. Select *Stretch Internet* from the Destination menu.
2. Select an encoder.
3. Enter your Stretch Internet username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel 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 Stretch Internet by clicking the Stretch Internet icon or by clicking *Sign Up*.

---

5. Select your Stretch Internet 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*.



# Flash To Sunday Streams

To stream to Sunday Streams, follow these steps:

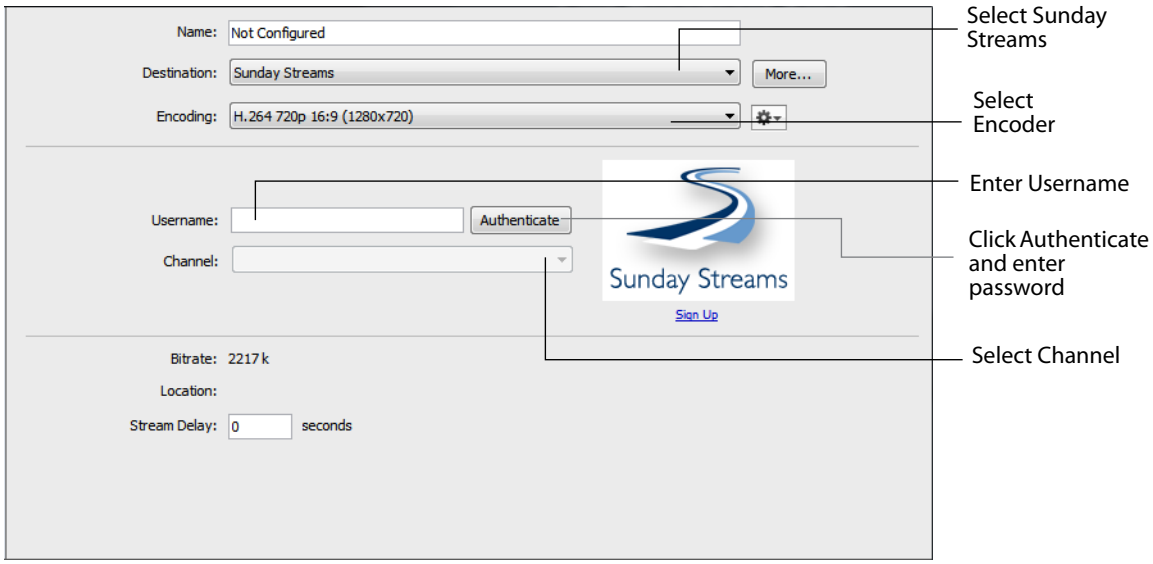
1. Select *Sunday Streams* from the Destination menu.
2. Select an encoder.
3. Enter your Sunday Streams username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information 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 Sunday Streams by clicking the Sunday Streams icon or by clicking *Sign Up*.

---

5. Select your Sunday Streams 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*.



# Flash To Tulix

To stream to Tulix, follow these steps:

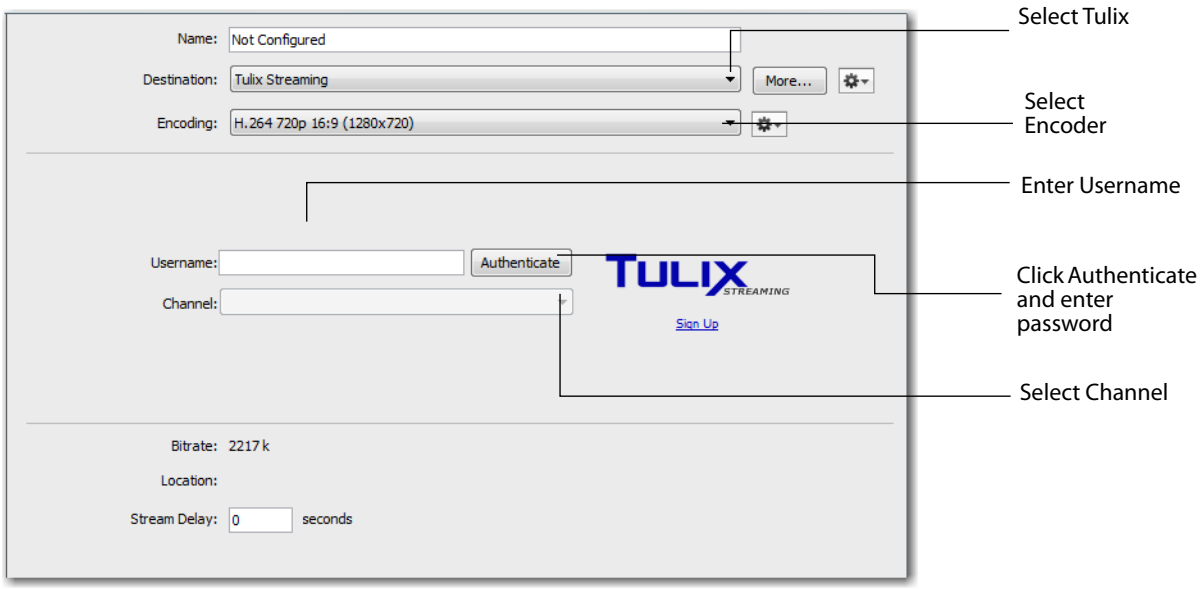
1. Select *Tulix* from the Destination menu.
2. Select an encoder.
3. Enter your Tulix username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future 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 Tulix by clicking the Tulix icon or by clicking *Sign Up*.

---

5. Select your Tulix 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*.



# Flash To TwitchTV

To stream to TwitchTV, follow these steps:

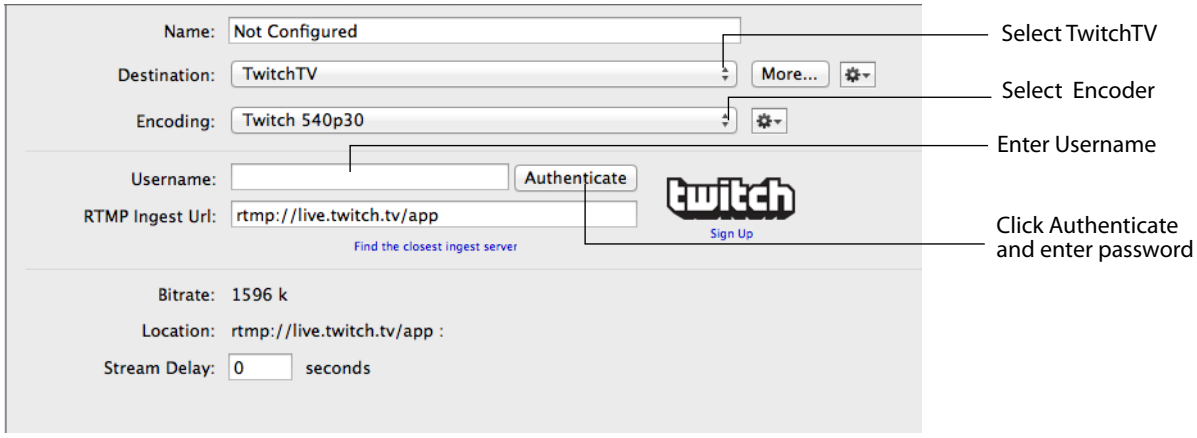
1. Select *TwitchTV* from the Destination menu.
2. Select an encoder.
3. Enter your TwitchTV username.
4. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for 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 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*.



# Flash To Ustream

To stream to Ustream, follow these steps:

1. Select *Ustream* from the Destination menu.
2. Select an encoder.
3. Select a Flash preset from the Encoder Preset menu.
4. Select Ustream from the Destination menu.
5. Enter your Ustream username.

---

**Note:** Ustream may not yet support OpenIDs via this API. The solution is to download the FMLE configuration file from Ustream and use the Flash Media Server interface.

---

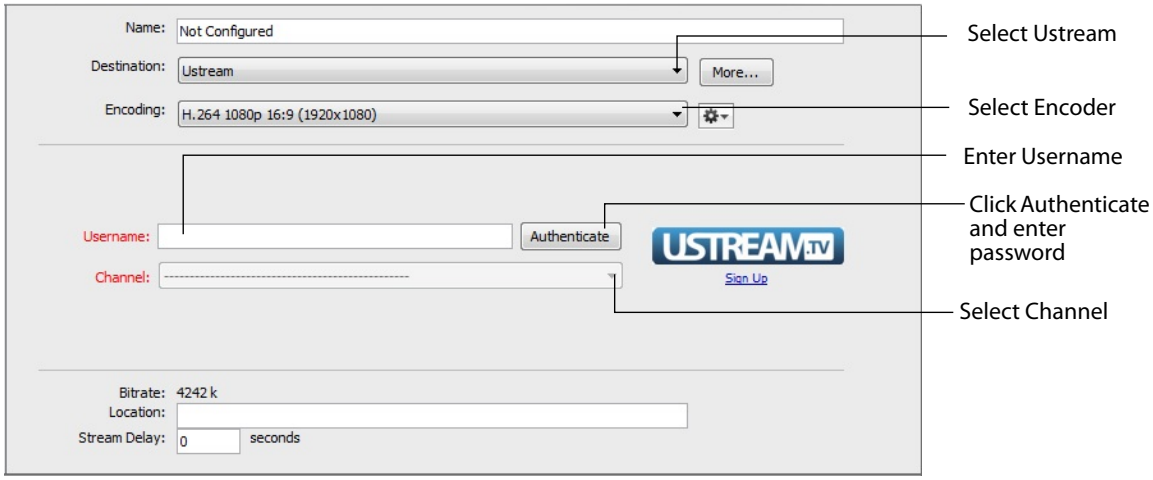
6. After you have entered your username, click *Authenticate* to enter your password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default RTMP port is 1935. You may need to configure your firewall to enable connections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

---

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

---

7. Select your Ustream channel.
8. 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.
9. Click *OK*.



# Flash To YouTube

To stream to YouTube, follow these steps:

1. Select *YouTube* from the Destination menu.
2. Select an encoder.

---

**Note:** YouTube may not yet support OpenIDs via this API. The solution is to download the FMLE configuration file from YouTube and use the Flash Media Server interface.

---

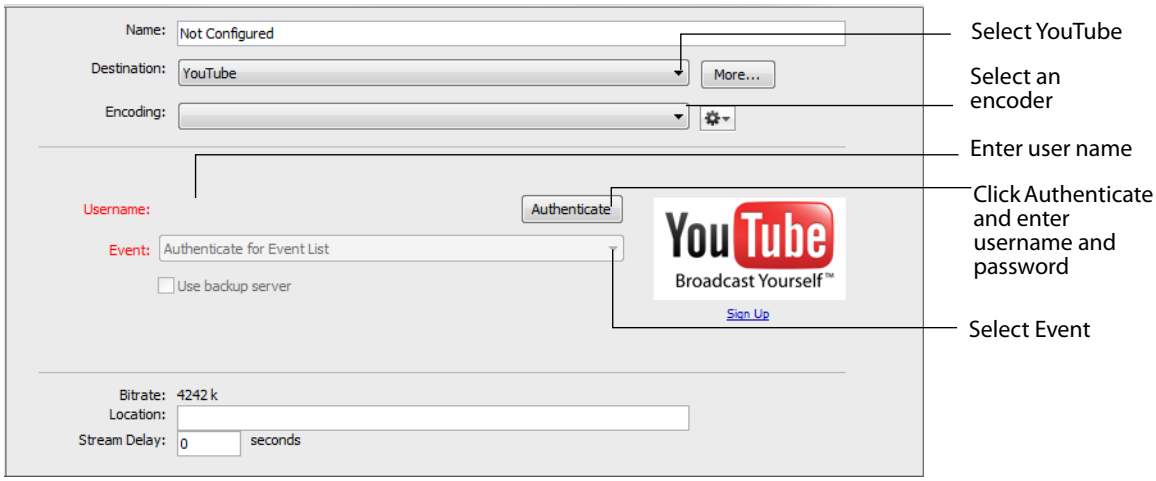
3. Click *Authenticate* to enter your username and password and generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default RTMP port is 1935. You may need to configure your firewall to enable connections on this port.

---

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

---

4. Select your YouTube event.
5. 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.
6. Click *OK*.



# Flash To Zixi

To stream to Zixi, follow these steps:

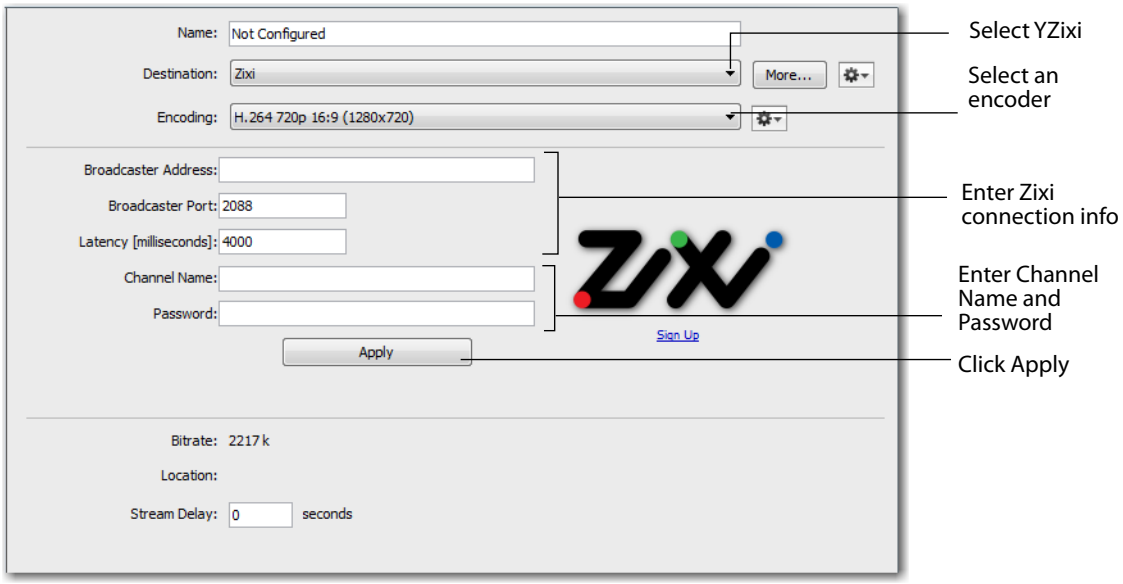
1. Select *Zixi* from the Destination menu.
2. Select an encoder.
3. Enter Zixi connection information.
4. Enter your Zixi channel name and password.
5. Click *apply* to generate the RTMP URL. You only need to do this one time because Wirecast stores the channel information for future streams. The default 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*.

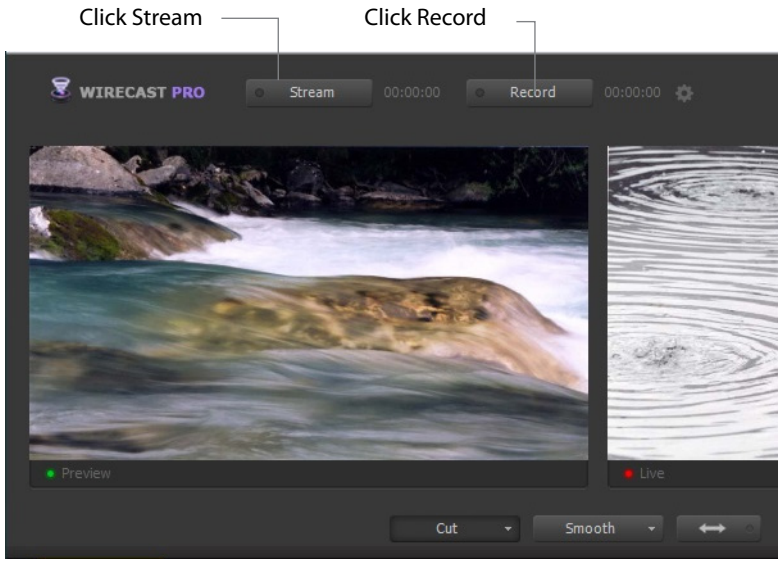
---

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*.

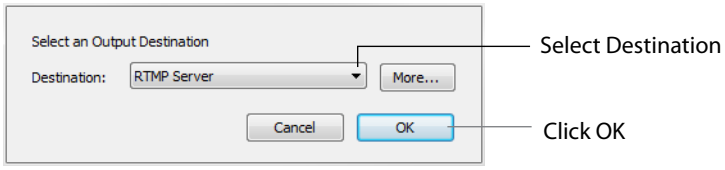


# Streaming

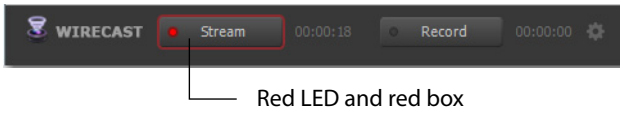
To stream your presentation, click the *Stream* button at the top of the Main window.



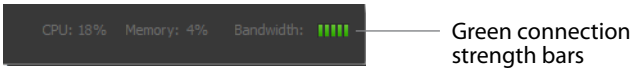

If you have not already selected a destination and logged into it, a dialog box displays. Select a destination, log in when asked to do so, then click OK.



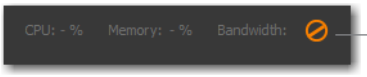

The Stream LED will blink until a connection is made. Once you are connected the LED turns full on and a red box is placed around the Stream button. If you cannout connect an error message will display.




Connection strength bars are disp0layed on the right. Fewer bars indicates a weaker (slower) connection.



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.




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

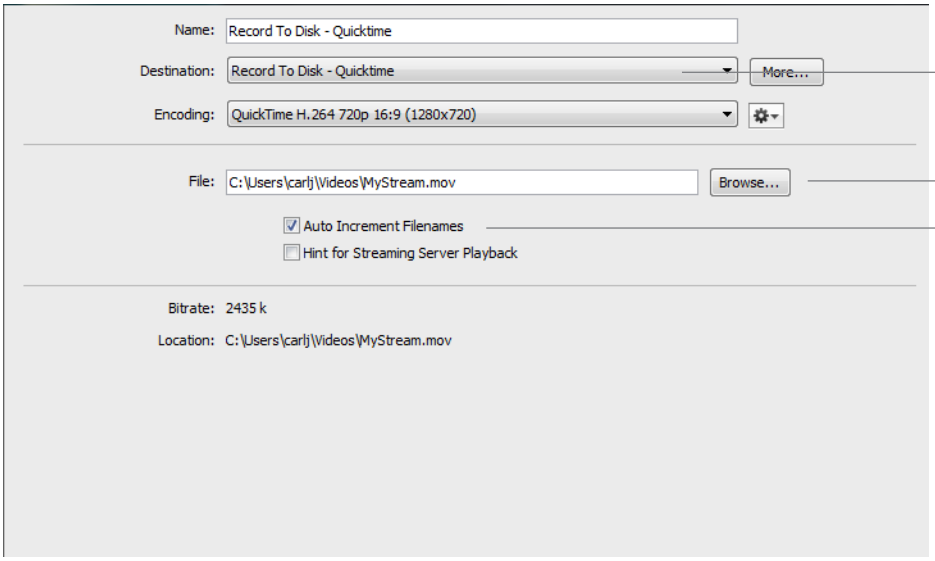
Click *Stream* again to stop streaming. You can also record your broadcast by clicking *Record*.

# Record To Disk

If you want to archive your stream, you can use the Record To Disk destination. To record to disk select one of the Record To Disk destinations. (MP4, Quicktime, or Windows Media).

To record to disk, follow these steps:

1. Select *Record To Disk* (for MP4, Quicktime, or Windows Media)
2. Select an encoder.
3. Click Browse or enter the path to where you want your recording located.
4. 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.
5. Click OK.



# Setting 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.

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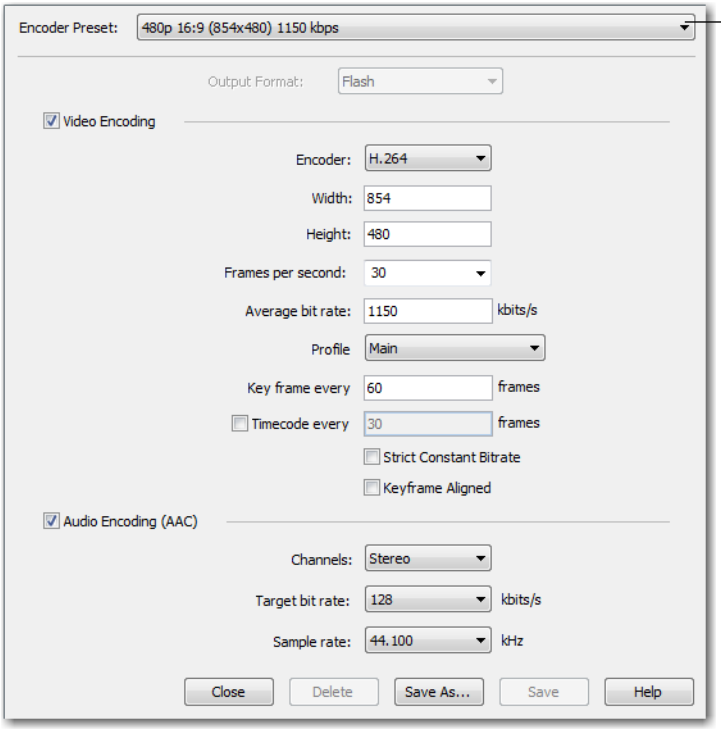
**Note:** Encoder Presets can also be edited from the Output Settings window. To do this select *Output* > *Output Settings*, click the gear icon, then choose *View Details* from the drop-down menu.

---

## Topics

# The Encoder Presets Window

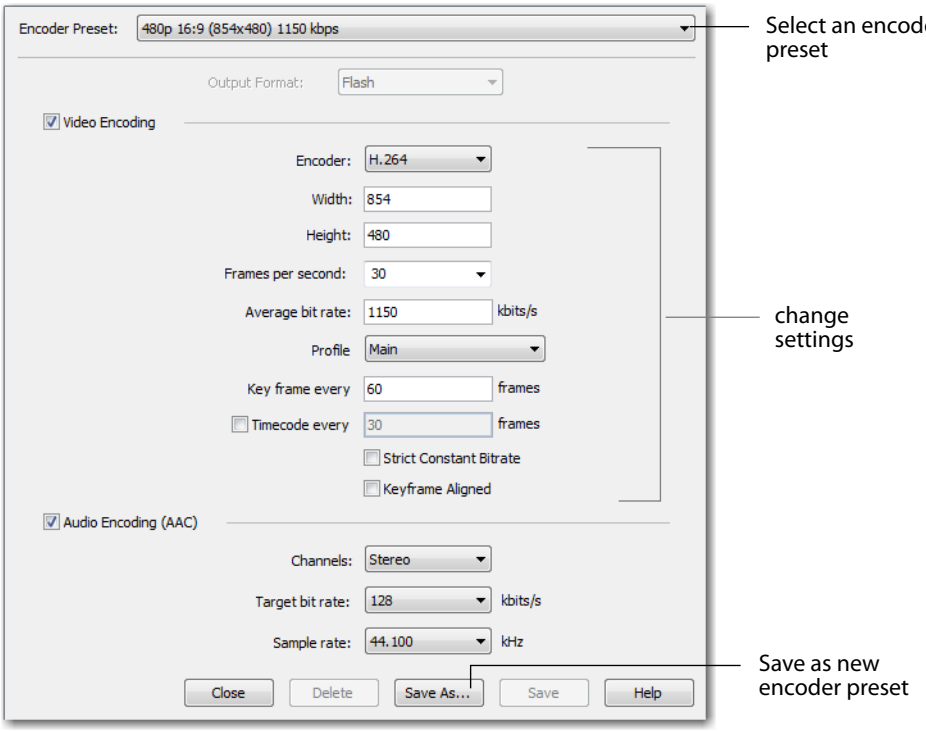
To open the Encoder Presets window, select Window > *Encoder Presets*. The Encoder Preset menu at the top of the window provides a list of encoder presets. Select a preset to edit from this list.




## Creating New Presets

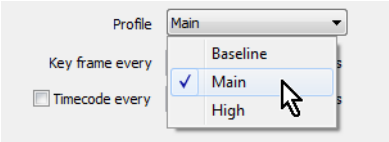
The default encoder presets cannot be changed. However, you can make a copy of any preset, modify it as needed, and save it under a new name. You can refer back to the default presets at any time since they are never modified.

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 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

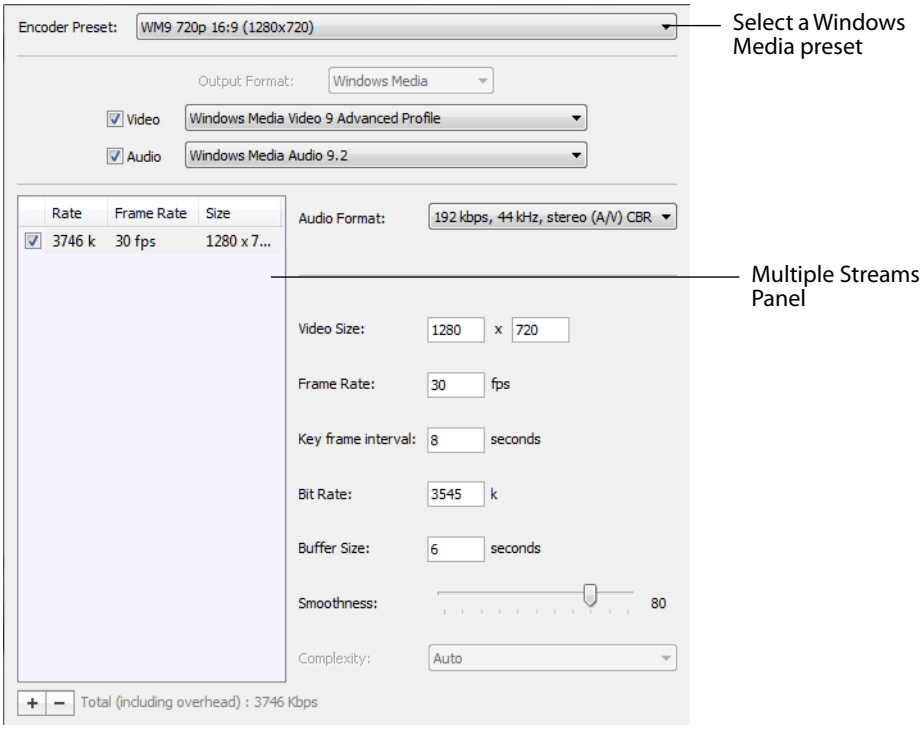
high-definition television broadcasts, since the importance of this profile faded when the High Profile was developed in 2004 for that application.

**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.

# Windows Media Streaming

To modify a Windows Media encoder preset, follow these steps:

1. Open the Encoder Presets window
2. Select a Windows Media preset from the Encoder Presets menu.




3. Check the Video checkbox and select the Windows Media codec version to use.
4. Check the Audio checkbox and select the Windows Media codec version to use.
5. Use the Multiple Streams Panel (left side of window) to set up multiple simultaneous streams in a single encoder. This allows the media player receiving the stream to adjust it's quality depending on the connection speed and reliability. The plus and minus buttons at the bottom enable you add or remove additional streams to your preset.
6. Select the Audio Format. This is a pre-configured audio encoder setting.
7. Enter the Video Size. This sets the width and height of your resulting broadcast. Every stream should have the same aspect ratio. For example, if 640x480 is used, it

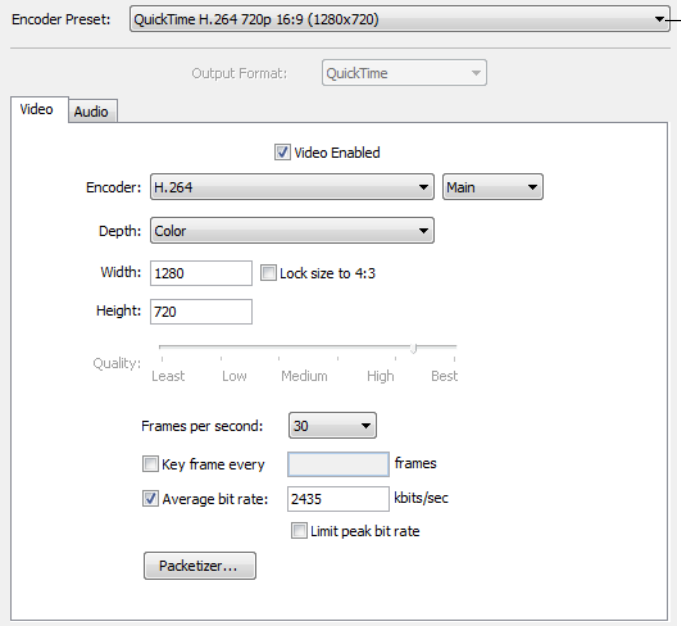
has an aspect ratio of 4:3. Therefore, all other streams should also have a 4:3 aspect ratio.

8. Enter the broadcast frame rate in frames per second (FPS). This is a target rate and is only a goal for the encoder. It is not a guaranteed value.
9. Enter the Key Frame Interval in seconds. This controls how often the encoder makes a new keyframe. The more keyframes your broadcast has, the more bandwidth it takes (since less compression can occur). However, more keyframes means motion in your video stream is better supported.
10. Enter the bit rate in Kbits (1000 bits) per second. This is a target setting for the encoder, not a guaranteed value. Higher numbers provide better quality - lower numbers, lower quality. The connection speed of your audience is a significant factor in determining your target bit rate.
11. Set the smoothness using the slider. Video smoothness determines the trade-off between sharp images and smooth motion. Video appears smooth when objects move across the screen with non-jagged object edges. If you are dropping frames during encoding, consider decreasing video smoothness.
12. Select Complexity. Some video codecs support multiple complexity levels. Complexity level does not directly affect the bit rate of a stream, but it can affect its quality. Complexity level is a measure of the processing power needed to reconstruct the compressed data.
13. Enter the buffer size. The bit rate and quality depends on the buffer size. A larger buffer size enables more bits to be allocated for complex video. For example, if you set the buffer size to 10 seconds, the codec may choose to allocate some bytes to the first 8 seconds and the rest during the last 2 seconds. Increasing the buffer typically improves overall quality. For lower bit rates, it is recommended to increase the buffer size. For higher bit rates, increasing the buffer size has less effect.

# QuickTime Video

To modify a QuickTime video preset, follow these steps:

1. Open the Encoder Presets window.
2. Select a QuickTime preset from the Encoder Presets menu.




**Note:** To use a newly created preset (See *Creating New Presets*).

**Note:** Select QuickTime from the Output Format menu.

3. Select the Video tab.
4. Check the Video Enabled 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.
5. Select the encoder from the Encoder menu. The encoder is sometimes called a Codec or Compressor.
6. Click Options to view and/or set the encoder options. Many, but not all encoders provide optional settings.

**Note:** If the Options button is greyed-out, no options are available.

7. Select color depth from the Depth menu. Some Encoders allow you to modify the color depth (or bits per pixel) of the broadcast. Picking a higher color depth results in better color quality, but also a larger output. In other words, the higher the bit depth, the more accurate the color will be, but the file/stream will be larger.

8. Enter the width of your broadcast video.
9. Enter the height of your broadcast video.
10. Select the quality of your broadcast by adjusting the slider between least and best. Generally, encoders make a trade-off between higher quality (greater bandwidth) and speed (CPU usage).

---

**Note:** If the Quality scale is greyed-out, quality is a fixed value.

---

11. Select the desired frames per second (FPS) of your broadcast. This is a target value for the encoder and is not guaranteed.
12. Check Key Frame Every checkbox (optionally) and 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.
13. Check Average Bit Rate checkbox (optionally) and enter the average bit rate as a target setting.
14. Check Limit Peak Bit Rate checkbox to request the encoder to limit the output to a specific rate.

---

**Note:** Some encoders use this as a target value, not as an absolute value.

---

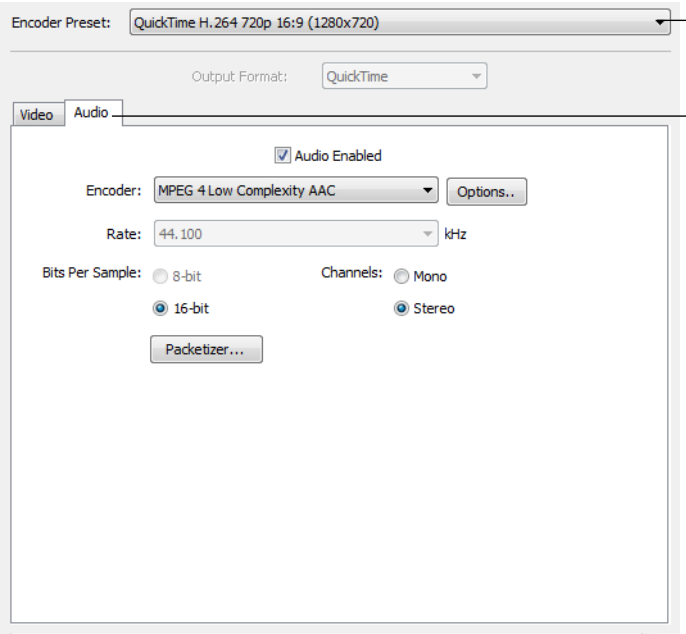
15. Click the Packetizer button to modify how the QTSS packets are created. This is an advanced feature for knowledgable users.
16. Click Save to save your settings.

# QuickTime Audio

To modify a QuickTime audio preset, follow these steps:

1. Open the Encoder Presets window.
2. Select a QuickTime preset from the Encoder Presets menu.

**3.** Select the Audio tab.




**Note:** To use a newly created preset (See *Creating New Presets*).

**4.** Check (optionally) the Audio Enabled checkbox. When checked, the audio for your broadcast is included. When unchecked, audio is absent from your broadcast. This is the preferred method of producing video-only broadcasts because the presence of silent audio uses bandwidth.

**5.** Select the encoder to use.

**6.** Click Options to view and/or set the encoder options. Many, but not all encoders have options that are specific to the encoder.

**Note:** If the Options button is greyed-out, no options are available.

**7.** Select the audio bit rate from the Rate menu. The higher the value you choose, the better the quality, but more bandwidth is required.

**8.** Select Bits Per Sample. This is how much data each sample of audio uses. The higher the value, the better the quality, but more bandwidth is required.

**9.** Select the number of channels: Mono or Stereo. Mono uses less bandwidth than stereo, but stereo is more pleasing to the listener.

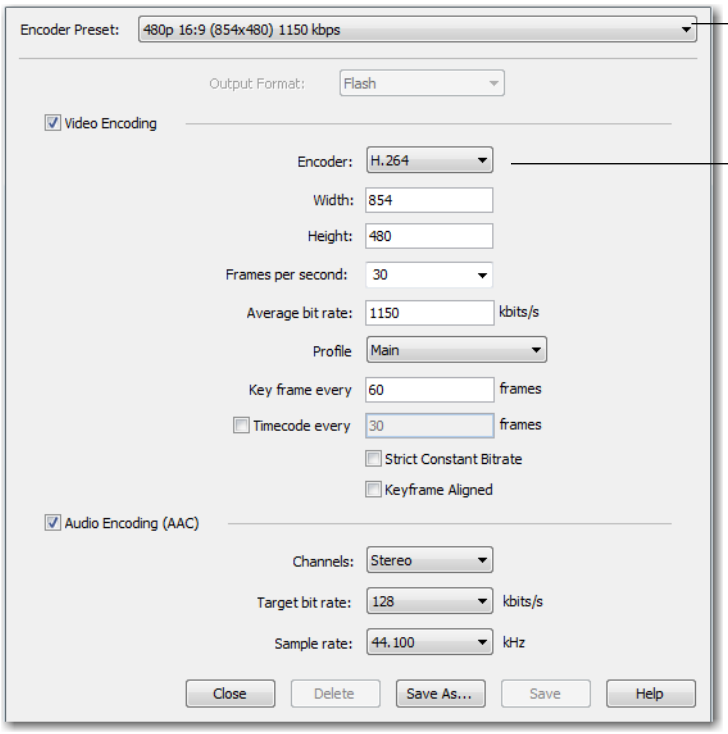
**10.** Click Save to save your settings.

# Flash H.264

STUDIO

To modify a Flash H.264 preset, follow these steps:

1. Open the Encoder Presets window.
2. Select a Flash encoder preset from the Encoder Presets 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. Select the H.264 encoder from the Encoder menu.
5. Enter the width of your broadcast video.
6. Enter the height of your broadcast video.
7. 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.
8. 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.

9. 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.
10. 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.
11. 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.
12. 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.
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 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.

15. Select the number of channels: Mono or Stereo. Mono uses less bandwidth than stereo, but stereo is more pleasing to the listener.
16. 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.
17. 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.
18. Click Save to save your settings.

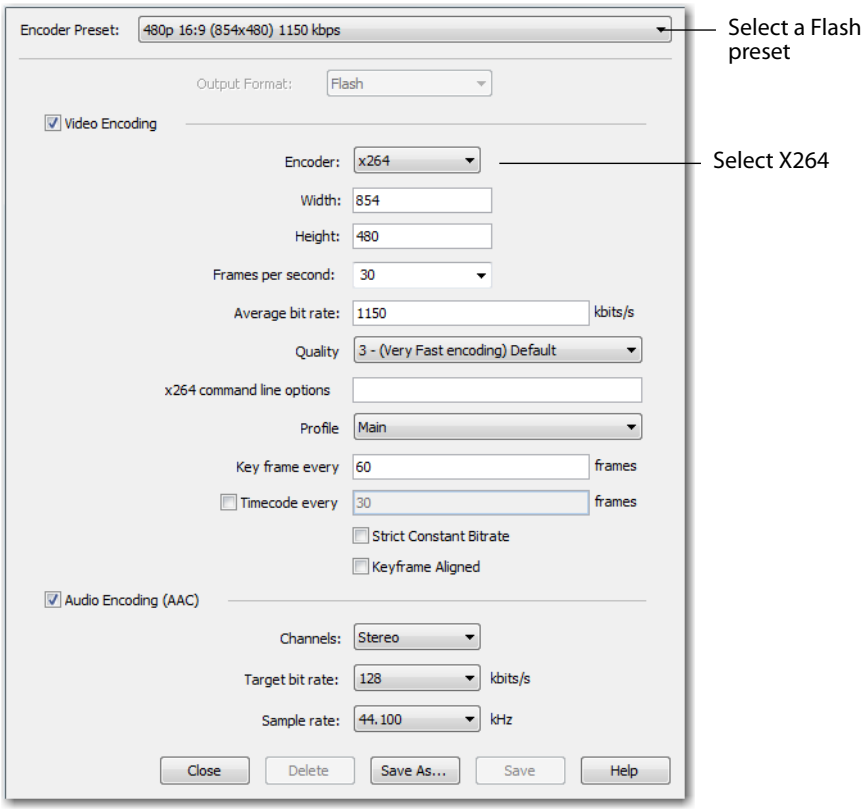
# Flash x264

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 a Flash x264 preset, follow these steps:

1. Open the Encoder Presets window.
2. Select a Flash encoder preset from the Encoder Presets 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. Select *x264* for Encoder.
5. Enter the width of your broadcast video.
6. Enter the height of your broadcast video.

7. 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.
8. 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 lower than the target rate.
9. Select encoding quality (*Ultra fast* to *Very slow* encoding). Slower encoding results in better quality.
10. In the *x264 command line options* edit box, enter any command line options you want included. A list of the command line options can be found at: http://en.wikibooks.org/wiki/MeGUI/x264_Settings.
11. 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.
12. 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.
13. 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.
14. 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.

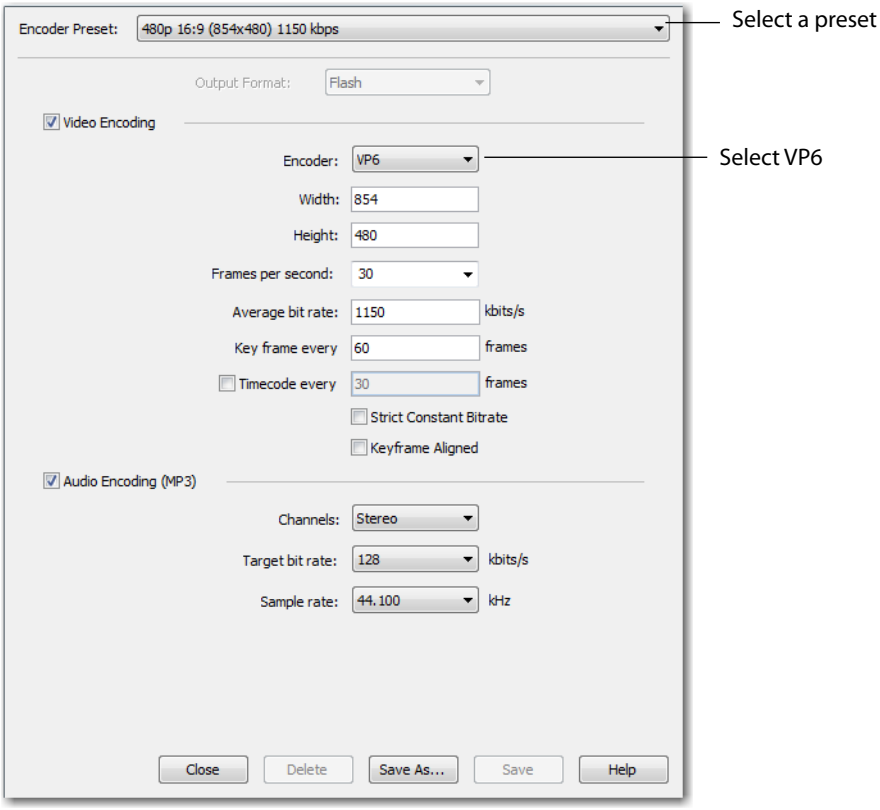
15. Check (optionally) the Timecode Every checkbox and enter the number of frames between timecodes. Wirecast can generate timecodes embedded in the flash stream. If a frames value of zero is entered, the timecode is never sent. Wirecast sends metadata along with the frames. This data looks like an ONFi call. Various timecodes and timestamps are also sent with the stream.
16. 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.
17. Select the number of channels: Mono or Stereo. Mono uses less bandwidth than stereo, but stereo is more pleasing to the listener.
18. 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.
19. 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.
20. Click Save to save your settings.

# Flash VP6

STUDIO

To modify a Flash VP6 preset, follow these steps:

1. Open the Encoder Presets window.
2. Select a preset from the Encoder Presets 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. Select the VP6 encoder from the Encoder menu.
5. Enter the width of your broadcast video.
6. Enter the height of your broadcast video.
7. Select the desired frames per second (FPS) of your broadcast. This is a target value for the encoder and is not guaranteed.
8. 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 lower than the target rate.

9. Key Frame (optionally) aloows 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 a timecodes embedded in the flash stream. If a frames value of zero is entered, the timecode is never sent. Wirecast sends meta data 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 (MP3) 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.

# Using the Asset Manager

## Introduction

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

### Topics



## 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.

## Re-assigning Media

To reassign media, follow these steps:

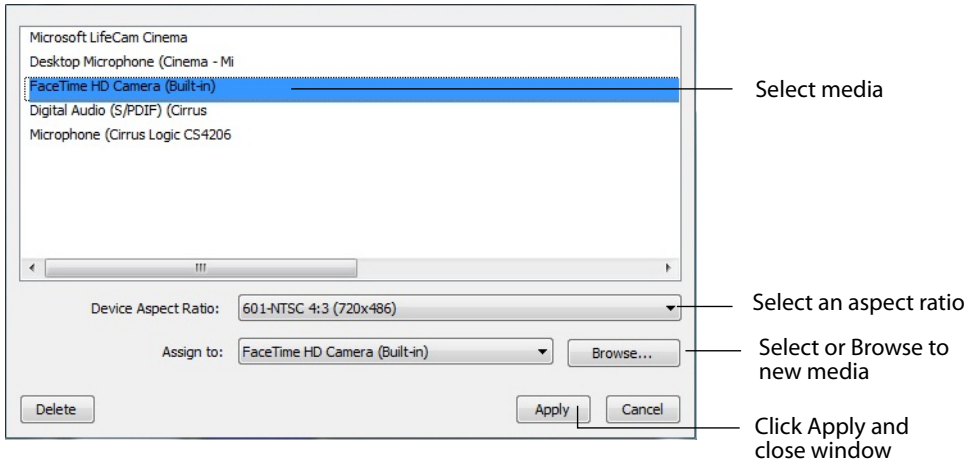
1. To open the Asset Manager, select *Show Asset Manager* from the Wirecast Media menu.
2. Select the media you want to assign to another source.
3. Some media assets (i.e cameras) enable you to set the aspect ratio by displaying a Device Aspect Ratio menu. You can select an aspect ratio from this menu.
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.



# User Interface

## Introduction

These topics describe the menus, menu items, and keyboard short-cuts in Wirecast.

## Topics



## 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.

**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.

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

**Exit** Closes all documents and then exits. If the broadcast is playing, you are asked to stop the broadcast. If a document has not been saved, you are asked to save the document before exiting.

# Edit Menu

**Undo** Reverses your last change in Wirecast. Undo is only available in some windows (such as the Shot Editor). 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 Shot Editor). Wirecast offers an unlimited number of redo actions (within computer 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 *Using the 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.

**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.

# 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.

**Play to Next Point** Play all media to the next marker (point) that is embedded in the media.

**Jump to Previous Point** Forces all media to jump back to the previous marker (point), and then pause.

**Show Asset Manager** Displays devices that can be configured. Some devices (cameras, etc.) may be configurable. For example, you can configure a USB camera to manually change its focus, contrast, brightness, etc. Other devices have multiple inputs you can choose (AlchemyTV Card, etc.). (See *Using the 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.

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# Sources Menu

PRO

**New IP Camera** Opens the Source Settings window with IP Camera selected as a source. Enter the IP address and frame settings to test the camera, then click Apply to create the new source.

PRO

**New Teradek Cube** Opens the Source Settings window with a new Teradek Cube selected as a source. Configure the settings and click Apply to create the new source.

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 Pipeline** Opens the Source Settings window with a new (untitled) Pipeline selected as a source. Enter the IP address, select a video format, set the deinterlace video option, and click Apply to create the new source.

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, or any selected portion of the display (Game Mode).

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

**Show USB Devices** Opens a list of all USB devices.

# Output Menu

**Canvas Size** Sets the canvas size aspect ratio used when broadcasting a Wirecast document.

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**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.

---

**Output Settings** Opens the Output Settings window.

**Start/Stop Broadcasting** Starts (or stops) broadcasting to the network.

**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.

STUDIO

**External Display Output** Selects an external display for the output of Wirecast. For example, if you have a projector connected to your computer using S-Video, select it from this menu to display the output of Wirecast to the projector.

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.

# 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.

**Go to Layer** Displays the selected layer. You can also press Ctrl + 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.

# Window Menu

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

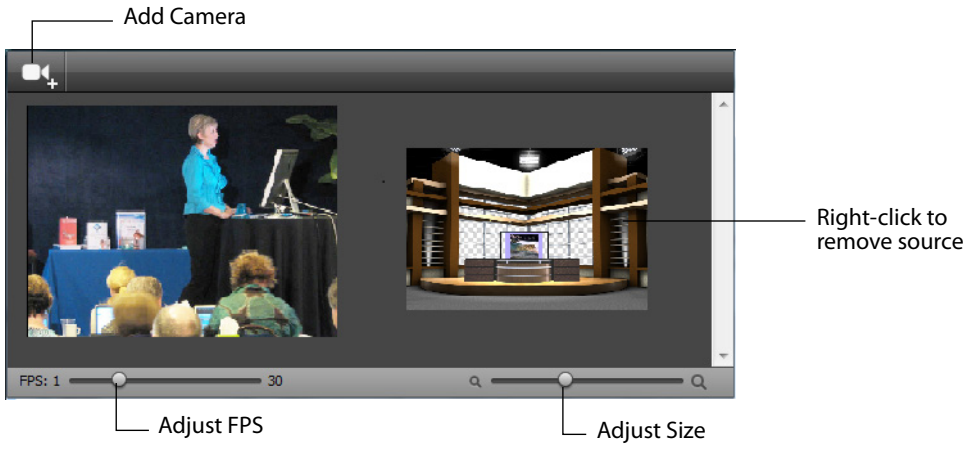
**Audio Inspector** Opens the Audio Inspector window.

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*.




**Document Windows** All open document windows are listed at the bottom of this menu.

# Help Menu

**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 *Licenses* in the Preferences window. This window allows you to purchase licenses and to activate or deactivate them.

**Report a Bug** Opens the Telesteam Website bug reporting page where you can report any bugs you have encountered. Please give us as much detailed information as possible about your computer, what you were doing, and any supporting material regarding the problem.

**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.

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

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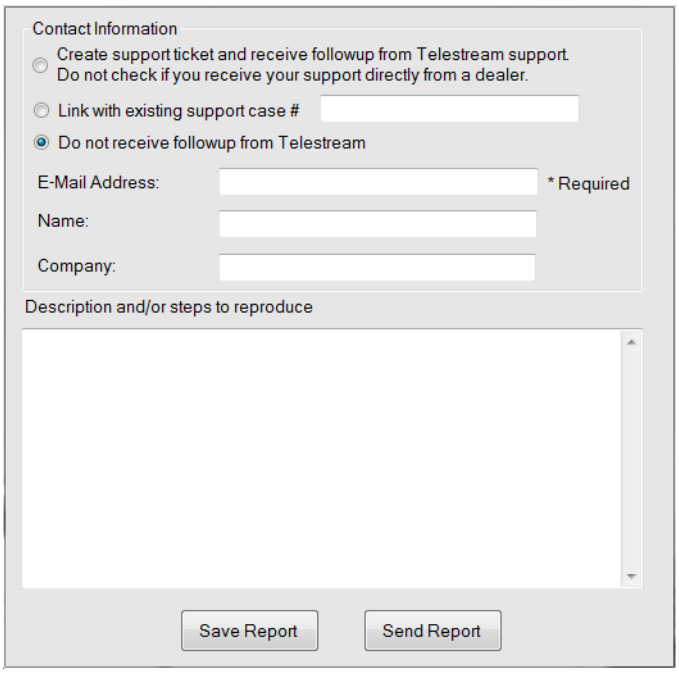



**Visit Telesteam Web Site** Opens the Telesteam Website home page.

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

**Acknowledgments** Opens an on-line help to acknowledgments.

**About Wirecast** Displays version and copyright information about Wirecast

# Keyboard Short-cuts

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

**Table 1.** File Menu Keyboard Short-cuts

| File Menu | Keyboard Short-cut |
|---|---|
| New | Ctrl+N |
| Open | Ctrl+O |
| Open Recent | |
| Import Media | Ctrl+Shft+I |
| Save | Ctrl+S |
| Save As | Ctrl+Shft+S |
| Close Window | Ctrl |
| Preferences | Ctrl+comma |
| Exit | Ctrl+Q |

**Table 2.** Edit Menu Keyboard Short-cuts

| Edit Menu | Keyboard Short-cut |
|---|---|
| Undo | Ctrl+Z |
| Redo | Ctrl+Shft+Z |
| Edit Shot | Ctrl+E |
| Rename Shot | Ctrl+R |
| Duplicate Shot | Ctrl+D |
| Add Shot | |
| Delete Shot | Ctrl+Backspace |
| Move To Layer | |

**Table 3.** Switch Menu Keyboard Short-cuts

| Switch Menu | Keyboard Short-cut |
|---|---|
| Go | Ctrl+G |
| Cut | Ctrl+1 |
| Smooth | Ctrl+2 |
| Transition Speed | |
| AutoLive | Ctrl+L |
| Live/Preview Swap | |

**Table 4.** Media Menu Keyboard Short-cuts

| Media Menu | Keyboard Short-cut |
|---|---|
| Start Playing All Movies | Ctrl+P |
| Pause All Movies | Ctrl+Shft+P |
| Play to Next Point | Ctrl+RightArrow |
| Jump to Previous Point | Ctrl+LeftArrow |
| Show Asset Manager | |

**Table 5.** Sources Menu Keyboard Short-cuts

| Sources Menu | Keyboard Short-cut |
|---|---|
| New IP Camera | |
| New Teradek Cube | |
| New Scoreboard | |
| New Remote Desktop Presenter | |
| New Pipeline | |
| New Web Stream | |

**Table 5.** Sources Menu Keyboard Short-cuts

| Sources Menu | Keyboard Short-cut |
|---|---|
| New Local Desktop Presenter | |
| Show Source Settings | |
| Show USB Devices | |

**Table 6.** Output Menu Keyboard Short-cuts

| Output Menu | Keyboard Short-cut |
|---|---|
| Canvas Size | |
| Output Settings | Ctrl+Y |
| Start/Stop Broadcasting > Start All | Ctrl+B |
| Start/Stop Recording > Start All | Ctrl+K |
| External Display Output | |
| Virtual Camera Out | |

**Table 7.** Layout Menu Keyboard Short-cuts

| Layout Menu | Keyboard Short-cut |
|---|---|
| Preview | |
| Master Audio | |
| Main Shot List | |

**Table 8.** Window Menu Keyboard Short-cuts

| Window Menu | Keyboard Short-cut |
|---|---|
| Inspector | Ctrl+I |
| Encoder Presets | Ctrl+Shft+E |
| Audio Inspector | |

**Table 8.** Window Menu Keyboard Short-cuts

| Window Menu | Keyboard Short-cut |
|---|---|
| New Layer Window > Master Layer 1 | Ctrl+T |
| Camera Preview | |
| Document Windows | |

**Table 9.** Help Menu Keyboard Short-cuts

| Help Menu | Keyboard Short-cut |
|---|---|
| Wirecast Help | Ctrl+? |
| Open PDF User Guide | |
| Open Tutorial HTML | |
| Create Document for Tutorial | |
| Buy/Upgrade | |
| Report a Bug | |
| Provide Feedback | |
| Send Support Information | |
| Visit Web Site | |
| Visit Desktop Presenter Download Page | |
| Acknowledgments | |
| About Wirecast | |

# Using Preferences

## Introduction

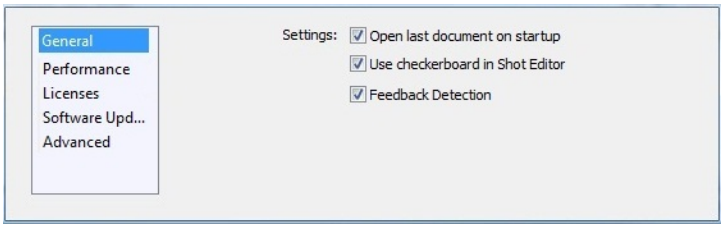
Wirecast is designed so that you can configure most of your options directly in your Wirecast document or the Shot Editor. The Preferences window enables you to set up Wirecast, set Desktop Presenter options, manage your licenses, update your software, and set advanced video options.

### Topics



## Accessing Preferences

To open the Preferences window, select Preferences from the File menu (or press the Ctrl+ 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:

- **Windows 7 and Vista**
  *C:\Users\USERNAME\AppData\Roaming\net.telestream.wirecast.xml*
- **Windows XP**
  *C:\Documents and Settings\USERNAME\Application Data\net.telestream.wirecast.xml*

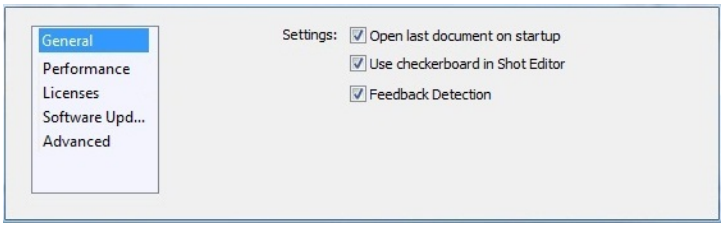
---

**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

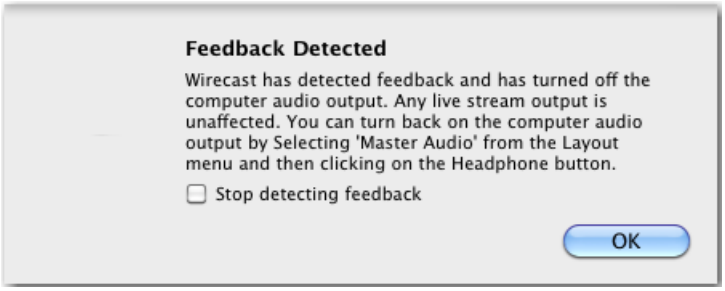
When checked, the last document you used is opened when Wirecast starts up.

## 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

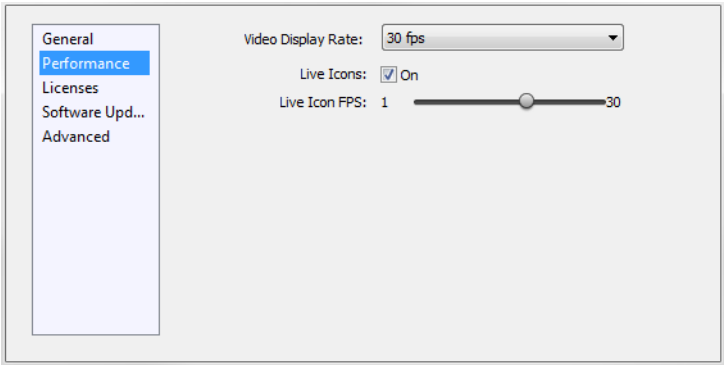
When checked, the computer audio is disabled (live feed is unaffected) whenever feedback is detected. Checked is the default. When feedback is detected, the following warning is displayed with an option to turn off feedback detection:




# Performance

Performance preferences enable you to select the display rate used for all internal video rendering. You can select either 25/PAL or 30 fps. If using PAL sources, choosing 25 may eliminate dropped or duplicate frames.

You can turn on the Live Icons feature, which makes all icons in the Shot Area display any live activity in the device it represent (cameras, streaming, etc.). You can also set the FPS of the Live Icon display using the slide bar control.



# Licenses

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


## Serial Numbers

The table in the Licenses 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.

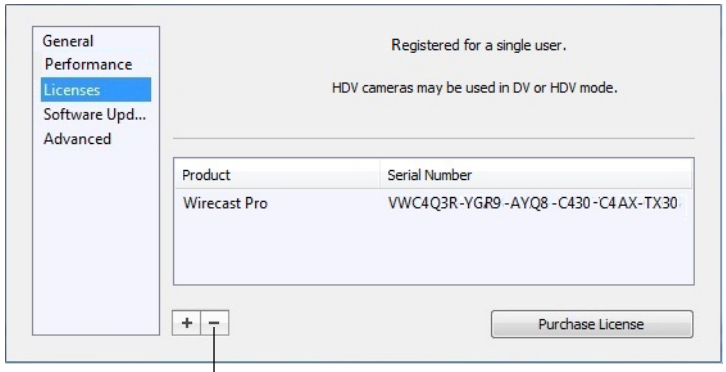
---

## 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.

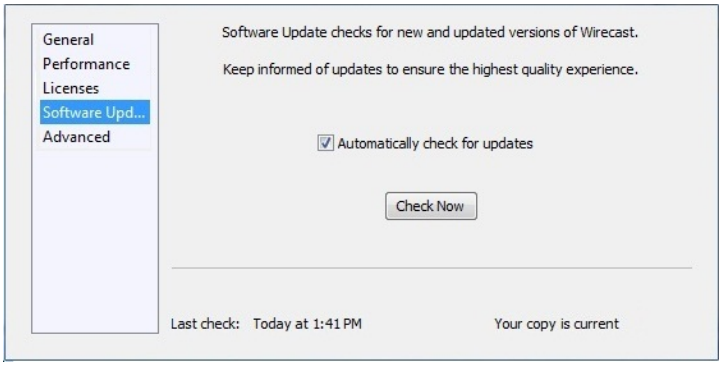



## Demonstration Mode

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

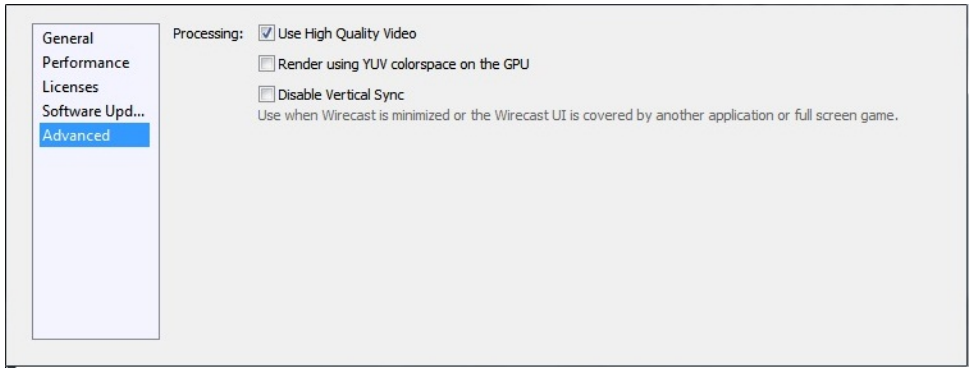
Check the Automatically Check For Updates checkbox to cause Wirecast to check for updates on the Telesteam Web site each time Wirecast is launched. No personal information is transferred to Telesteam during this action.

## Check Now

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

# Advanced

Advanced preferences enable you adjust advanced settings for Wirecast.




Wirecast usually synchronizes its video display with the refresh rate of your display. However, this degrades performance when the Wirecast program window is not visible (due to the screen being locked, Wirecast minimized, or the Wirecast covered by another application). In order to avoid frame drop in these situations, check *Disable Vertical Sync*. However, the disadvantage of using this option is that disabling the synchronization can interfere with the smooth display of video in the Wirecast UI. It will not, however, have any negative effect on your broadcast.

---

**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. However, with some graphics cards this can result in very noticeable degradation of video quality. Performance will improve when streaming to most destinations (including Virtual Camera Out), except in combination with some graphics cards on Windows systems. The best way to know if this option is advantageous to use on your system is by trial and error, and observe the results.

# Using the Main Window

## Introduction

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

## Topics

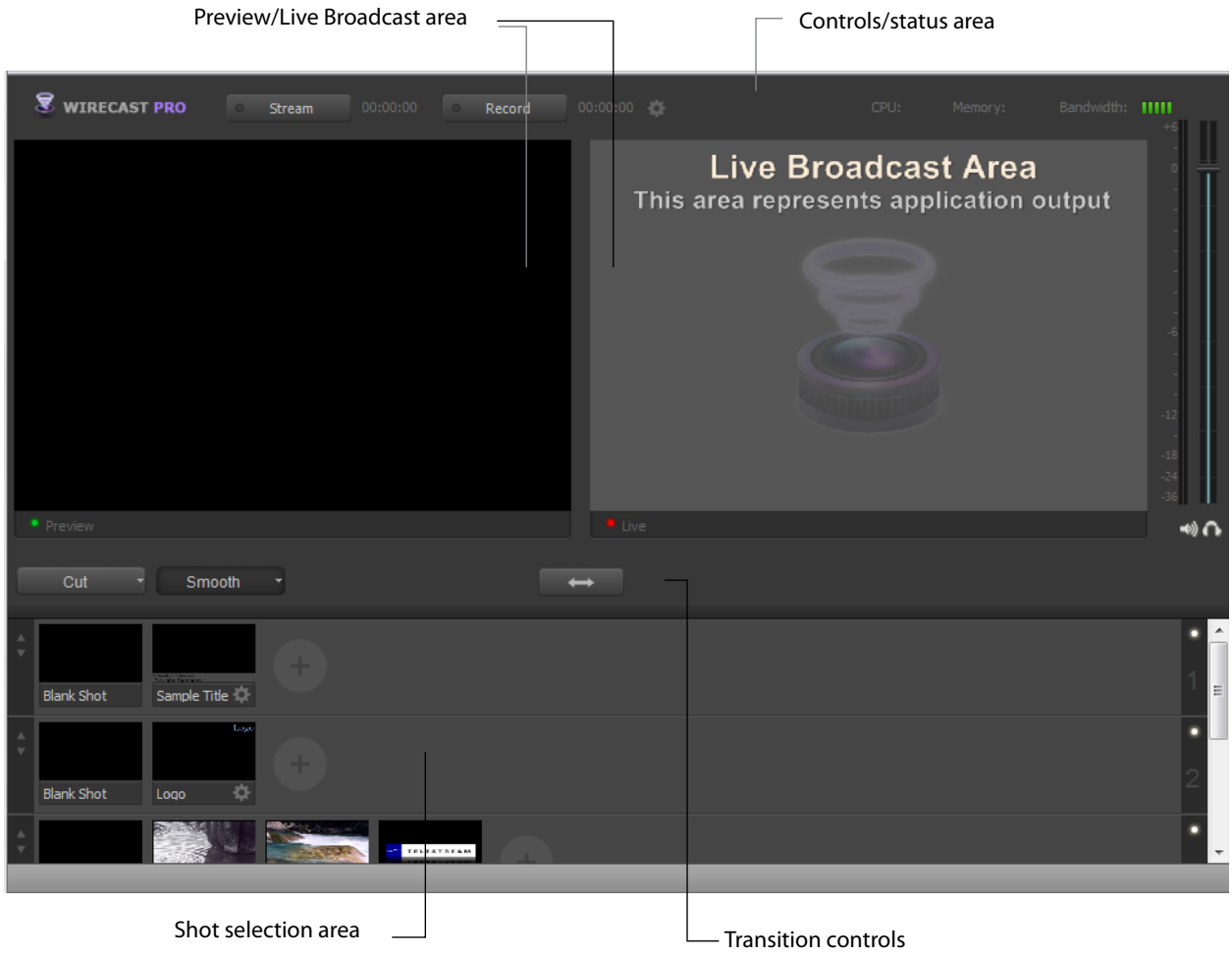


## Overview

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).




# Control/Status Area

Control buttons and status 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*).
- **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 Web site for suggested configurations.

---

- **Memory Usage** This displays the current percentage of memory use when streaming or recording.
- **Bandwidth** This displays the current bandwidth used by your broadcast. The greater the number of green bars, the greater the bandwidth, As the green bars fall away it indicates lower than required bandwidth. A single red bar indicates that the bandwidth has dropped out completely.

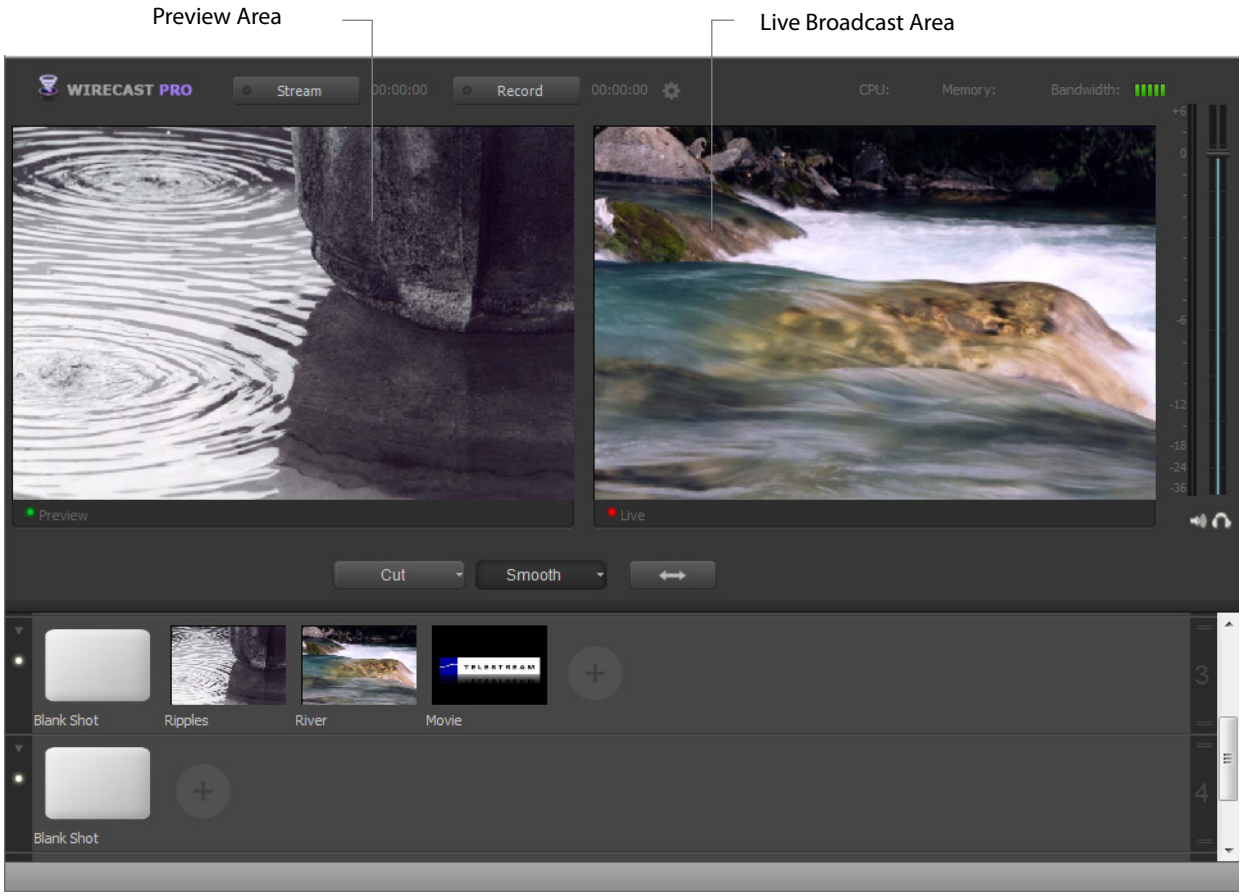
# Preview / Live Broadcast Area

STUDIO

When you open a new document, only the Live area displays. The Live area shows what is broadcast to your viewers before the encoding or compression.

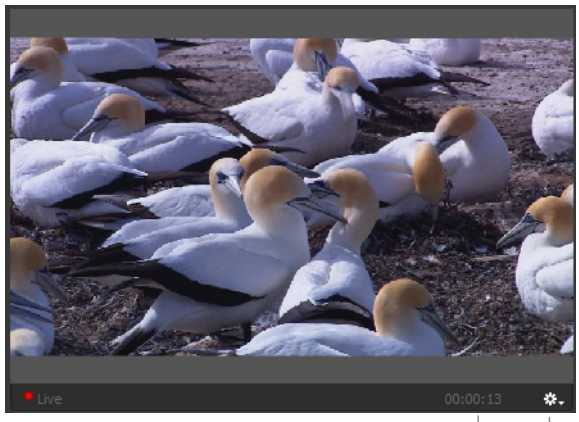
When AutoLive is off, you can make several changes without your viewers seeing the change. This is most useful when you are using an engineer to run your broadcast. When you are making changes to your broadcast, you may want to see those changes before broadcasting them. Preview allows you to do this.

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 Ripples shot become Live.



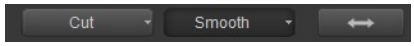
# Countdown Clock Display

The Main window displays a countdown clock whenever a video shot is playing. Click the gear menu icon to display actions available for the output that is playing.




# Transition Controls

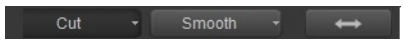
The transition area is in the middle of the Main Window:




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.

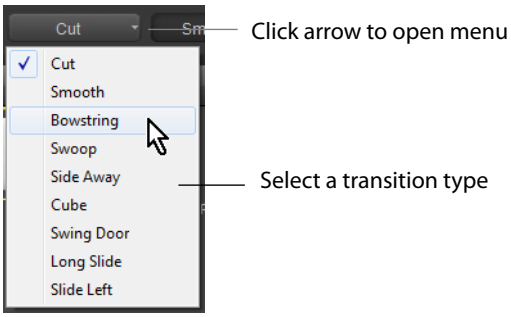
## Changing Transitions

If you click the Cut button, it becomes selected and making it the current transition type:



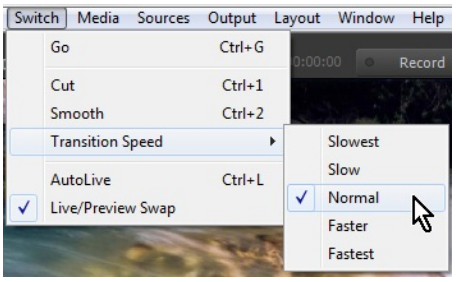

You always have two different transition types available. You can also select one of the two buttons by pressing Ctrl+1 or 2 keys for the two transition types displayed.

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.




## Transition Speed

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



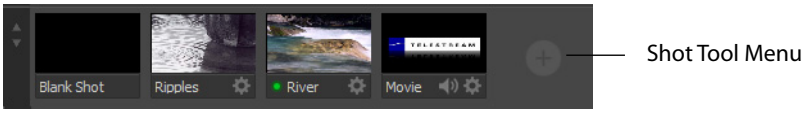

## Go Button

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

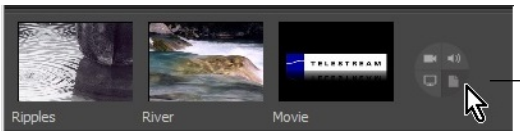

Clicking the Go button does nothing when Wirecast is in its default mode of AutoLive, except to update a live shot if you have made changes to it using the Shot Editor.

# Shot Tool Menu

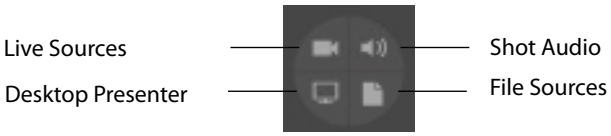
The Shot Tool Menu provides a way to open lives sources, file sources, the Desktop Presenter program, shot graphics, shot audio, and shot templates. The Shot Tool Menu is the circle to the right of the shot icons.



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




There are four menu items:




## Live Sources

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

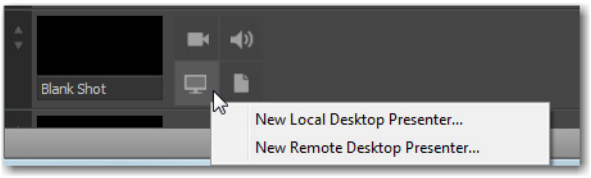
## Shot Audio

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 Destop Presenter* or *New Local Destop 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.

# Shot Selection Area

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


The shot icons can be made to display any live activity in the device it represents (cameras, streaming, etc.). See *Performance* in the Preferences section.

## Changing Shots

You can change shots by clicking on the one you want to activate. You can add a new empty shot by right-clicking on any existing shot displayed in the Shot Area and select *Add Shot*.

**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 Ctrl+Backspace keys.

**Edit Shot** You can edit a shot by double-clicking on it, by right-clicking it and selecting Edit Shot, or by selecting Edit Shot from the Edit menu. You can also edit a shot by selecting it and pressing the Ctrl+E 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 Ctrl+D 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 Ctrl+R keys.

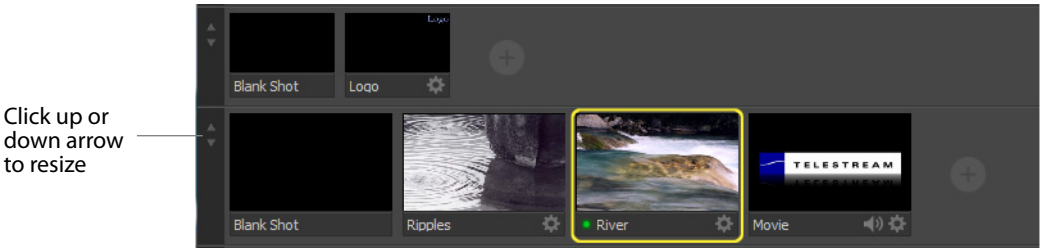
## Moving a Shot to Another Layer

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 drag the shot to a different layer.

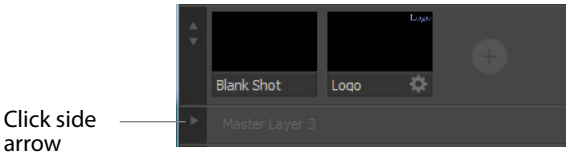
When shots are created, they are assigned to a specific layer. They exist on that layer until they are moved or deleted. (See *Layers*.)

## 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.




To un-hide a layer window, click the side arrow that is displayed.

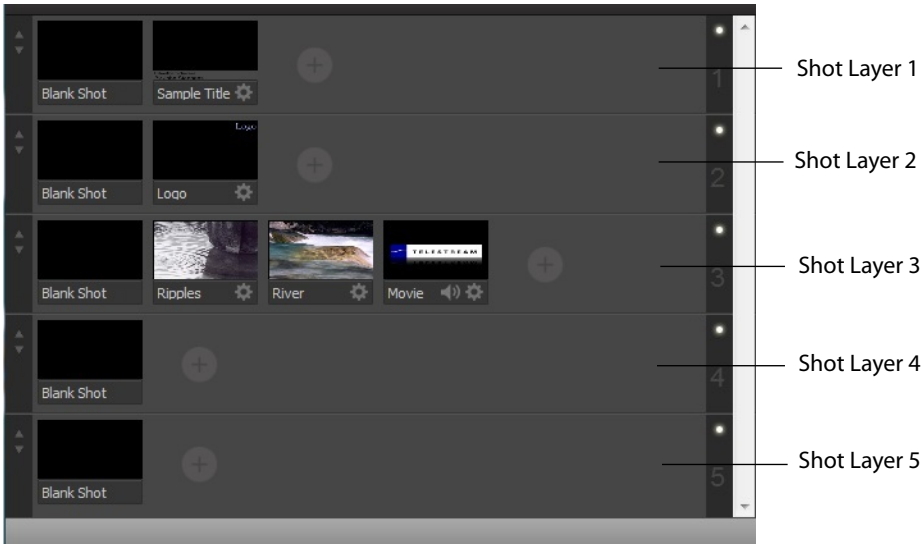



# Layers

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.

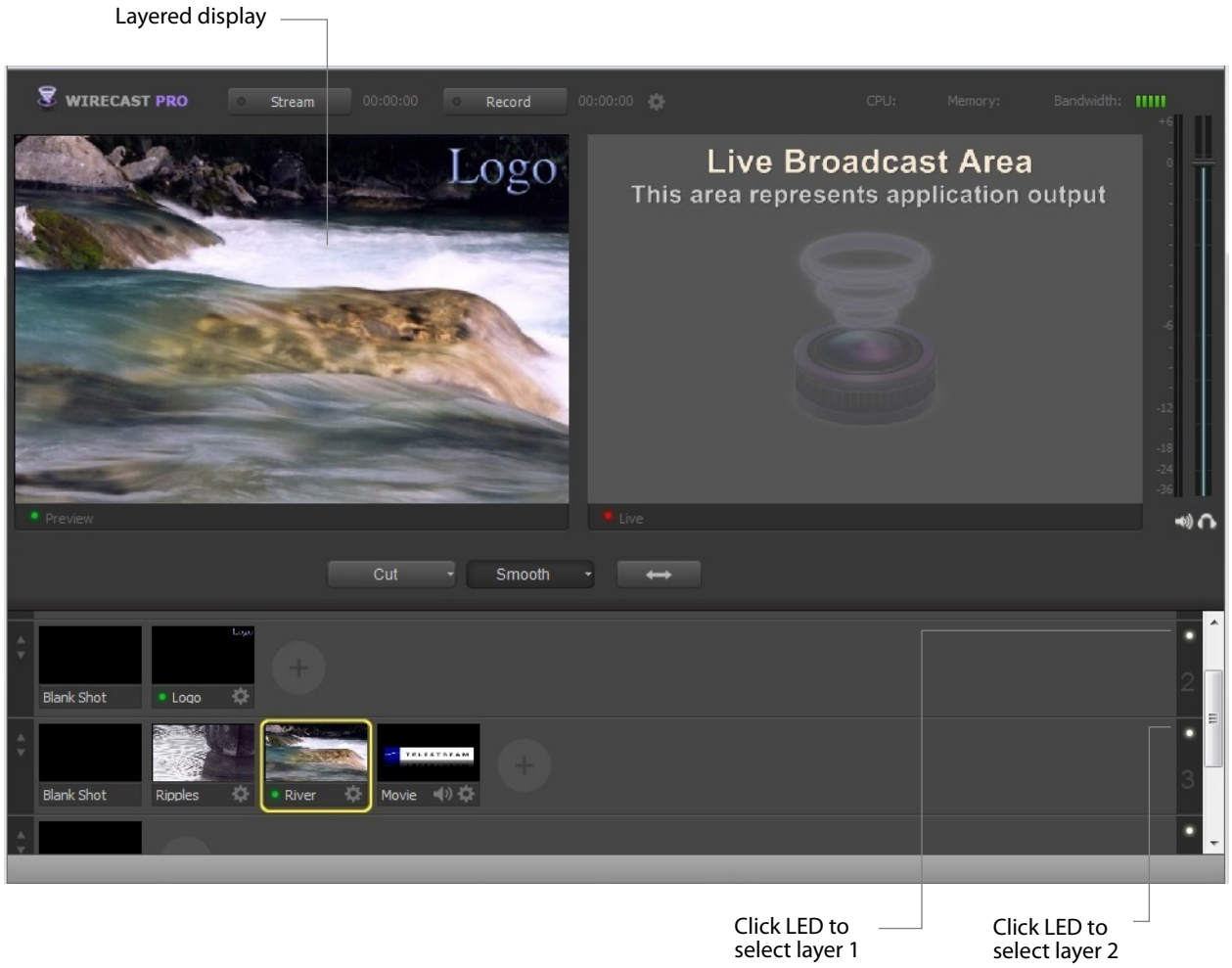



## What is a Layer?

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.



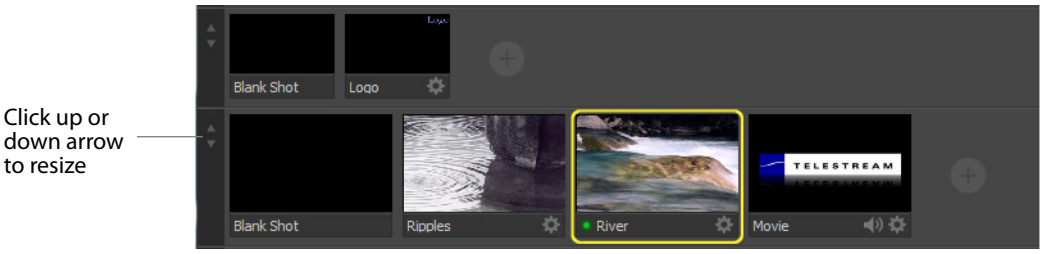

## Moving a Shot to Another Layer

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.

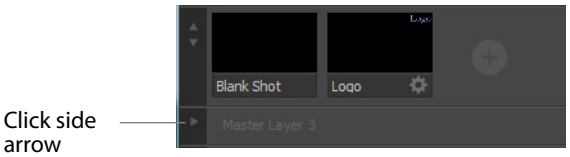
## Layer Zooming

You can zoom in on any layer, enabling you to see the icons more clearly. To do this click the up or down arrow on the left side of the layer window. Click the UP arrow to make all the icons larger (zoom in); click the down arrow to make them smaller (zoom out).

Clicking the down arrow when the shot icons are in their smallest state causes the layer window to become hidden.




To un-hide a layer window, click the side arrow that is displayed.

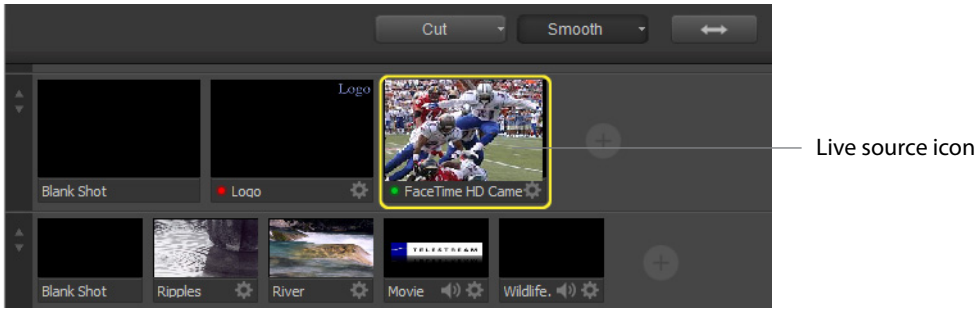



# AutoLive

AutoLive is turned on and off by selecting *Switch* > *AutoLive* (or by pressing the Ctrl+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 Ctrl+G keys.

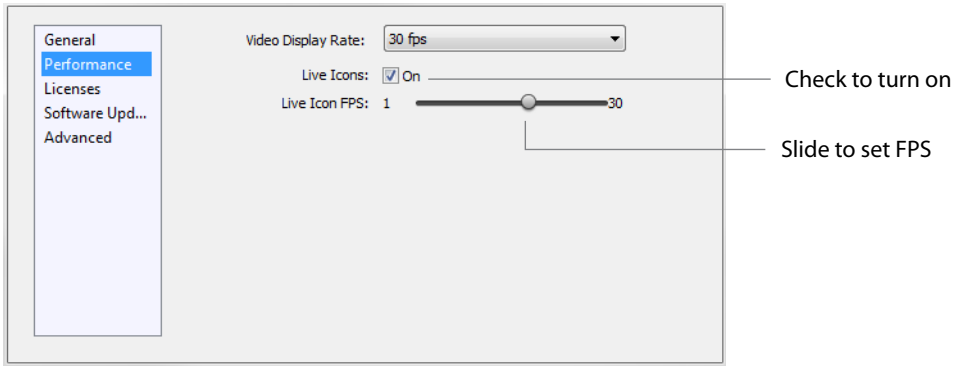
# Live Icons

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




To turn on the *Live Icon* option, 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 rates reduce the time taken to adjust the live icon display. Higher FPS rates provides a smoother display of the live icon source.



# Using the 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

To open the Audio Inspector panel, select Audio Inspector from the window menu.

PRO

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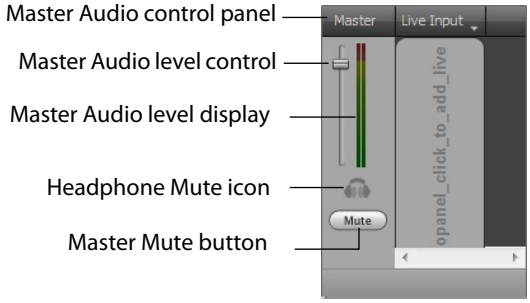
**Note:** The use of the Audio Inspector requires a Wirecast Pro license. For licensing information, select Preferences from the Filemenu, click the Add (+) button, then click Purchase. Or, contact sales@telestream.net.

---

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, Pipelines, etc. The remaining audio controls are associated with specific shots.

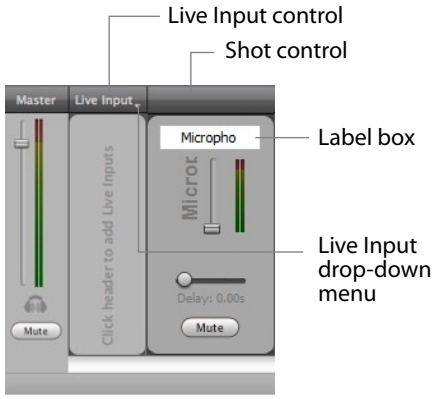



## Hardware Audio and Shot Audio

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.

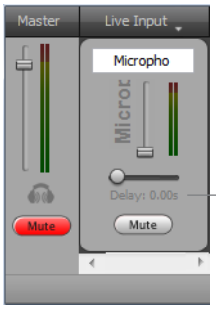
Below the name of each audio source is a white label box. You can rename this box to describe your source. To rename the audio source, click in the white box and enter the new name.

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.



# Hardware Audio

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

The horizontal slider in a Live Input controls the audio delay. Dragging the slider to the right increases delay, up to one second, 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.

# Using the Source Settings

## Introduction

These topics describe how to use the Source Settings editor.

## Topics



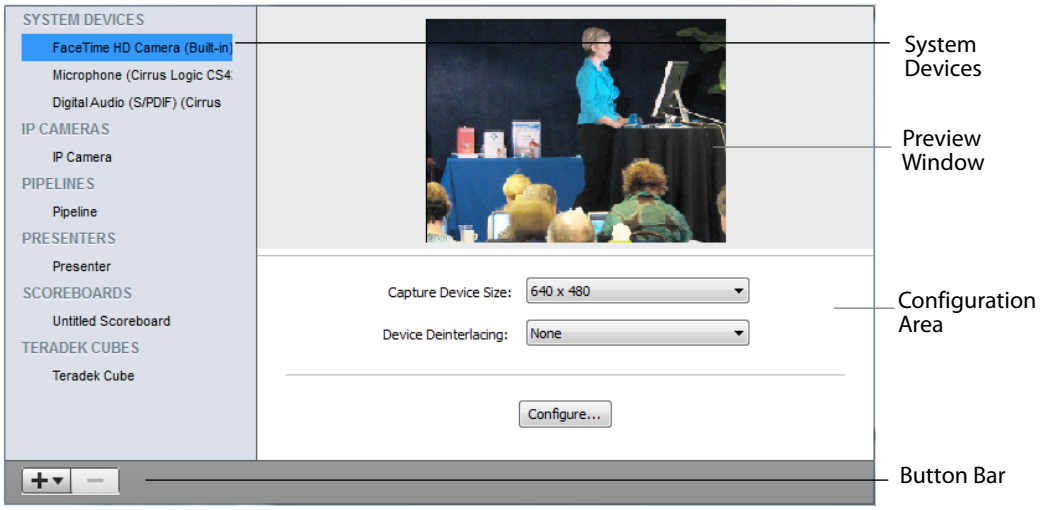
## Overview

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

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.

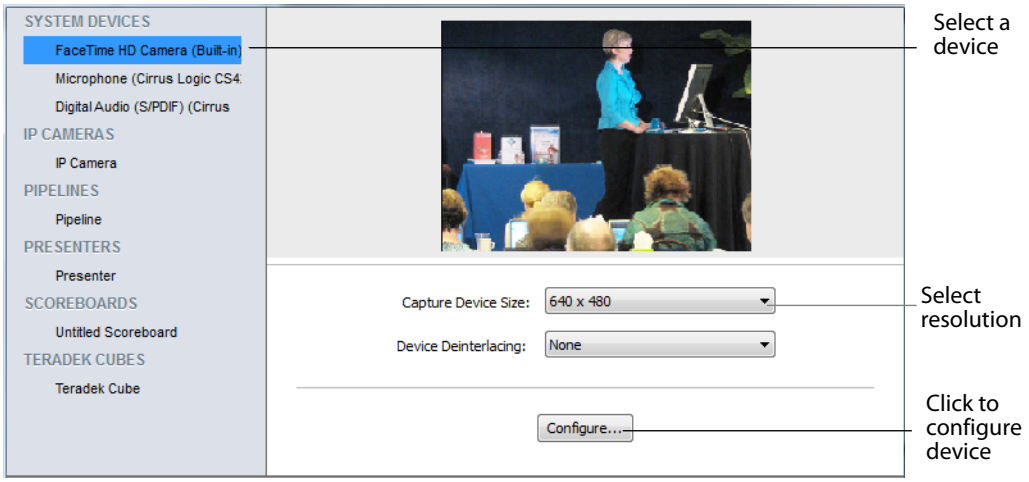



**Note:** In Wirecast versions 4.0 and above, de-interlacing has been moved from System Preferences (where it was a global setting) to the Source Settings, where it is individually controlled by each device.

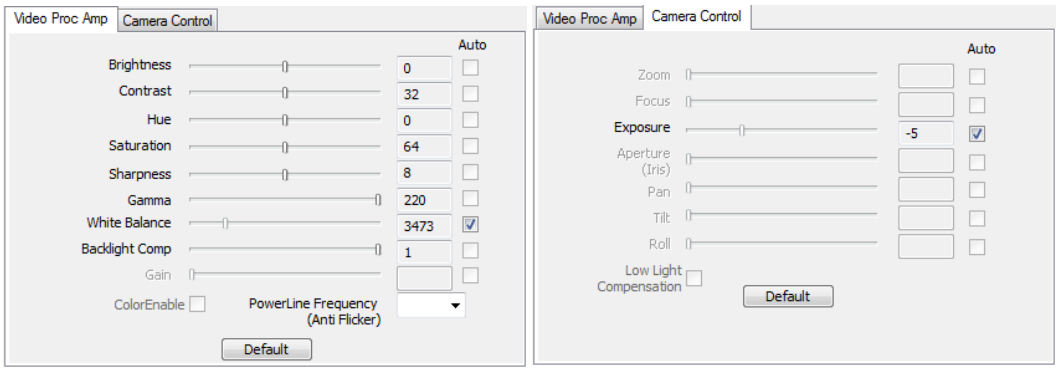
# System Devices

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.




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 greyed-out.

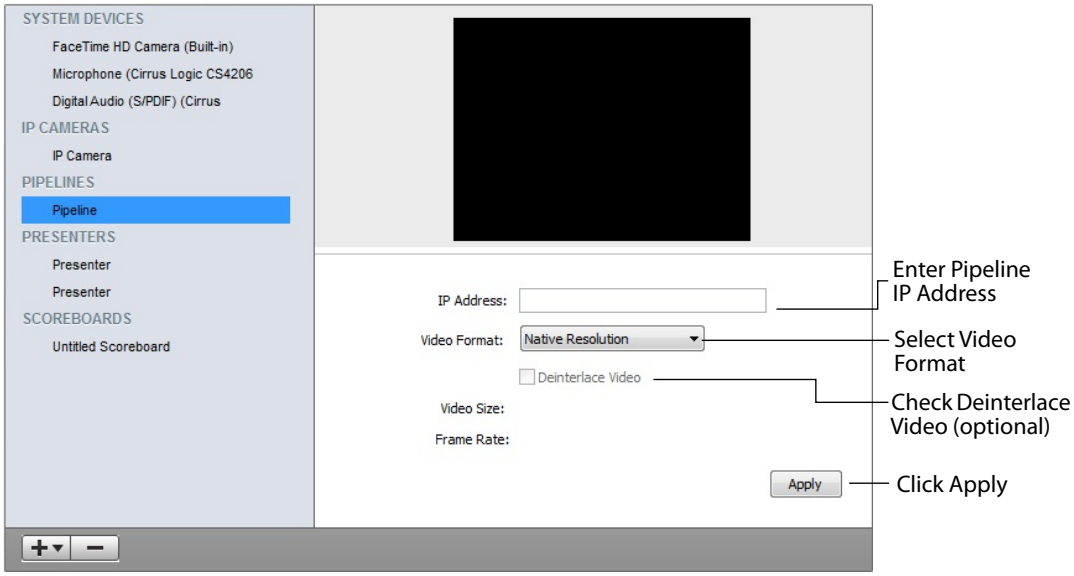



# Pipelines

PRO

Pipeline is a network-based video capture and play-out device for transferring SD and HD SDI audio and video. Wirecast can use Pipelines on your local network as video sources and bring them directly into your document. Wirecast usually detects local Pipelines automatically using Bonjour Print Services, and adds them to the Source Settings window. However, when necessary, you can add them manually by clicking the plus (+) button in the bottom left corner of the Source Settings window and then selecting Add Pipeline. This adds a new Pipeline source to the list of sources.

To configure the new Pipeline source, enter the IP Address of the Pipeline source and click *Apply*. Select also a resolution from the Video Format drop-down men, and check the Deinterlace Video checkbox if you want the video deinterlaced.

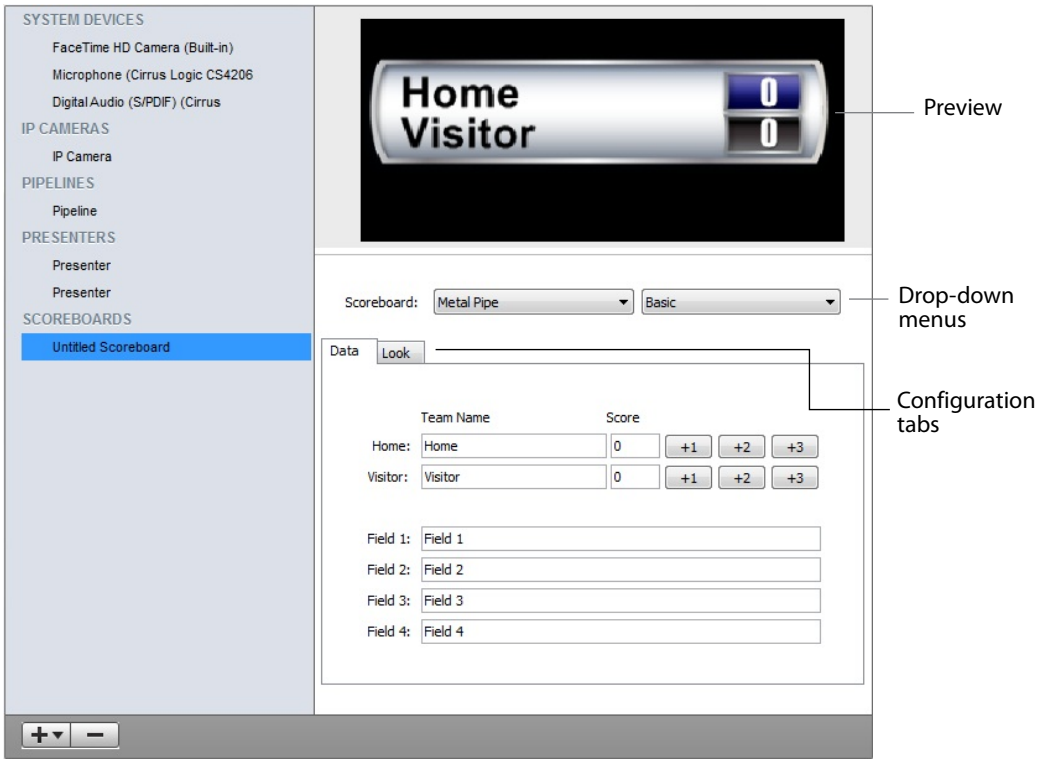



# Scoreboards

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.

## 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.

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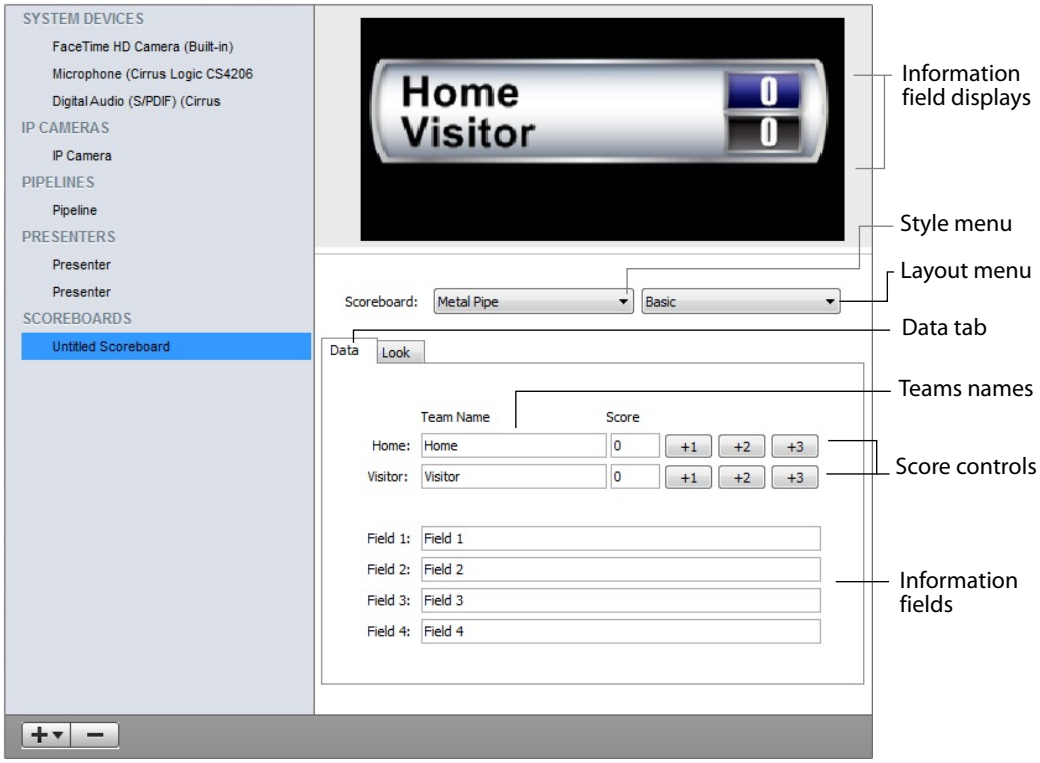
**Note:** Because Wirecast updates the scoreboards dynamically, It is recommended that you fill in the additional information fields while using a layout that hides them.

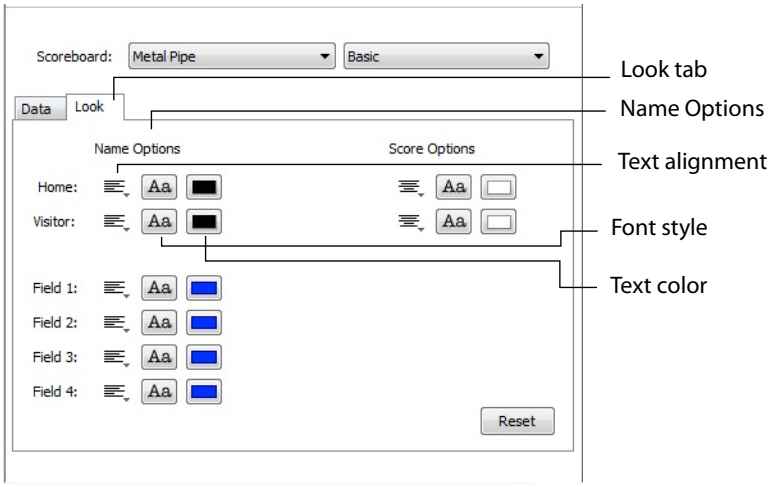
Then, change to a layout that reveals those fields when ready, otherwise your viewers see you typing in those fields live.




## 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.

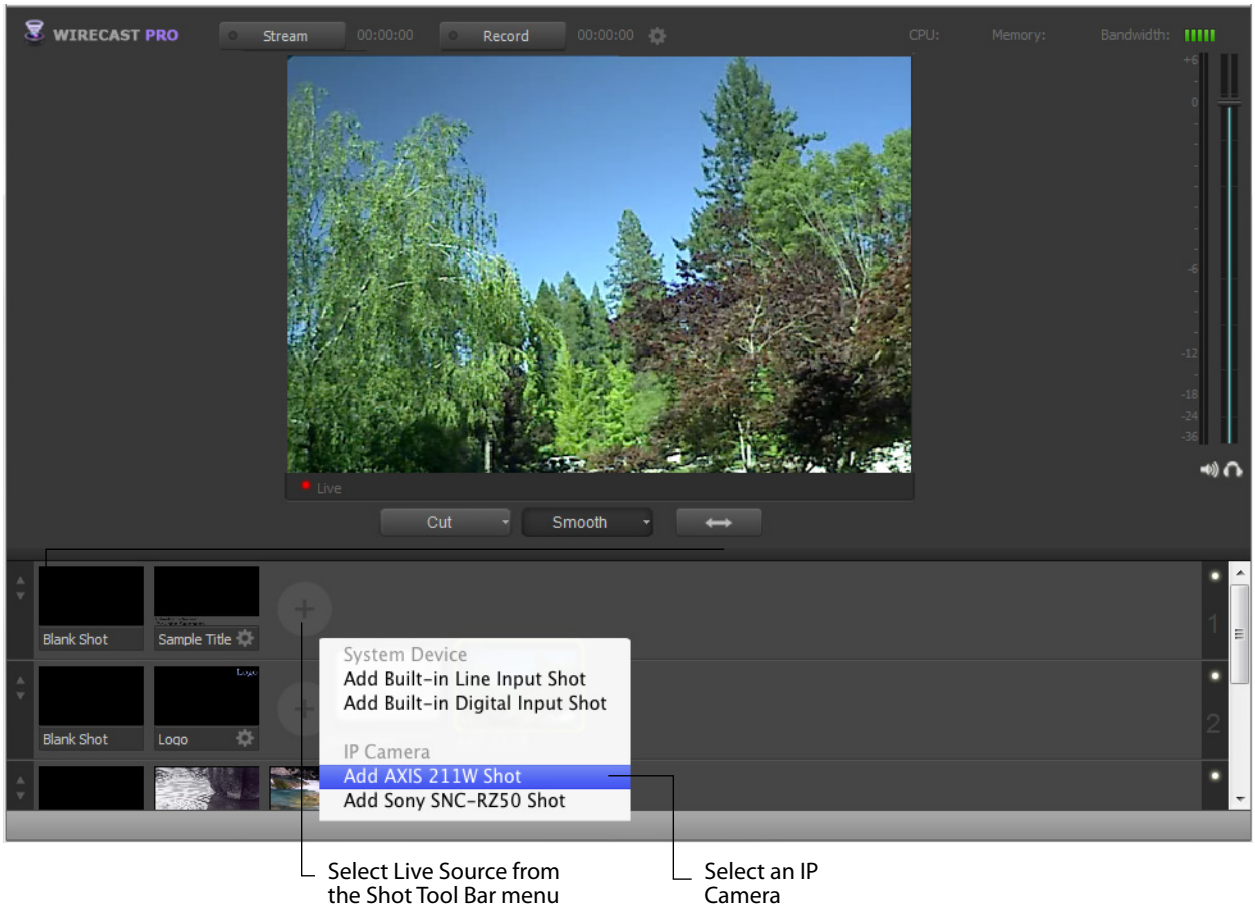
Some scoreboard styles also allow you to change the background colors of the Home and Visitor fields, to make them match their team color. This option, when displayed, is located between Name Options and Score Options.



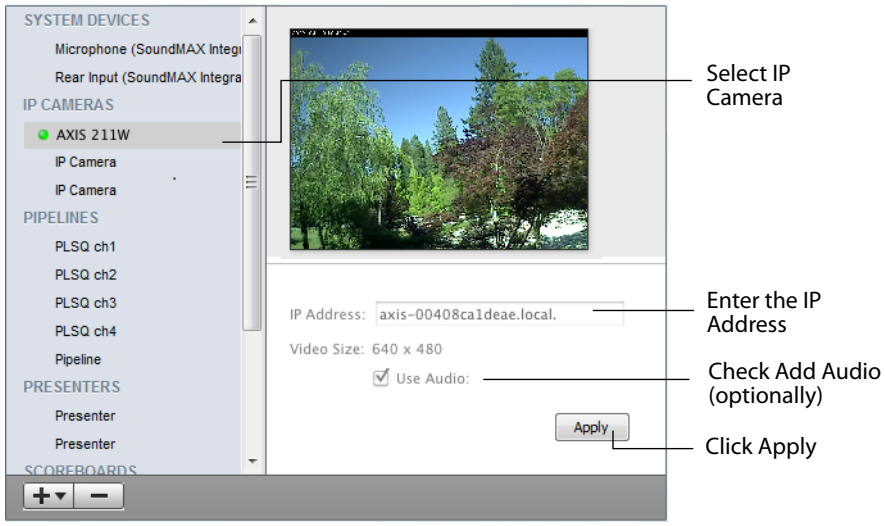
# IP Cameras

PRO

To enable the use of an IP camera and create a shot using it, you must first add it to Wirecast. To do this select Live Source from the Shot Tool Bar menu, then select an IP camera.



IP Cameras are usually auto-detected by Wirecast, but if not detected they can be manually set up. To do this, select *New IP Camera* from the Sources menu in the Main window. Then, in the Source Settings window, select an IP camera from the list of devices, enter the IP Address of the camera, optionally check *Use Audio*, and click *Apply*:




When Use Audio is checked, audio from the camera is used if the camera has a microphone.

Some supported IP Cameras also have motion controls (directional arrows) that enable you to move the camera in different directions.

---

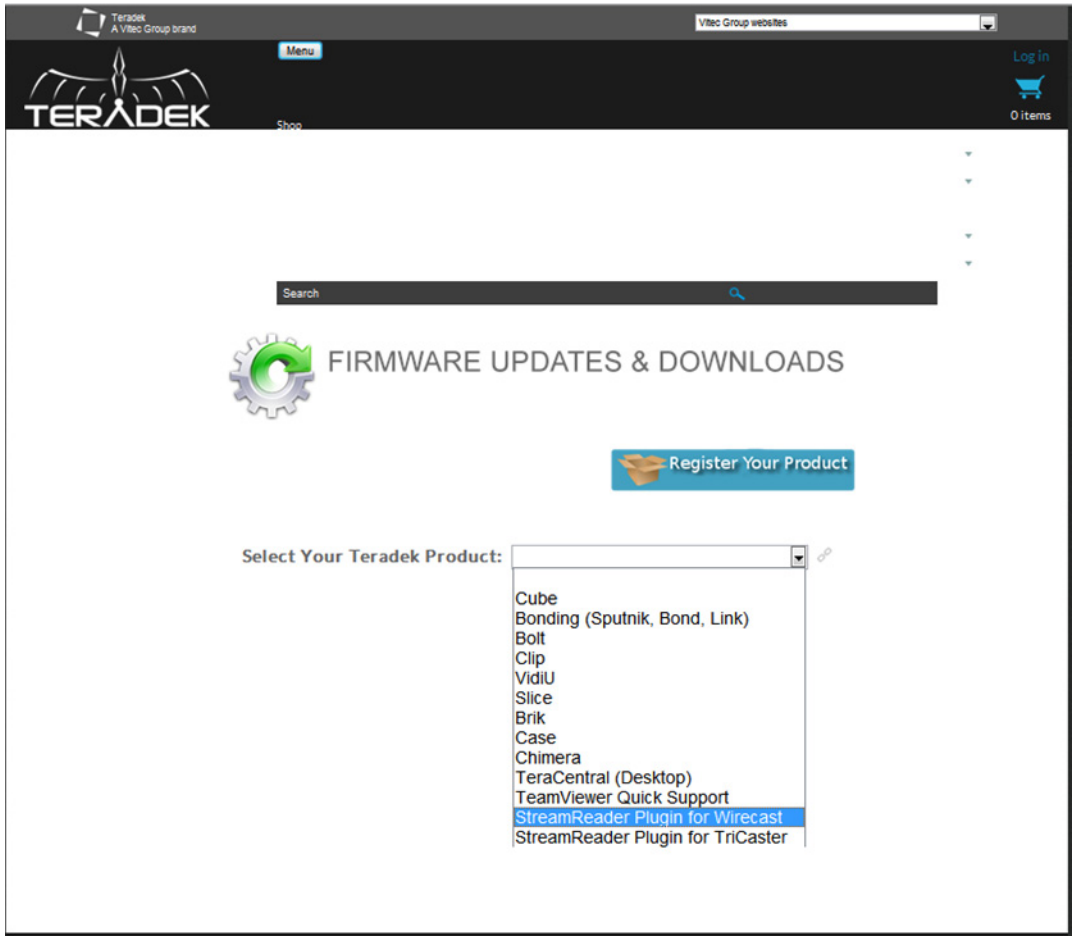
**Note:** When a IP Camera has been auto-detected, the IP Address field is greyed-out.

---

IP cameras must be set to H264 mode, rather than Motion JPEG mode. This setting is usually performed in a Web console control panel for the IP camera. Refer to the camera's documentation for how to set up the camera.

# Teradek Cube

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




# LiveU

STUDIO

LiveU is a portable, video-over-cellular, video uplink system. LiveU uses a video encoder and a series of parallel cellular modems to transmit video. LiveU uses high-profile H.264 encoding to provide uninterrupted video streaming from anywhere, directly to Wirecast as a live camera source.

You can also send Wirecast output directly in to LiveU for transmission to another broadcast destination.

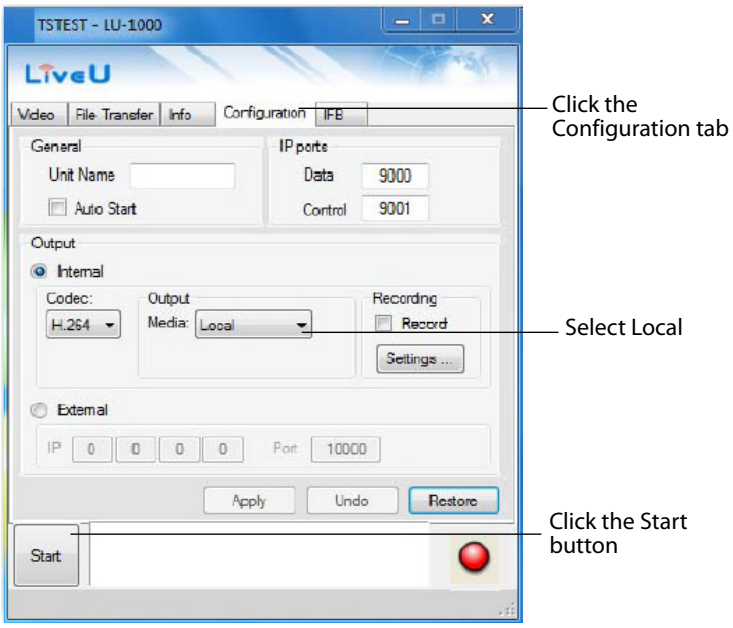
For more information about LiveU, see www.liveu.tv.

**Note:** LiveU can only be used with Wirecast for Windows.

## Using LiveU as a Source

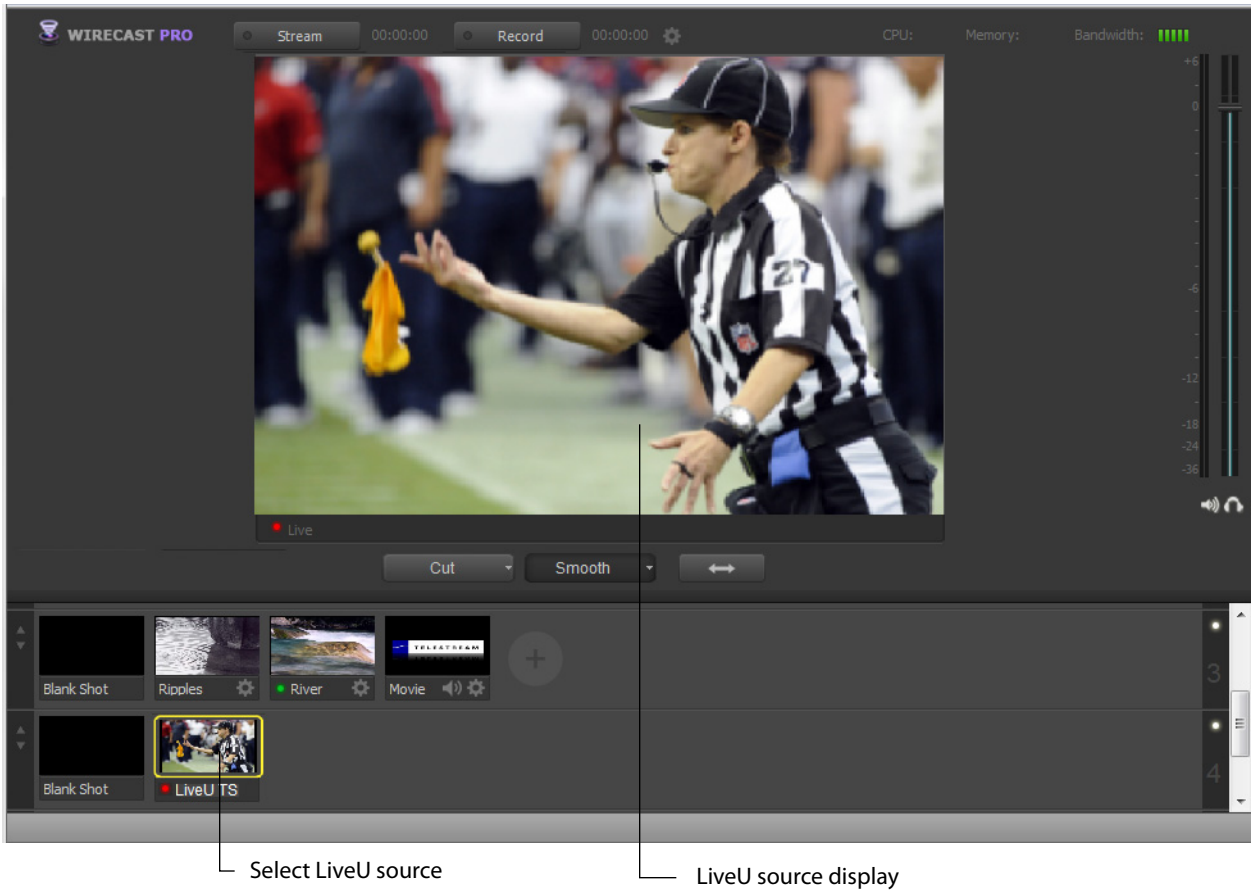
Follow these steps to set up and use LiveU as a live camera source.

1. Download and install the LiveU server software provided by LiveU.
2. Follow the instructions provided by LiveU to configure the software which connects with your LiveU backpack. Click the *Configuration* tab, select *Local* from the Output Media drop-down menu, and click *Start* to start transmitting video.




3. LiveU displays a LiveU Player window without any content displayed. Do not close this window, just move it out of the way.
4. Check the status field at the bottom of the window, and wait until you observe data being received. LiveU displays *Received Rate <current rate>* in this field.

5. Start up Wirecast .The LiveU source displays in the Shot List area as *liveu_[your unit name]*. The audio source is named *liveu_[your unit name]_audio*. Add both of these sources to a single shot to begin using your LiveU backpack with Wirecast.




**Note:** If you encounter issues connecting your LiveU unit to the LiveU server application, contact LiveU support at www.liveu.tv/support.html.

## Using LiveU as an Output

Configure LiveU to stream to the destination of your choice. Connect your Wirecast computer to your LiveU backpack using a DVI, VGA, or HDMI connection. For VGA and DVI, you need to run an audio cable from your computer's audio out to the LiveU backpack.

Open Wirecast and enable External Display Output on the LiveU unit. Wirecast sends video to LiveU as though it were a camera. The Wirecast output can be re-broadcast or sent straight to a Web destination.

## LiveU Workflow Examples

One workflow example sets up LiveU as a source into Wirecast. This requires a LiveU unit that supports outputting to the LU1000 software. The LiveU models supported are LU30 and LU60 (possibly LU70). Once you configure the LiveU to send data to the LU1000 software, you can then set up the LU1000 to present a stream to your computer. Wirecast then sees the LU1000 as a source, enabling it to be added to a Wirecast document.

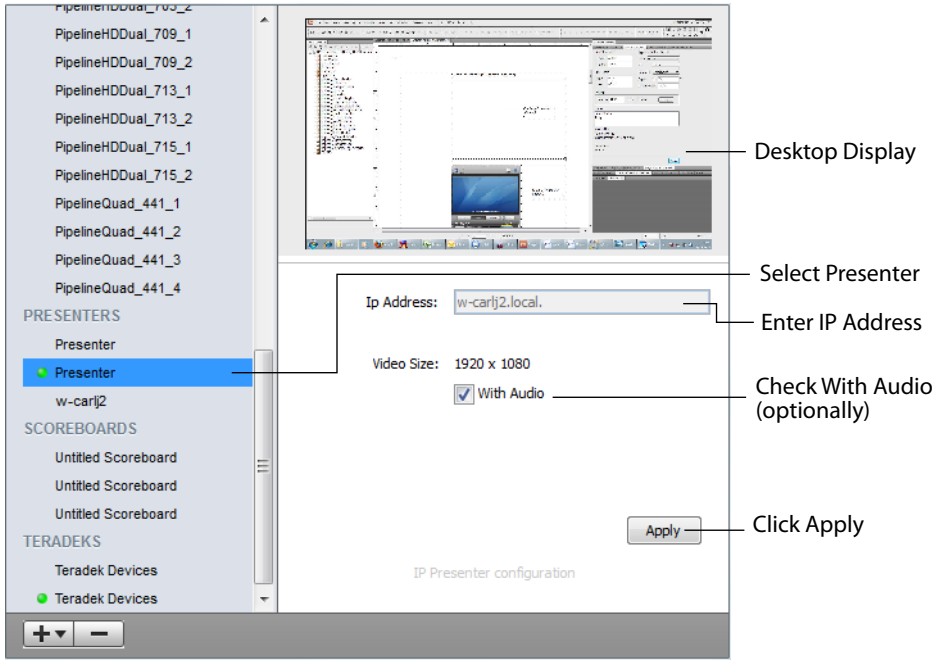
Another workflow outputs Wirecast to LiveU using the external display output. This works best if your Wirecast computer supports HDMI output, which is then seen by LiveU as a camera source. In this workflow, the Wirecast output is sent into the LiveU and broadcast to LiveU servers. An Lu1000 with Wirecast on it can act as a server.

# 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:



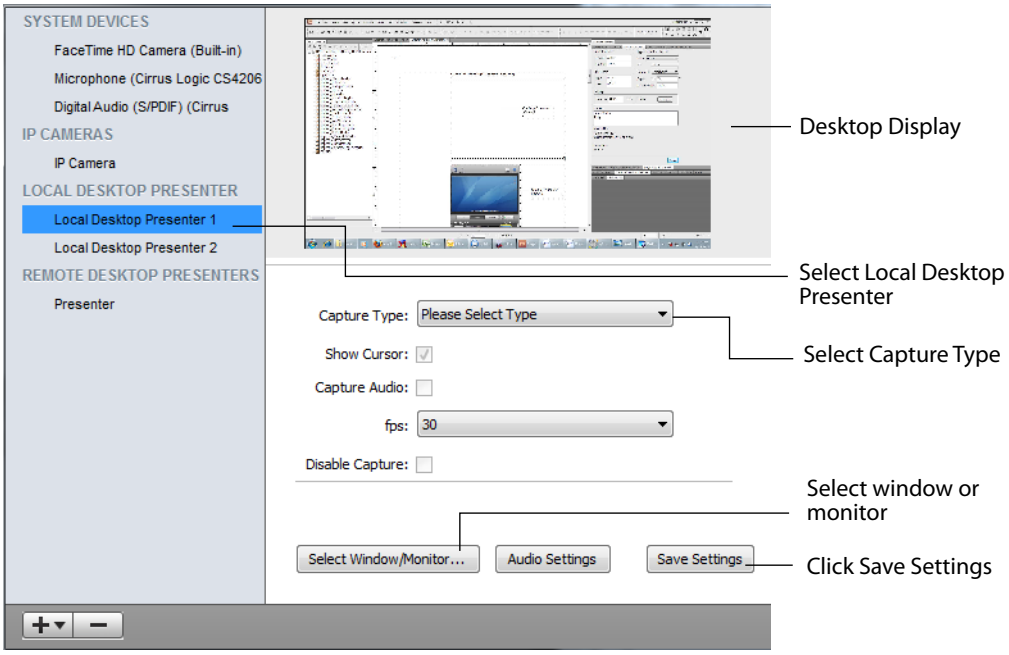

**Note:** When a Desktop Presenter has been auto-detected, the IP Address field is disabled.

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

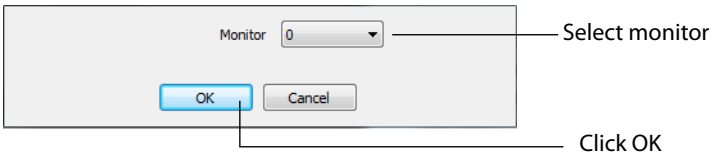
# Local Desktop Presenter

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 games or other video sources. Add a LDTP by selecting *New Local Desktop Presenter* from the Source menu in the Main window.

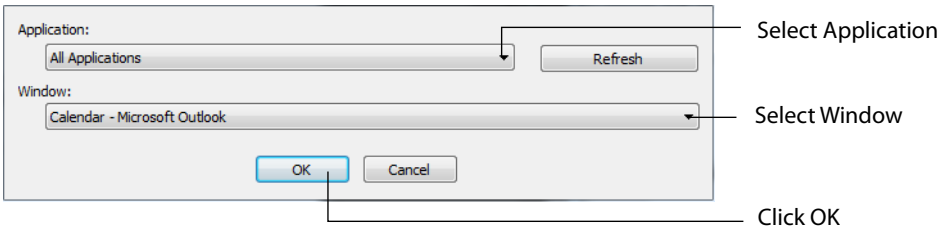
Setup the presenter in the Source Settings window by selecting a Capture Type: Monitor, Window, or Game. *Monitor* captures the whole display from a specified monitor. *Window* captures any selected window. *Game* captures a selected game that is playing on your display at full resolution.




Click *Select Window/Monitor* (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 selected *Window* or *Game* 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. *Game* mode and *Window* mode are the same, except *Game* captures and displays at full resolution.



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.

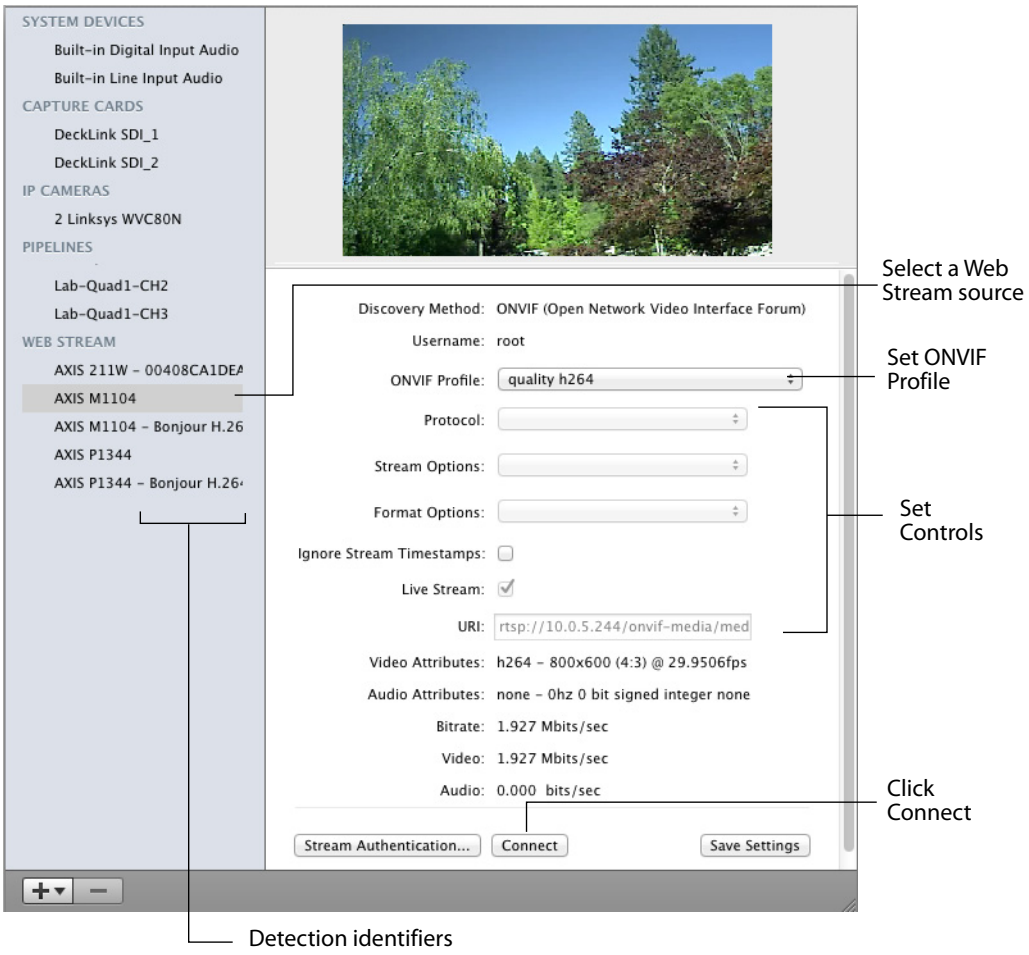
**Audio Settings** Enables you to select an audio source to be captured with the video.

# Web Stream

PRO

The new 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 deteced and displayed in the Web Stream list. They are also identified as *ONVIF* or *Bonjour* detection. Select also an ONVIF 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*.

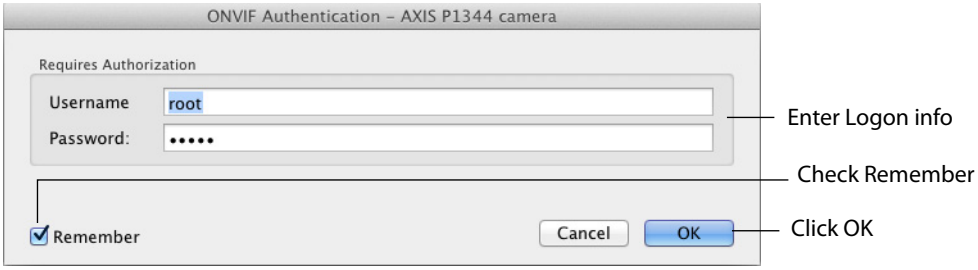
**Format Options** Select a video format to use for transcoding. If you select *Auto Detect* (the default) Wirecast with automatically detect the format to use from the incoming stream.

**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)*.

**ONVIF 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.



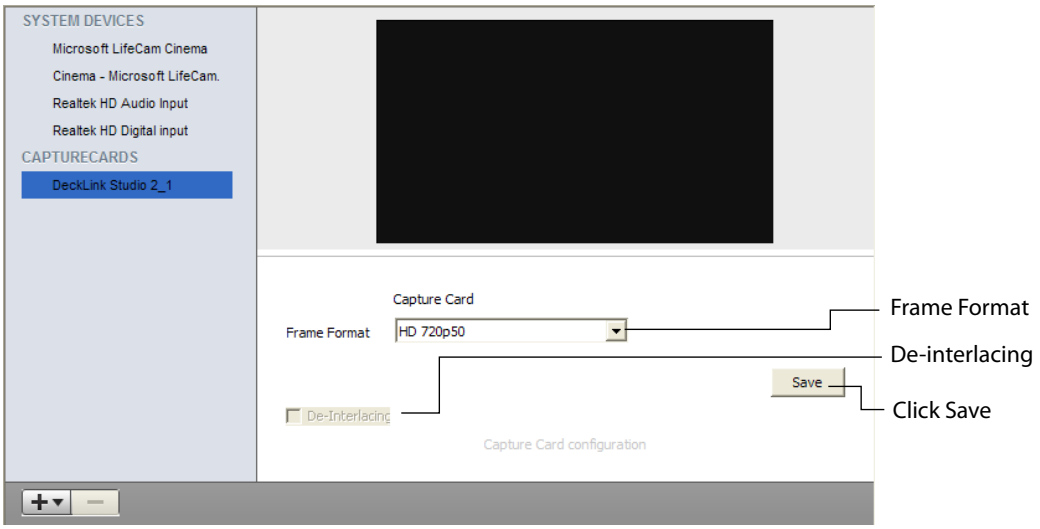

**Save Settings** Click to save your Web Service control settings.

# 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

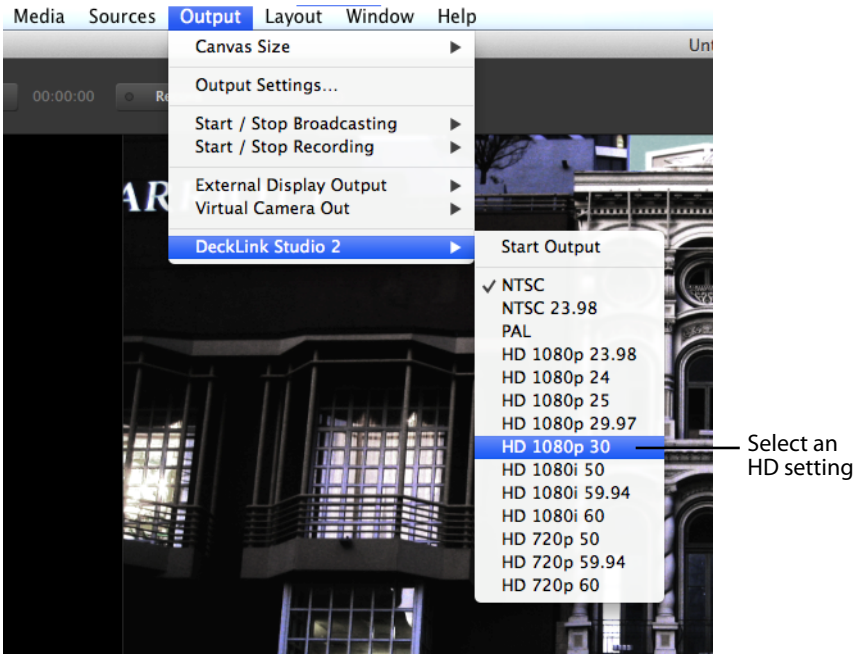
# Blackmagic

PRO

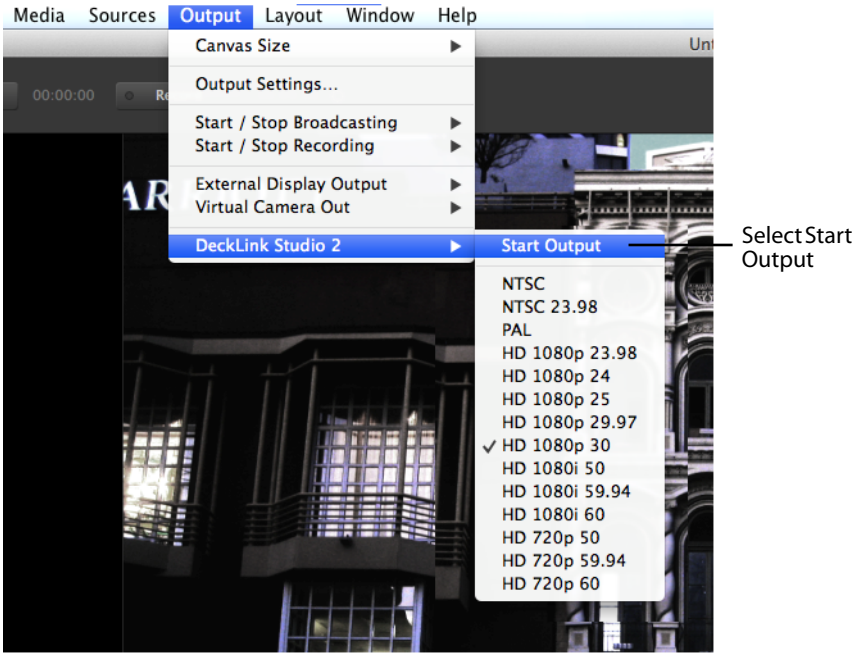
You can use Blackmagic cards to send live feeds directly into editing, effects, and broadcast design systems. In order to use this feature, install a Blackmagic card with

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

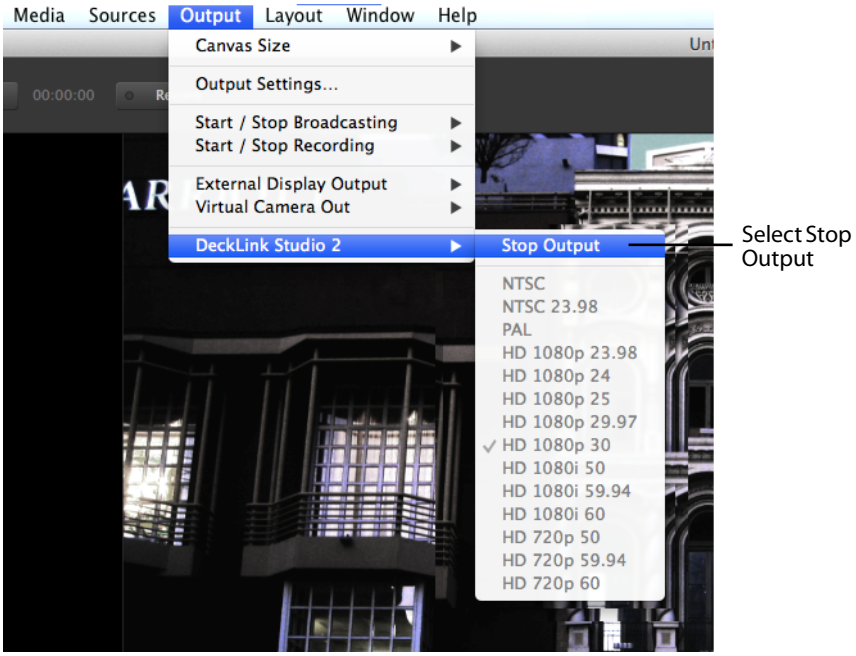
Under the Output menu, select a Blackmagic card, and then select an HD setting for its output. If your card has multiple outputs, you can select more than one and they will output simultaneously at independent resolutions and frame rates.




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

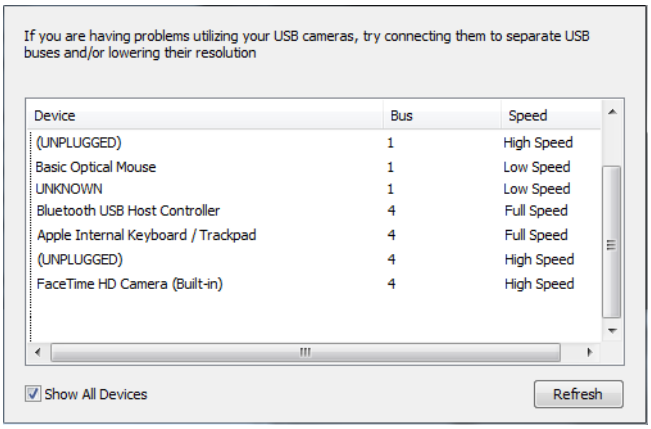


You can stop the Blackmagic card output by selecting *Stop Output*. If you have multiple outputs selected they will all stop outputting.




# 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.



# Using the Shot Editor

## Introduction

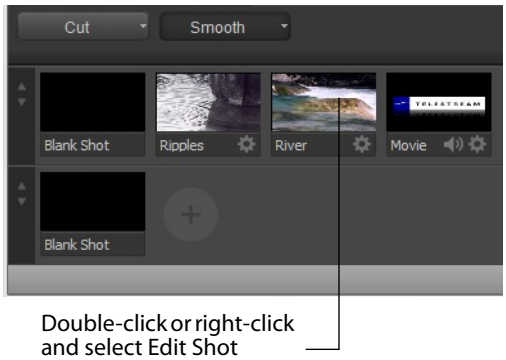
STUDIO

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

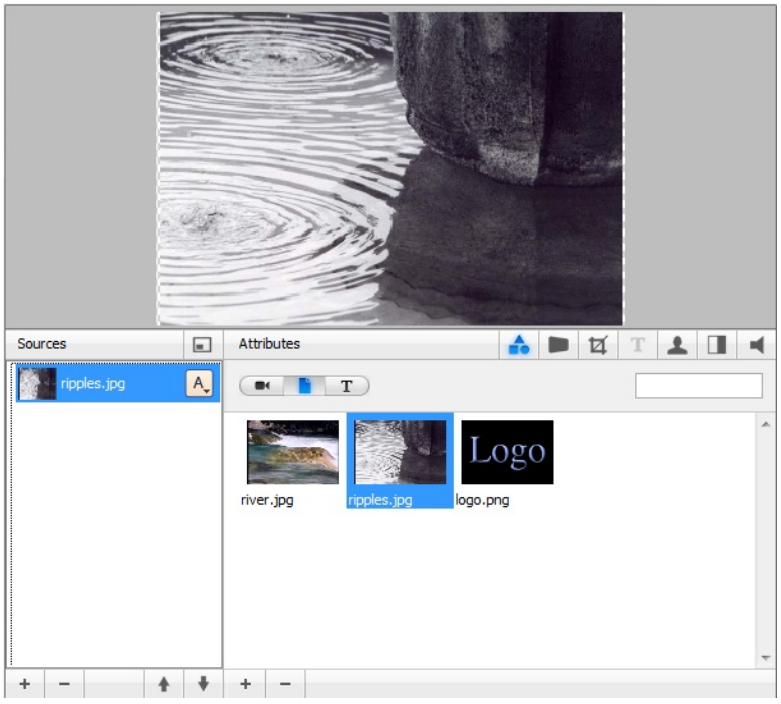
To edit a shot, double-click it or right-click and select *Edit Shot*.




## 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 Ctrl+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.

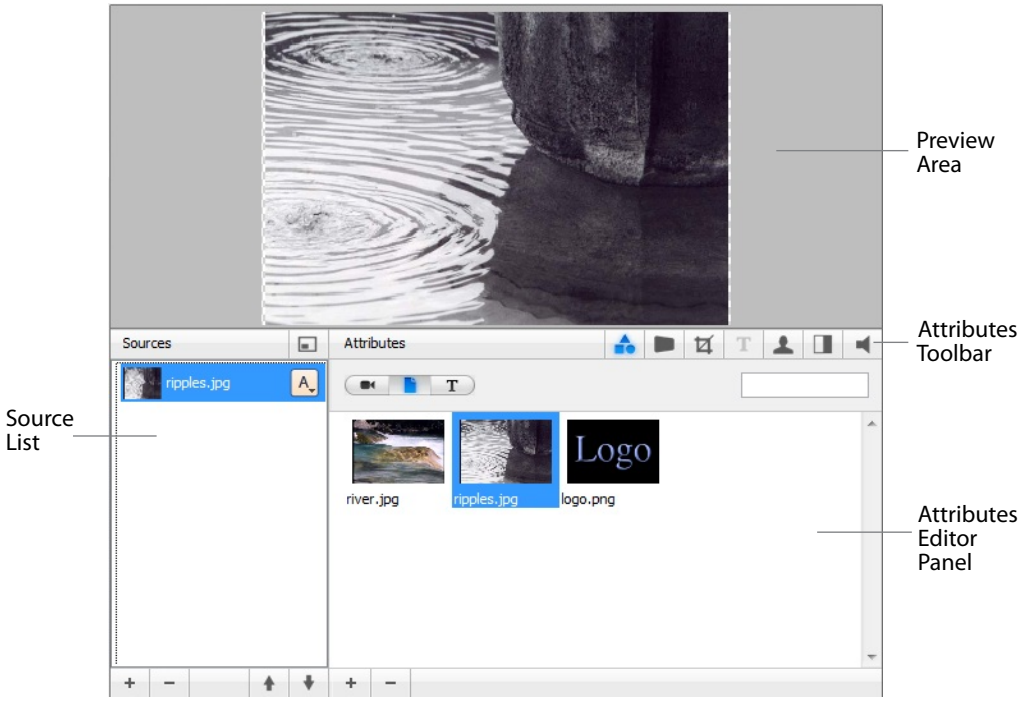
## Inspector vs. Editor

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

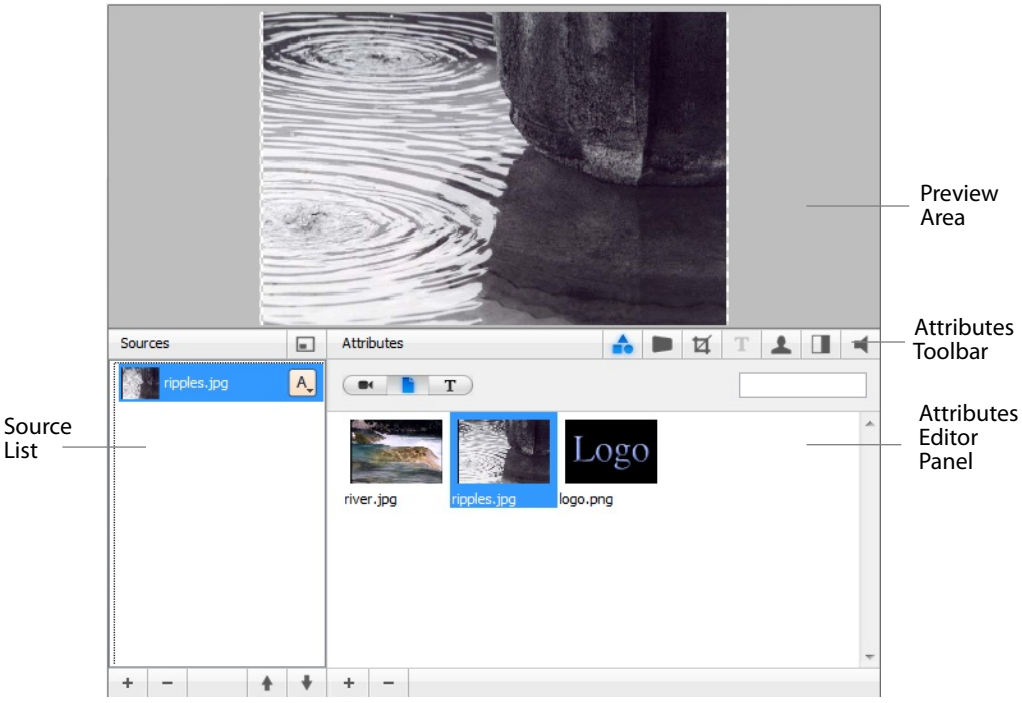
Sources are specific resources made available to Wirecast that include configuration settings. These sources can be titles, live camera feeds, graphics, etc., and they are incorporated into shots used in a broadcast. You can place up to seven sources in a shot, where they are placed as layers that reside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

## Templates

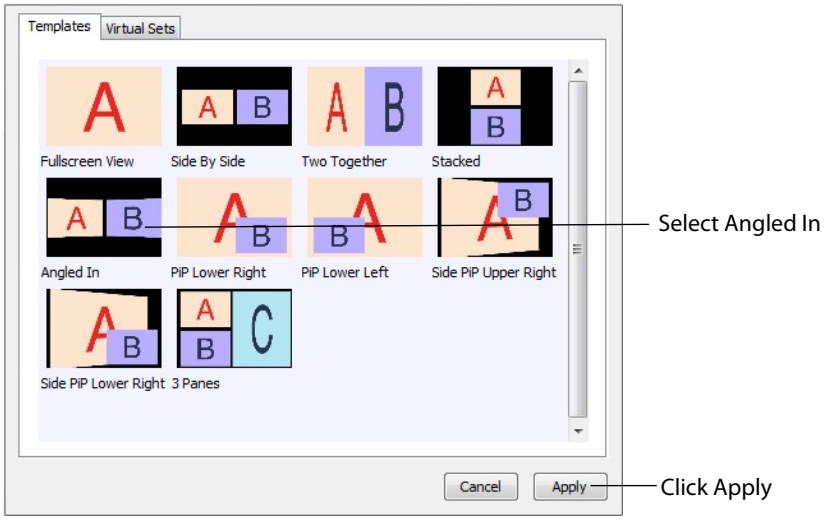
Wirecast also provides pre-built source sets, called templates, which you can add to your source list. Templates are pre-defined configurations used for displaying the sources of a shot. The templates contain place holders, labeled A, B, and C, that define where the sources in a shot are located. For 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.

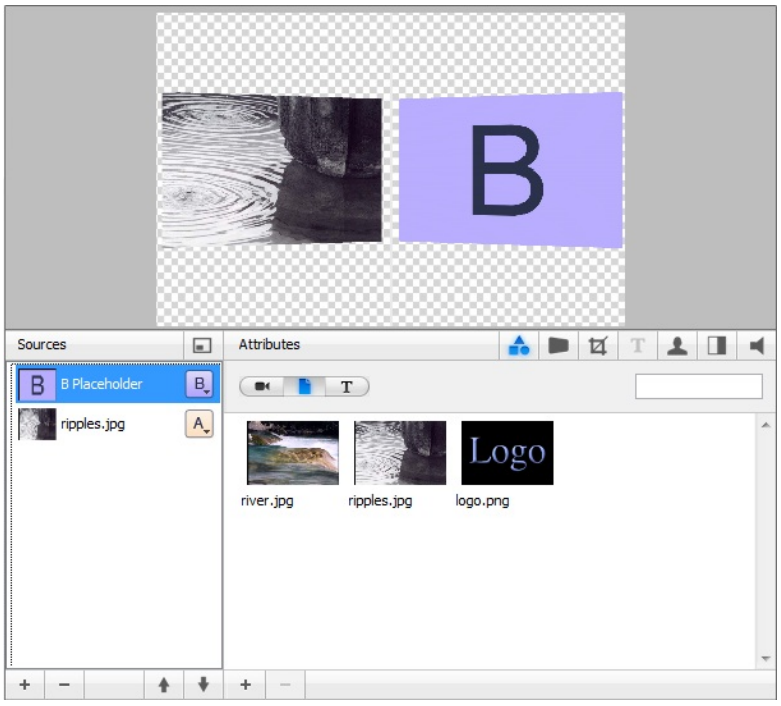
To add a set of template-based sources to your shot, click the Add Presets button to the right of the Sources List title.



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.

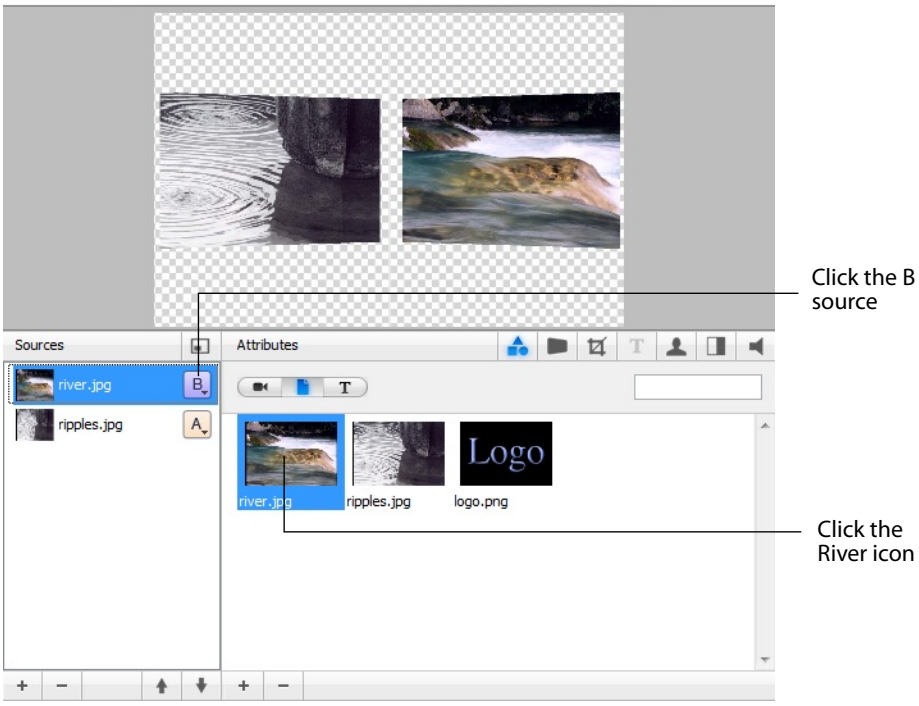



The Preview has changed in the Shot Editor window, and now shows the Ripples image on the Left side. This is because the template selected has an A and a B portion to it. Two different sources can be assigned to A and B:




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:



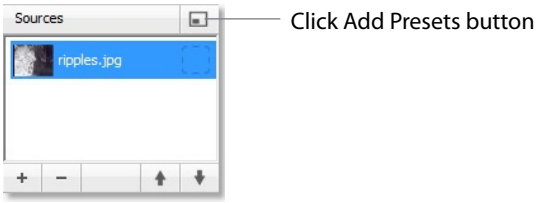

# Virtual Sets

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.

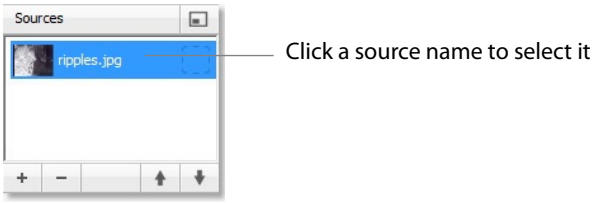
Virtual sets provide you with an easy way to create a professional looking scene with one or more live feed sources superimposed on it. These virtual sets can be used as they are, or they can be edited to suit your needs.

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



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.

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**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).

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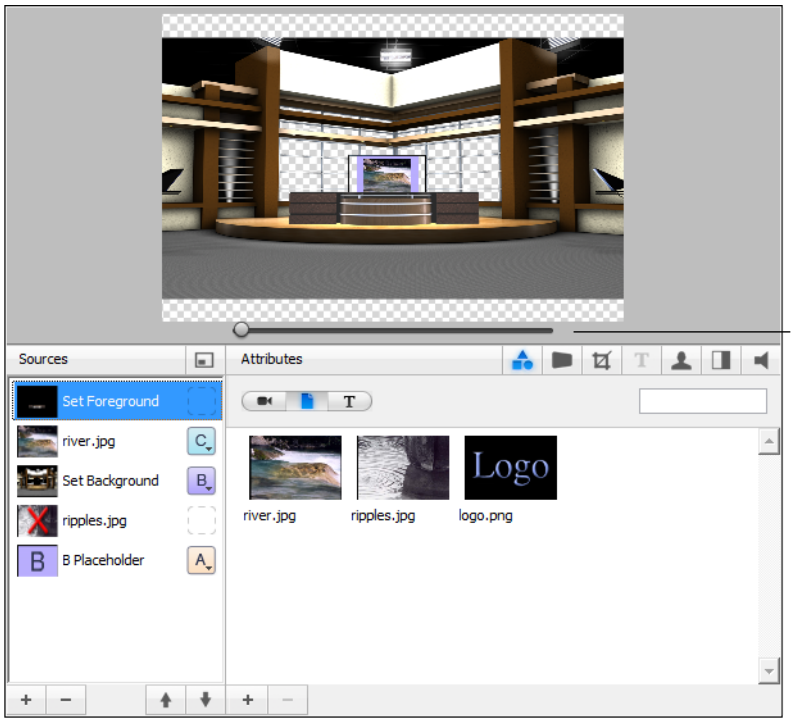
# Shot Editor Preview

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

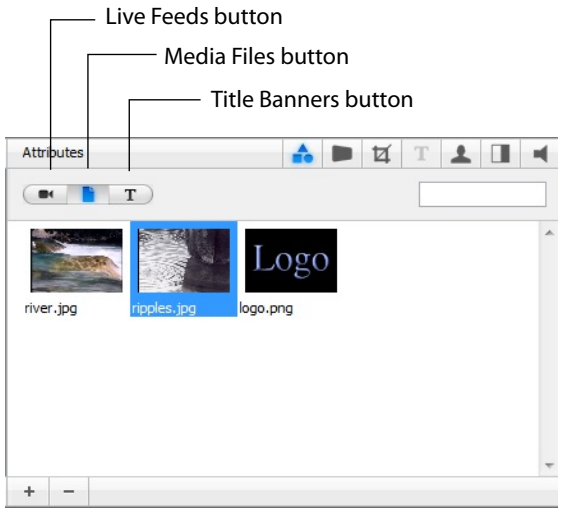
portrayed in this still shot. You can also click and drag a source displayed in the Preview area, to reposition it.

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.



# 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 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 in to your computer: microphone, Audio in (PC Audio Card), and any USB .

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 Telestream Pipelines, a Scoreboard, and IP cameras.

## Media File Sources

Click the Media Files button (document icon) to display, manage, and select your file-based media sources. Media files are recordings residing as files that can be played in QuickTime. This includes: 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.

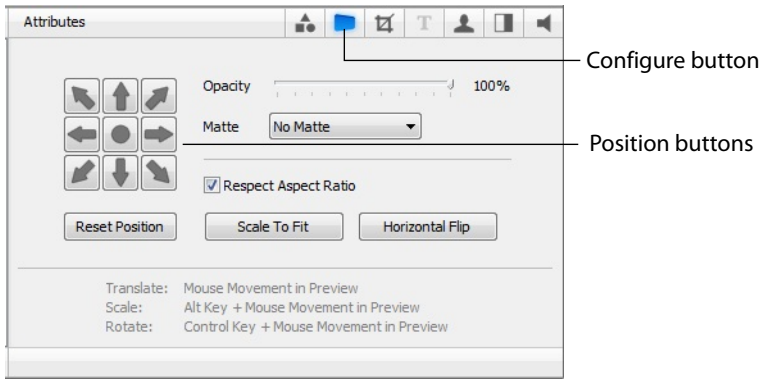
To add a title banner to a selected source, follow these steps:

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

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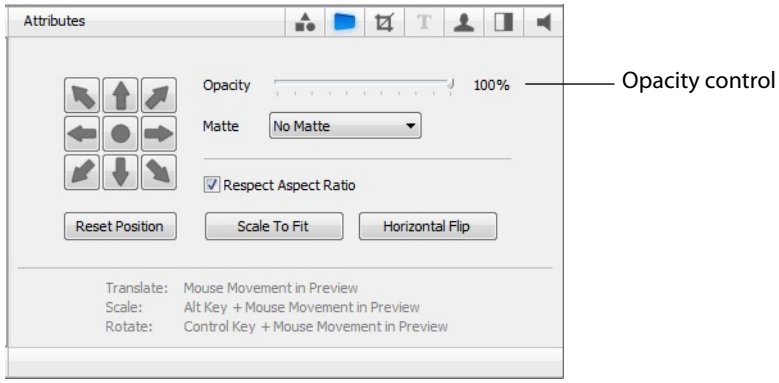
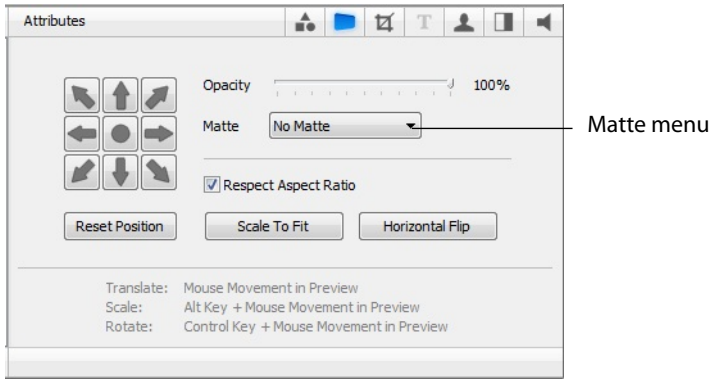


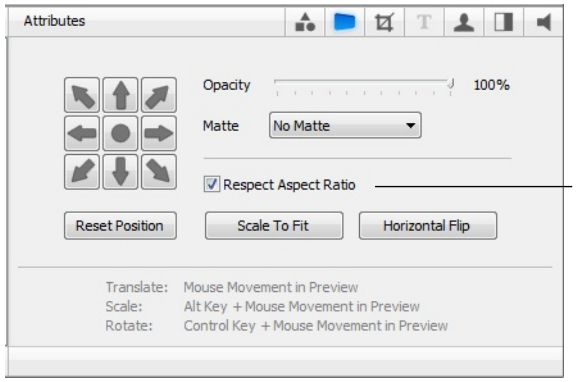

# Matte

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.)



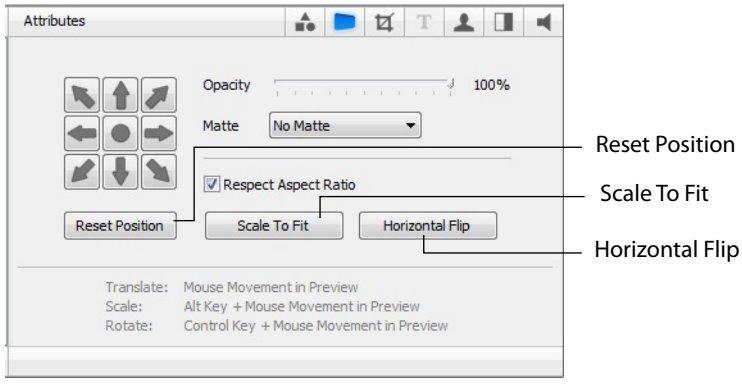
# Aspect Ratio

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.



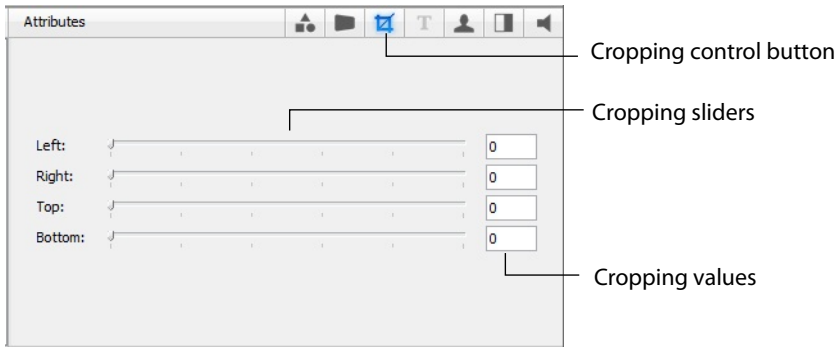

# Reposition Buttons

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.



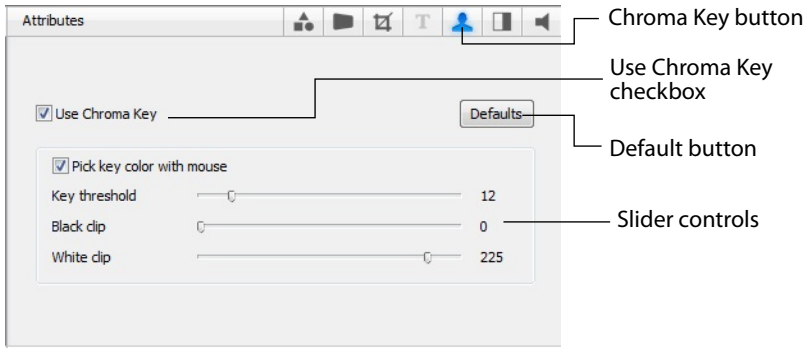
# Shot Editor Cropping

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.

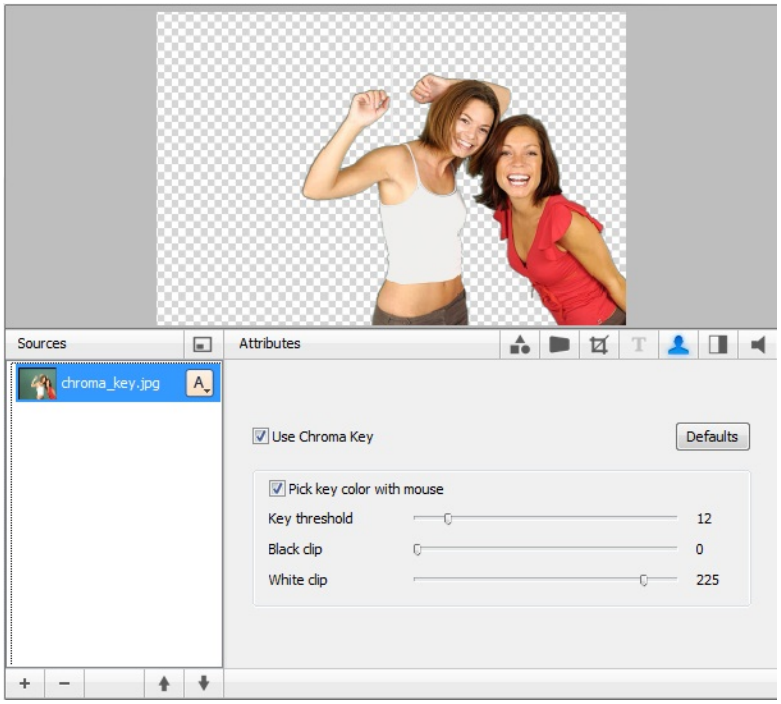
## Good Camera

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, a USB 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

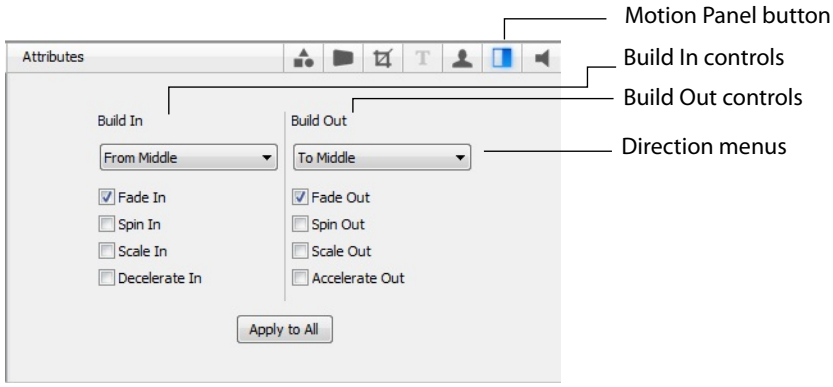
If you are keying video from disk and not capturing it live, make sure the High Quality Video option is checked in the Advanced Preferences Panel. This forces Wirecast to decode the video from disk in the best quality possible, giving the Chroma Key the best data possible for keying. Wirecast warns you 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 Built 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.

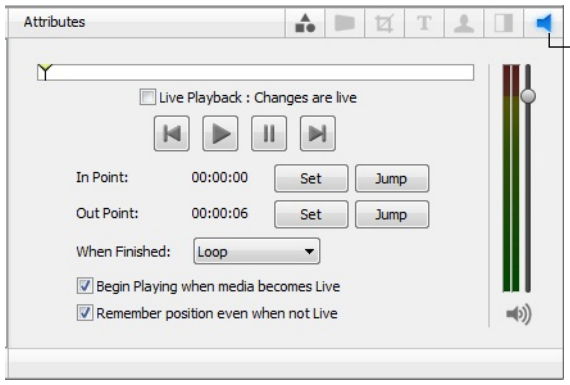
**Scale In / Scale Out** Checking these checkboxes causes an object to be added or removed in a scaled fashion.

**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.




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 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.

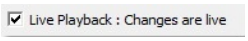
The vertical slider sets the audio level and the two meters display it in stereo (left and right). Click the Master Audio Mute icon to mute the audio of your broadcast. Click it again to un-mute it.

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.




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.

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**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.

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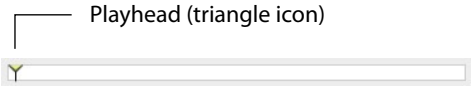
# Scrubbing

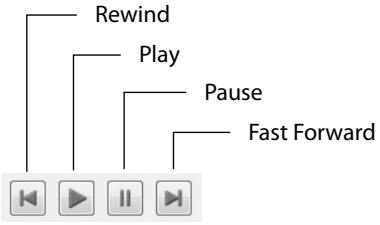
The Scrubbing slider enables you scrub (scan) back and forth through your media. The triangle icon in the scrubbing slider is called the playhead.

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.




# 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.

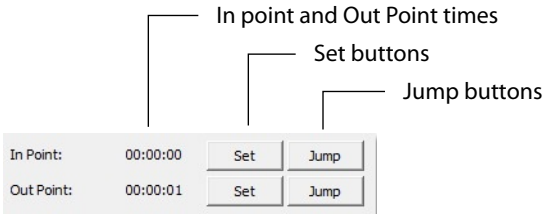



# In and Out Points

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.




## 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).

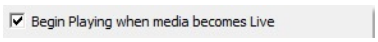
You have three options:

- **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.


## Begin Playing Control

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

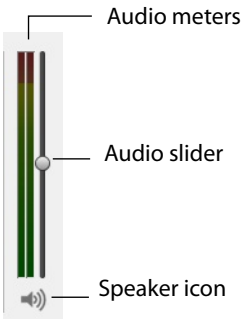


# Remember Position Control

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.


# 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.



# Appendix A: Making Great Presentations

## Introduction

These topics provide helpful information about how to prepare for creating great presentations.

### Topics



## 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 will can avoid 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.

If your viewers have older versions of QuickTime (version 5 for example), you may want to use a different Encoder than the default. Using the Sorenson 3 Codec for version 5 of QuickTime may be the most effective solution.

## 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 *Setting Encoder Presets* for information on changing the encoder settings.)

# Appendix B: Hardware Recommendations

## Introduction

These topics describes hardware requirements and features for use with Wirecast.

## Topics



## Operating System

Using a 64-bit operating system is recommended. When using a 32-bit OS, the x264 (by default) is less efficient in CPU usage to conserve memory.

## FireWire

FireWire is a hardware protocol that you can use to connect devices (cameras, hard drives, etc.) to your computer. It is important to understand that saturating your FireWire bus (using up all available bandwidth) can lead to problems in Wirecast, resulting in choppy audio and video.

## Bandwidth Limits

There is an absolute limit to the bandwidth available to your FireWire devices (400 or 800 megabits per second). If the sum of your devices goes over the limit, you saturate (use up) all the available bandwidth. For example, if you have a camera attached to the FireWire bus and you saturate the bus, the output contains dropped frames which produces choppy video.

If you use a FireWire hub and plug several devices into the hub, you share the maximum bandwidth on the FireWire bus. Adding a hub does not add bandwidth to the bus, just more places to plug in devices. Likewise, you might have several FireWire ports on your computer, but they are often all connected to the same bus. You have to add a separate FireWire card to increase the bandwidth.

## Bandwidth Use

If you have a hard disk connected to a FireWire hub and also have a camera connected to the same hub, it may appear to work but the bus can still become saturated. For example, when new email arrives and your email program accesses a file on your FireWire drive, it can cause FireWire saturation.

Be mindful of this limitation when connecting hardware to your computer. Just because your setup works when you first put it together does not mean it will always work. Experiment with your setup and make sure that you have enough FireWire bandwidth to share all of your devices without experiencing choppy video.

Normally, a camera requires around 25 Mbps to deliver audio and video to Wirecast. However, some cameras may require 100 Mbps or more.

# Universal Serial Bus (USB)

Many cameras use USB instead of FireWire to connect to the computer, and the same bandwidth problems apply to USB connections. Keep as few devices on the bus as possible to prevent saturation, and keep in mind that even if you have multiple USB sockets they are often attached to the same USB bus. The USB devices dialog can be used to identify devices sharing a bus or buses with available ports. Standard USB supports up to 12 Mbps and high-speed USB supports up to 480 Mbps.

# High Definition Video (HDV)

Always use the best quality camera you can get. Even if your viewers are only going to see 176×144 (G3 Mobile) an HDV camera is going to give you much better quality than a USB camera.

Although you can achieve extremely high quality video using HDV, there are some limitations in using it. Most of these limitations are due to resource consumption. Even if you have multiple busses, to use more than one HDV camera with Wirecast you need a high-end (fast and powerful) computer. HDV images are so large they stress all

components involved in your production (memory, video memory, video fill rate, bandwidth, etc.).

## HDV Cameras in DV Mode

If you only have HDV cameras, and you need to use several cameras, put your secondary cameras in DV mode. This saves bandwidth. When you switch your HDV camera to DV mode, your camera acts like a DV camera. Although you do not get HDV quality, you get much higher quality than your average DV camera because most HDV cameras have very high quality CCD elements in them.

---

**Note:** When working with HDV sources, you may find there is up to two seconds of delay from the video first being captured by the camera, to it showing up in Wirecast. This is a hardware limitation of the HDV connection and cannot be corrected by Wirecast. Many HDV cameras also have a lower resolution DV mode that, when used, will not have the HDV delay.

---

# DV Cameras

Generally, you should not attach more than one camera to a FireWire or USB bus, even when using high-speed busses. The main reason for this is that most cameras will conflict with other devices on the same bus. For example, on a FireWire bus each camera is expected to negotiate the channel it will use to transmit. Some cameras do not negotiate at all or ignore the results of the negotiation and a conflict will result. This causes problems in Wirecast because the incoming signal is from two cameras.

Also, since some cameras randomly pick a transmission channel, there is always a chance that two will choose the same channel.

# Sleep Mode

When a computer puts a monitor in sleep mode (screen saver mode) it also turns off the video card. Since Wirecast uses your video card for streaming, your stream is interrupted when the computer enters sleep mode. Wirecast automatically tells the operating system not to put your monitor in sleep mode, but if you force your monitor into sleep mode, your stream will stop.

---

**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.

---

# S-Video & 2nd Display

You can select an external display for the output of Wirecast. For example, if you have a projector connected to your computer using S-Video, select that projector from the Broadcast menu to display the output of Wirecast on it. If you have a dual-head graphics card, you can select a second monitor to display Wirecast Output.

---

**Note:** If you have two graphics cards, Wirecast may not be able to display to any devices (monitors) on the second graphics card.

---

# Configure Devices

Some devices (cameras, etc.) can be configured. Choose the device you want to configure from Configure Devices in the Media menu.

---

**Note:** 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.

---

# Game Capture

When using Wirecast to capture games, the following is recommended:

- Use *Local Desktop Presenter* in game mode
- Stream at 60fps. This is set in the *The Encoder Presets Window*.
- Set the Canvas framerate to 60fps. (See *Canvas Size*).
- Ensure that Wirecast and your game are on the same GPU
- If using a full screen game, check the Disable Vertical Sync option in *Preferences* > *Advanced* (go to *Advanced* settings)

# Appendix C: Installation

## Introduction

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

### Topics



## Installing

To install Wirecast, follow these steps:

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

---

**Note:** If you have a previous version of Wirecast installed on you computer, you must first uninstall it before installing the new version of Wirecast.

---

2. Run the installer (.exe) program and follow the instructions provided

---

**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.

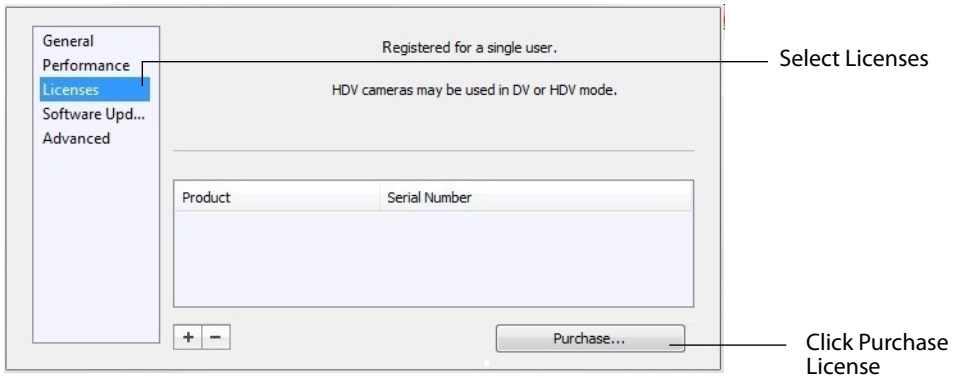
---

3. If you have an older version of Wirecast already installed on your computer, the installer upgrades to the newer version. Agree to the license terms and follow the instructions displayed by the installer program.

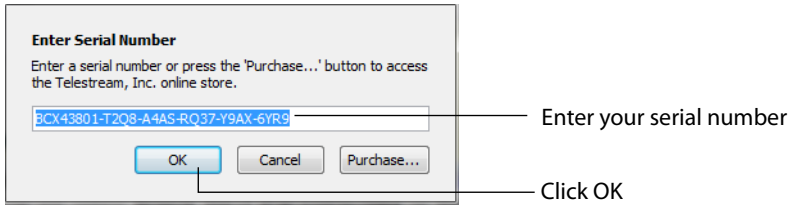
# Activating

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 File menu, select *Licenses*, then click *Purchase License*.




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




4. When the unlocked message displays, click OK.
5. Close the Preferences window.

Your Wirecast program should now be fully activated.

# Uninstalling

To uninstall Wirecast, follow these steps:

1. Run the Wirecast installer (.exe) program.
2. The installer asks if you want to repair or remove the existing version. Select Remove to uninstall the existing version of Wirecast.

# Appendix D: Acknowledgements

## Acknowledgements

### Overview

Portions of this software may utilize the following copyrighted material, the use of which is hereby acknowledged:

- *Darwin streaming server*
- *FFmpeg Project*

### Darwin streaming server

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