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# Wirecast 9.0 Tutorial for Mac

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# Installation

## Introduction

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

## Topics

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

## Installing

To install Wirecast, follow these steps:

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

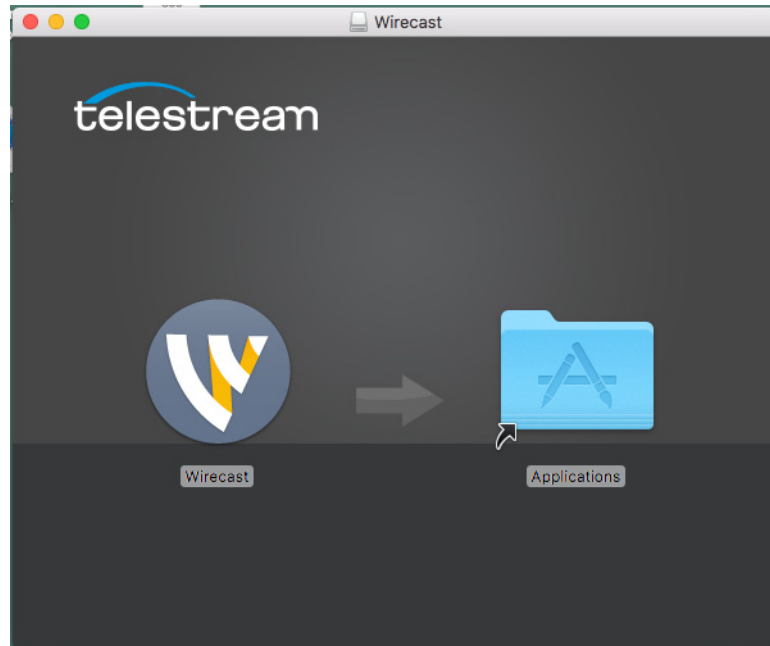
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**Note:** During installation, you will be asked if you want to install the Virtual Microphone feature. If you do (recommended), check the displayed check box and continue the installation. Installing Virtual Microphone requires administrative rights.

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2. Run the installer (.dmg) program.
3. Click Agree to the license terms.

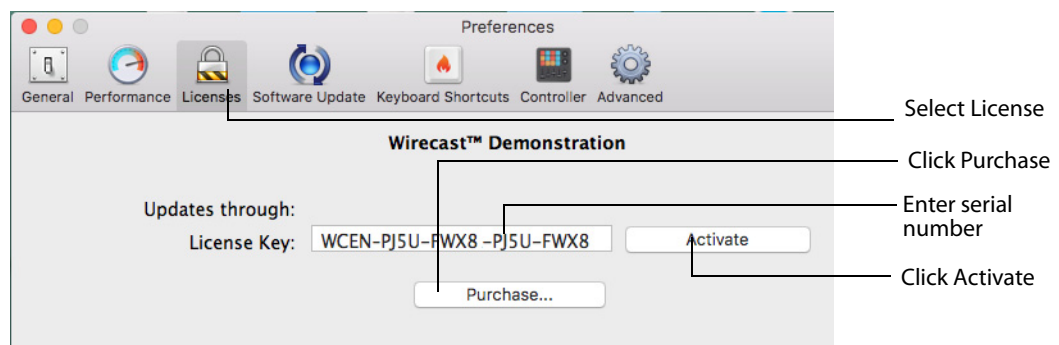
4. Open the Wirecast in the downloads folder, then click and drag the icon into the Applications folder. If a version of Wirecast already exists, the installer asks you if you want to replace the previous version.



## Activating

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

1. Run the Wirecast program.
2. Select *Preferences* from the Wirecast menu, select *Licenses*, then click *Purchase*. Once you purchase and obtain your license number, enter it into the Serial Number field and click *Activate*.



3. Close the Preferences window.

Your Wirecast program should now be fully activated.

# Uninstalling

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

## System Requirements

### Operating System

- Minimum: MacOS Sierra, Mac OS X El Capitan
- Recommended: MacOS Sierra
- (Wirecast does not support OS X Yosemite or previous versions)

### Processor

- Minimum: i5 dual-core @ 2.3GHz  
**NOTE:** May be insufficient for 1080p+ or 60 fps workflows
- Recommended: i7 quad-core @ 2.8GHz+

### Memory

- Minimum: 4GB RAM
- Recommended: 16GB+ RAM

### Hard Drive

- Minimum: 2GB, 7200 RPM for record to disk  
**NOTE:** Additional hard disk space required for record to disk
- Recommended: 500GB+, Solid State OS Drive

### Graphics Card

- Minimum: Intel HD, DirectX 11 capable  
**NOTE:** Insufficient for advanced Multi-Viewer workflows
- Recommended: Nvidia GeForce or AMD Radeon, 1GB+ video memory

### Internet Connectivity

- Minimum: Open HTTP/HTTPS port 80, RTMP port 1935, port 7272 for Remote Desktop Presenter
- Recommended: If behind a firewall, check with your CDN for any sites to whitelist

### Desktop Presenter

Use the remote version of Desktop Presenter 2.0.8 with Wirecast. It is available as a separate download at: <http://dynamic.teletstream.net/downloads/download-desktop-presenter.asp?prodid=desktoppresenter>.

### Rendezvous

Wirecast Rendezvous uses WebRTC technology that can be very resource intensive. For the best experience, we suggest considering the following when choosing hardware.

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**Note:** The following recommendations are based on a single simultaneous stream of 720p30 x264 @ 4.0Mbps.

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#### Bandwidth

- Add 4 Mbps
- Add 5+ Mbps

**NOTE:** To maintain reliability, bandwidth per guest decreases as more are added

#### Processor

- i5 quad-core
- i7 quad-core

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**Note:** These are minimum recommended processors. More demanding workflows may require a more capable CPU.

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#### Internet Connectivity

- Requires internet connectivity with HTTP/HTTPS port 80, and RTMP port 1935 open for streaming, Remote Desktop Presenter requires opening port 7272.
- An internet connection is recommended for Wirecast license activation.
- For lowest quality (240p) streaming an upload rate of at least 650Kbps is required.
- 720p streaming requires an upload rate of at least 2500 Kbps.
- 1080p streaming requires an upload rate of at least 4500 Kbps.
- Consider lowering your canvas frame rate and/or streaming resolution to lower CPU usage.
- It is recommended that an upload rate of at least double the desired rate be available.
- Solid State Drive or fast RAID array recommended for ISO Recording and Replay functionality. Actual data rates will vary depending on quality level selected for ProRes recording, as well as the resolution and frame rate selected.
- For ProRes recording please refer to Apple's ProRes data rate specifications

#### Recommended Hardware Specifications

- Intel Core i3 CPU @ 1.7 Ghz or higher recommended for 540p streaming with x264 @ 30 fps.
- Intel Core i5 CPU @ 2.5 Ghz or higher recommended for 720p streaming with x264 @ 30 fps.
- Intel Core i7 CPU @ 3.0Ghz or higher recommended for 1080p streaming with x264 @ 30fps.

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**Note:** 60 FPS streaming will result in increased CPU usage and a high bit rate (4Mbps or higher) for good quality.

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- Minimum 4GB RAM, 2GB free hard disk space. Additional hard disk space required for recording to disk.

#### **Hardware Accelerated Encoding Requirements**

- Intel Quick Sync Video encoding requires an Intel CPU with an Intel® QuickSync Video core. List of Intel CPUs supporting QuickSync.
- NVIDIA NVENC encoding requires an nvidia GPU with Kepler architecture or newer. NVIDIA only maintains a general list of supported GPUs.
- Apple Hardware Accelerated H.264 encoding requires a Mac with an integrated Intel GPU.





# 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 stream 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 streaming 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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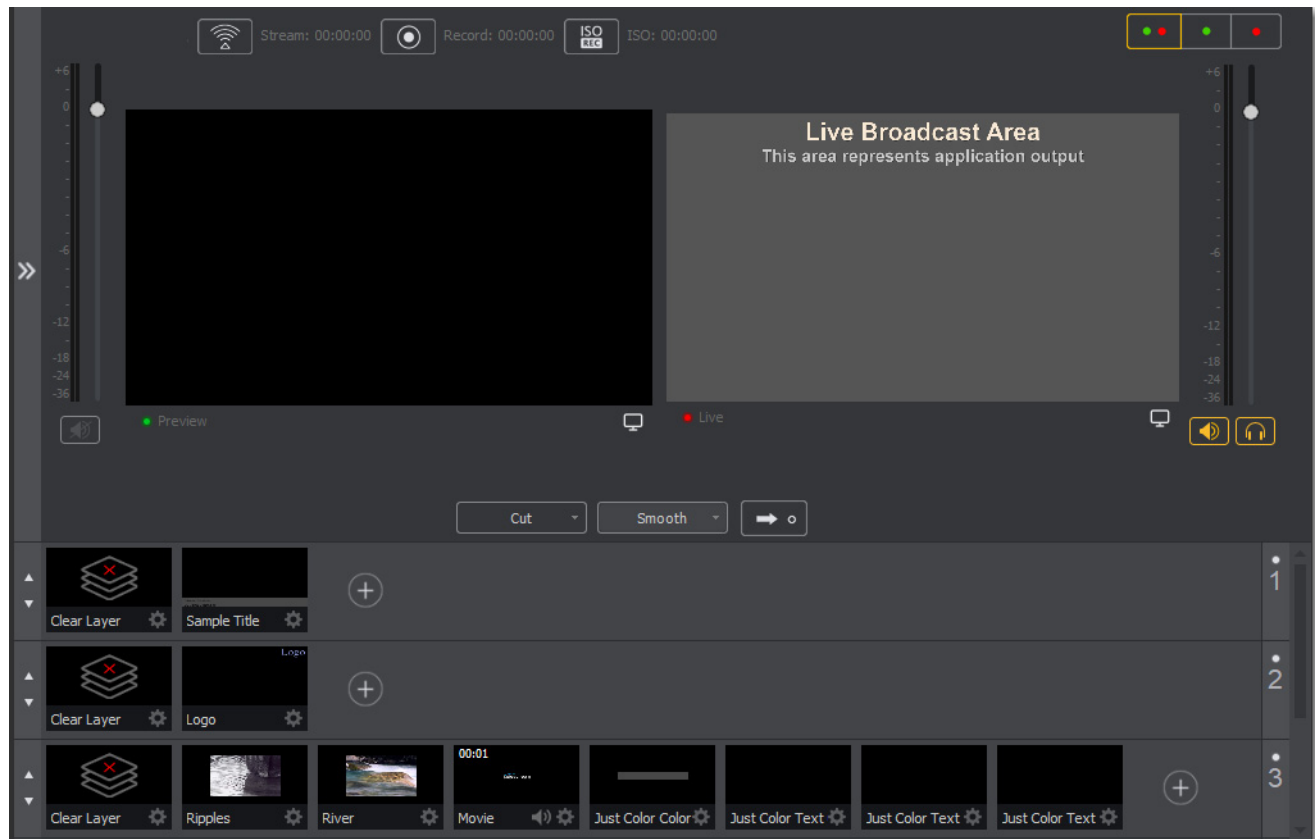
**Note:** For licensing information, select *Preferences* from the Wirecast menu, select *License*, then click *Purchase*. Or, you can contact Telestream at: [desktopsales@telestream.net](mailto:desktopsales@telestream.net).

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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 streaming 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.



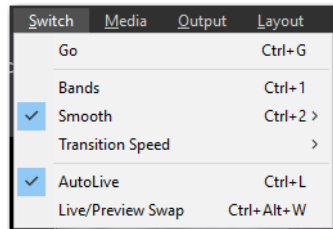
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**Note:** If you are running the tutorial with Wirecast in demonstration mode, the Wirecast logo appears from time to time and audio output has a periodic voice-over.

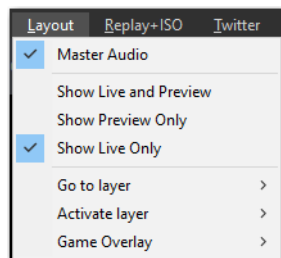
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## Tutorial Prep

To prepare for this tutorial you need to make several changes. Under the Switch menu, make sure Smooth and AutoLive options are turned on (check mark displayed), and *Live/Preview Swap* is turned off (no check mark displayed).

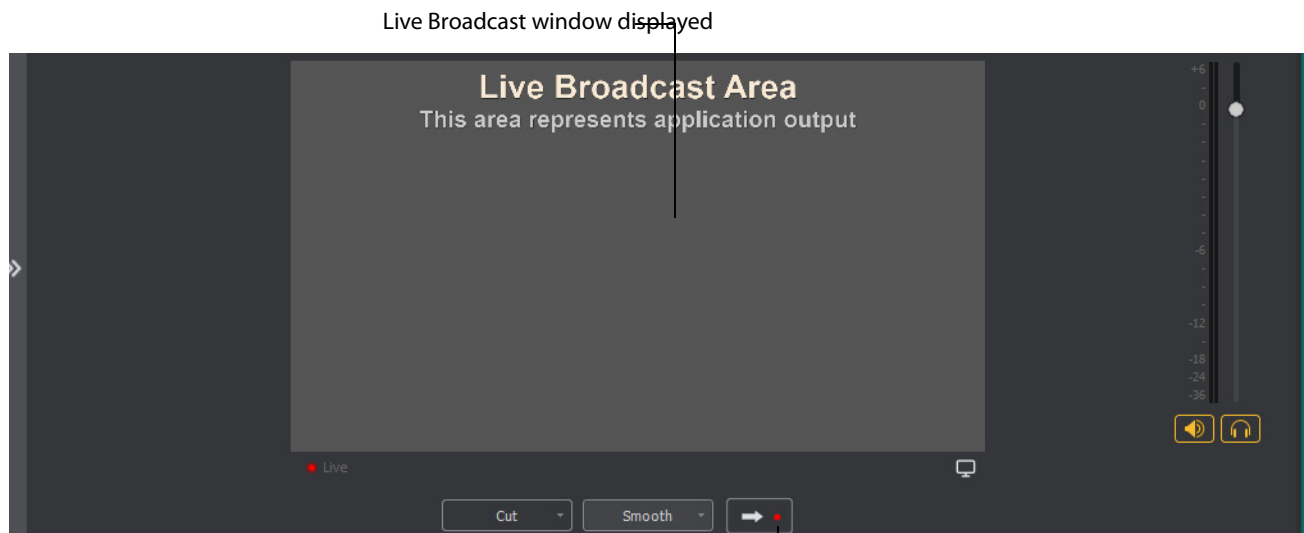


Under the Layout menu, make sure *Show Live Only* is selected (check mark displayed).



All of these options will be changed later in the tutorial.

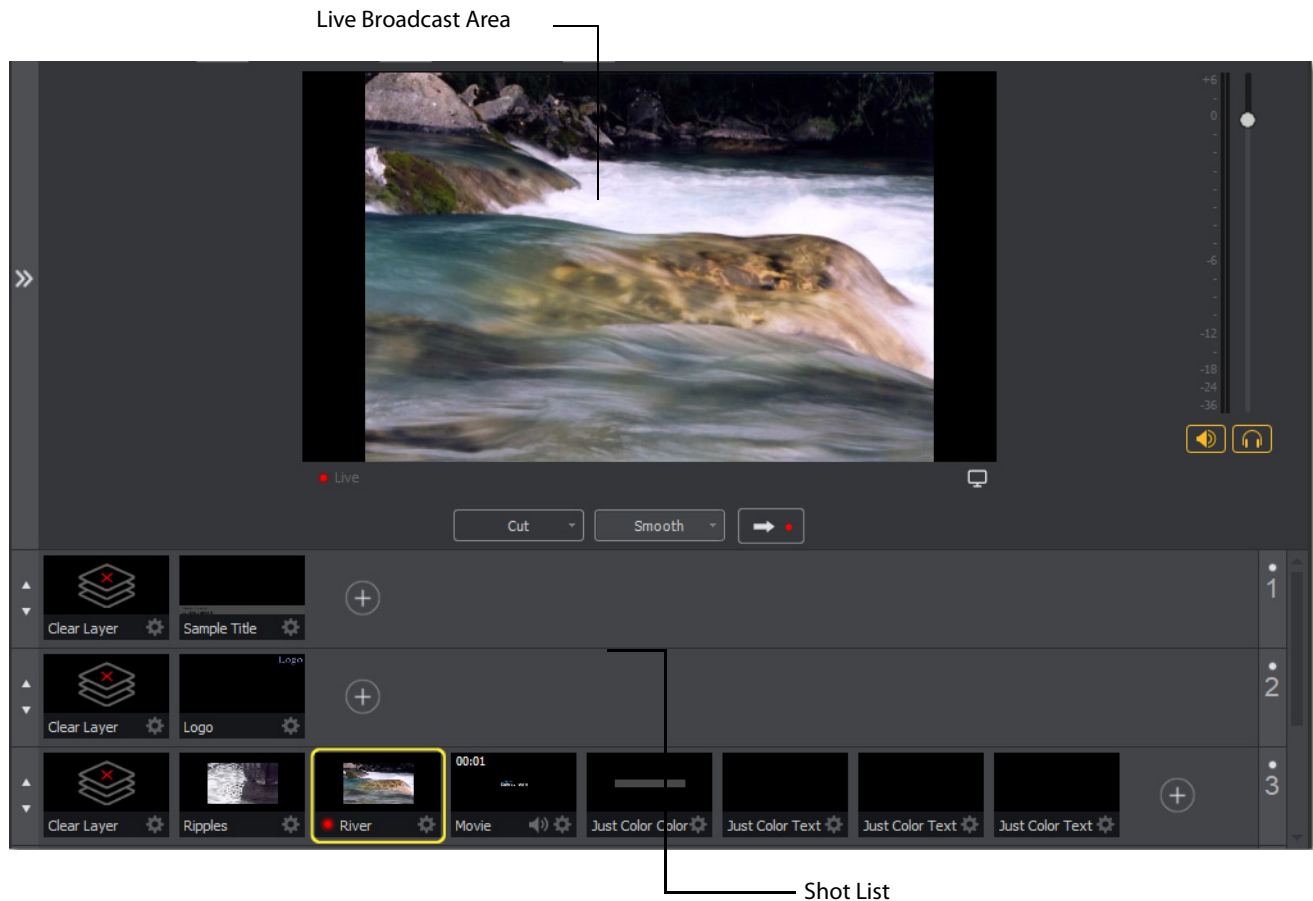
The Wirecast Main window shows the AutoLive LED turned on and the Live Broadcast window (only) displayed.



AutoLive LED on

## The Main Window

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



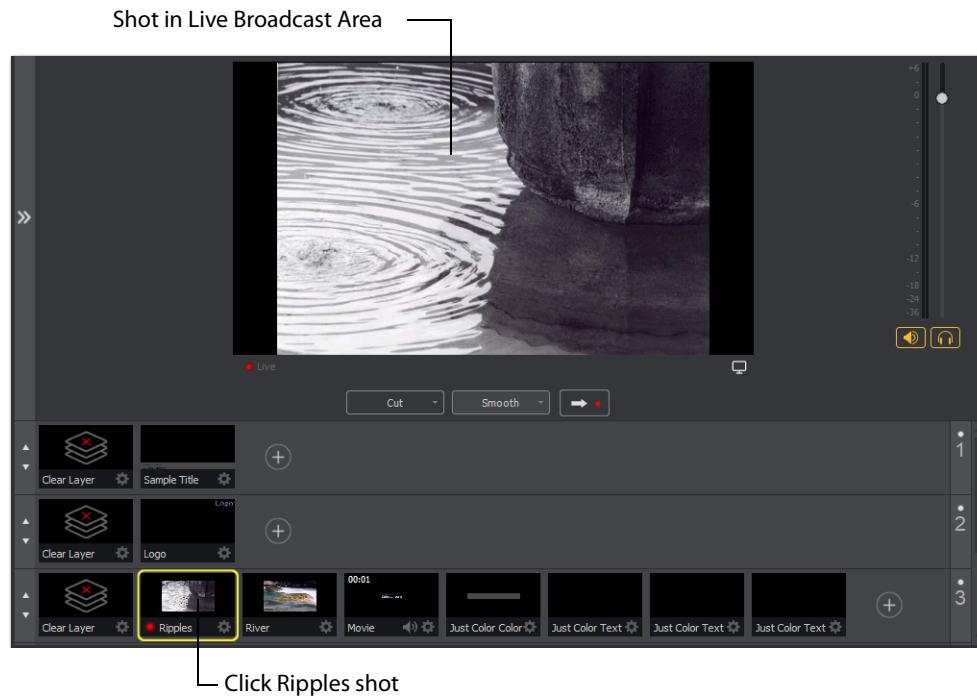
### What Is a Shot?

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

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

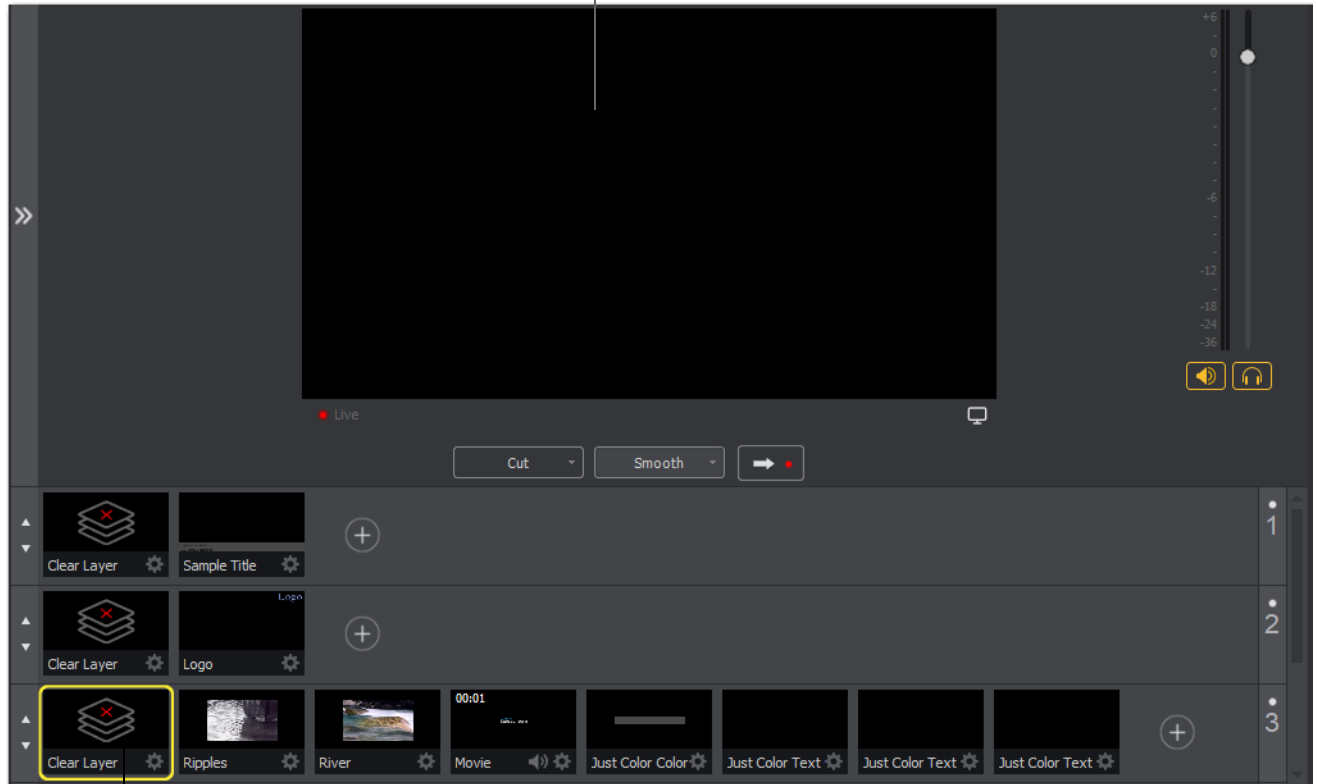
## Switching Between Shots

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 *Clear Layer* and the Ripples image fades to a blank screen. The Clear Layer shot enables you to display a blank shot, which is sometimes needed.

Blank shot in Live Broadcast Area

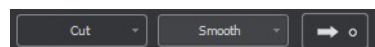


Click Clear Layer

## Transitions

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

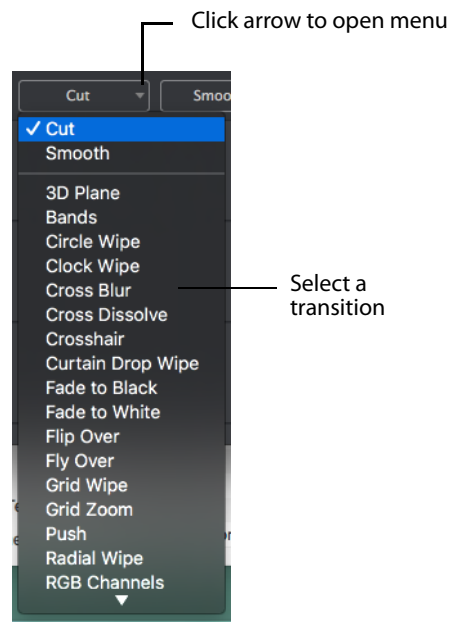
Transition controls are located just below the Live Broadcast Area where the two default transitions are shown: *Cut* and *Smooth*.



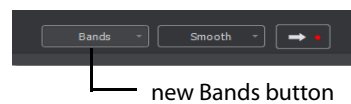
When *Cut* is selected, transitions are executed immediately. When *Smooth* is selected, transitions fade in and out (as demonstrated above).

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

to be assigned to that button. You can also click the transition button itself and drag the mouse downward until the menu of selections is displayed.

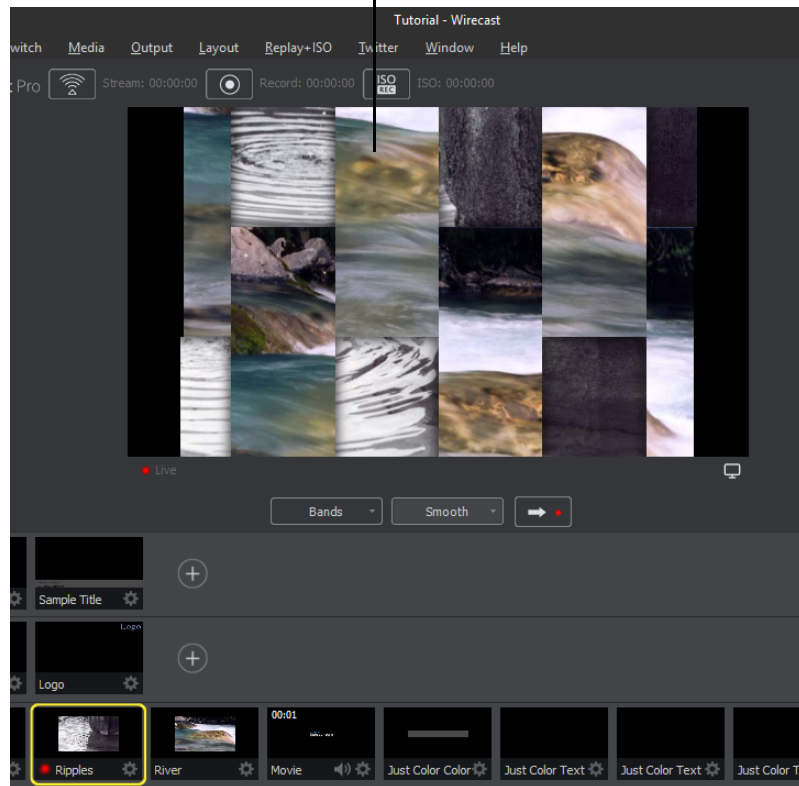


For example, to change the left transition button from *Cut* to *Bands*, click the *Cut* button and drag downward until the menu appears. Select *Bands* from the menu. *Bands* should now be displayed as the left button.



Now click back and forth between the River and Ripples shots using Bands (Bands button selected).

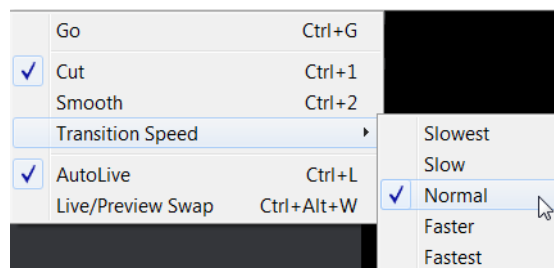
Bands transition



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

## Transition Speed

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





## Go Button

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



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

## Layers

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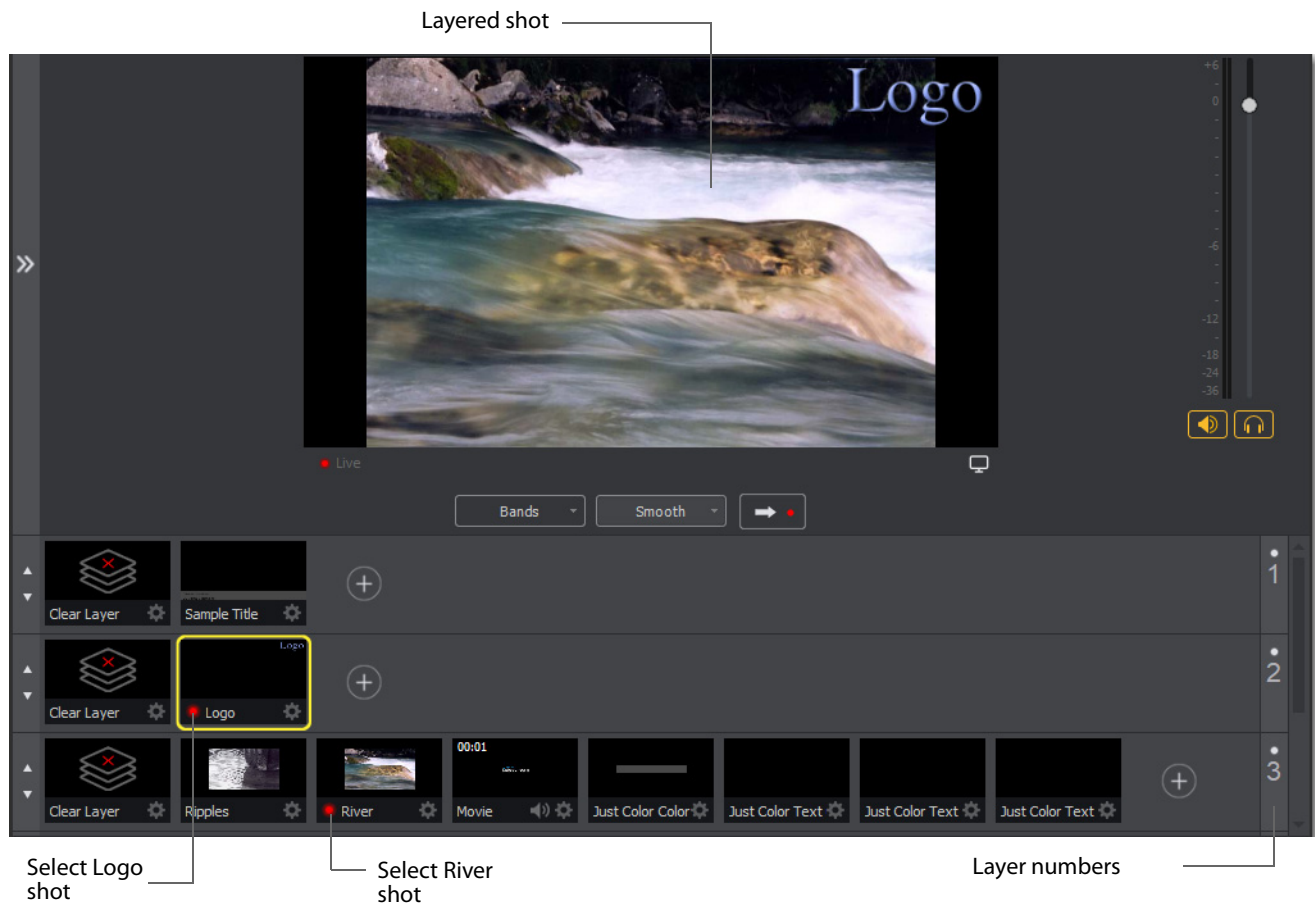
**Note:** Before you start this section, please select Smooth as your transition.

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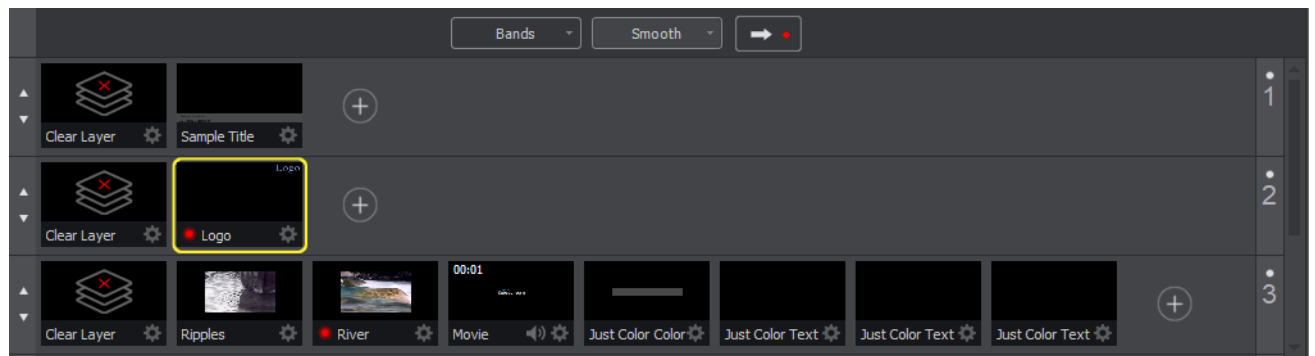
Wirecast enables you display several shots in the Preview and Live windows at the same time by rendering them one on top of another according to Wirecast's Layer system. This is an excellent way to add and remove objects in your broadcast.

Wirecast displays five layers in the Main Shot List window. They are numbered 1 through 5 along the right side of the window. Each layer contains shots that can be selected by clicking a shot. A red LED 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).

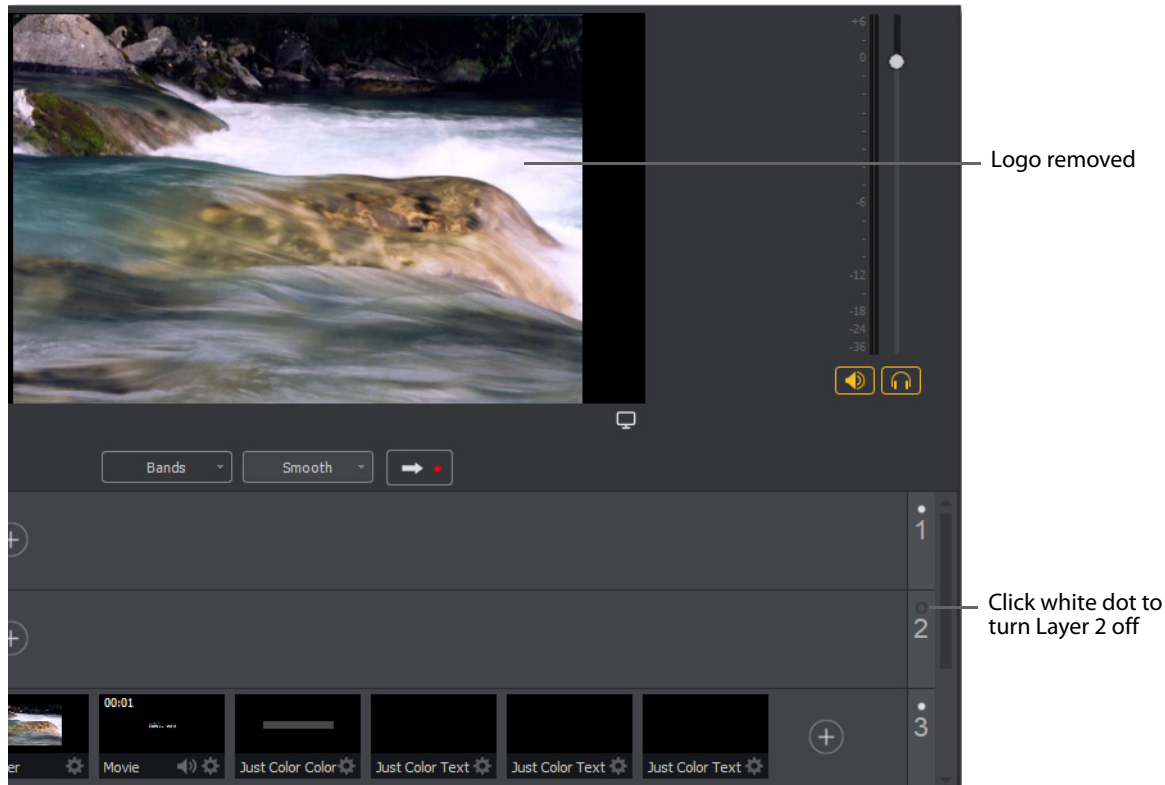
Select the Logo shot in layer 2 and the River shot in layer 3. The result is a layered shot containing both images.



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 Layers 2 and 3. Clear Layer, Ripples, River shots (and more) are on Layer 3, but Layer 2 has only a logo and a Clear Layer 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 and restore the Logo image.

## Auto Live

So far in this Tutorial, Wirecast has been running in AutoLive mode. This means that any selection you make in the Shot List is automatically placed into your Live Broadcast window. 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 for you of how it looks before broadcasting the new shot).

### Turn AutoLive Off

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



For this tutorial, make sure AutoLive is off by un-checking *AutoLive* in the Switch menu. When you do this a dialog box is displayed informing you that AutoLive is off and transitions must be made using the Go button. Click *OK* in the dialog box to continue.

Try clicking the Ripples and River shots, and notice that nothing happens in the Live Broadcast window because AutoLive is turned off. Now click the Ripples shot and then click the Go Button. The Ripples shot is immediately placed into the Live Broadcast window. Click the River shot and, as expected, nothing happens. Click the Go button and the River shot replaces the Ripples shot in the Live Broadcast window.

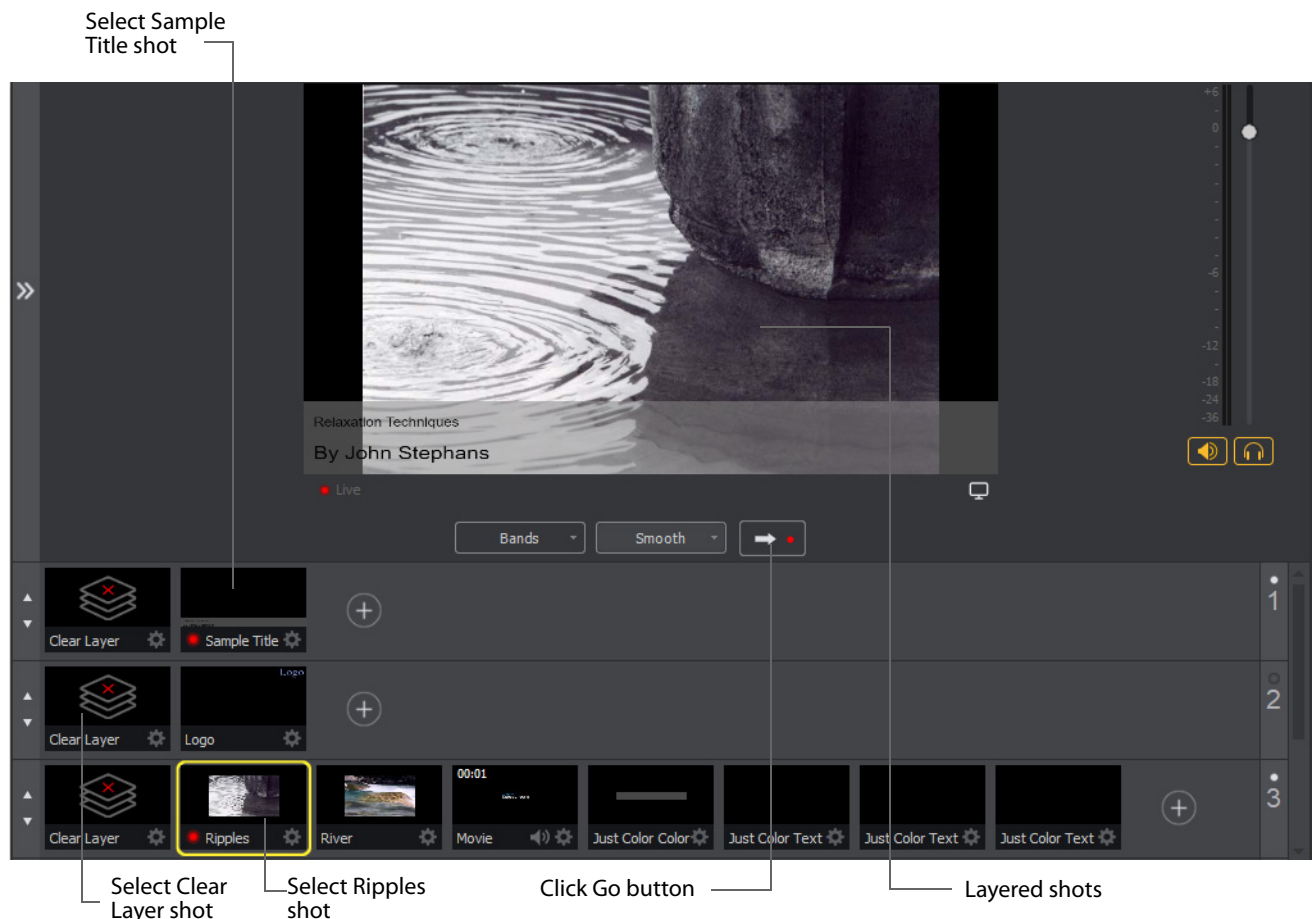
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**Note:** When AutoLive is off, you must always click the Go button (or press the Command+G keys) to display the selected shot in the Live Broadcast Area.

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## Multiple Changes

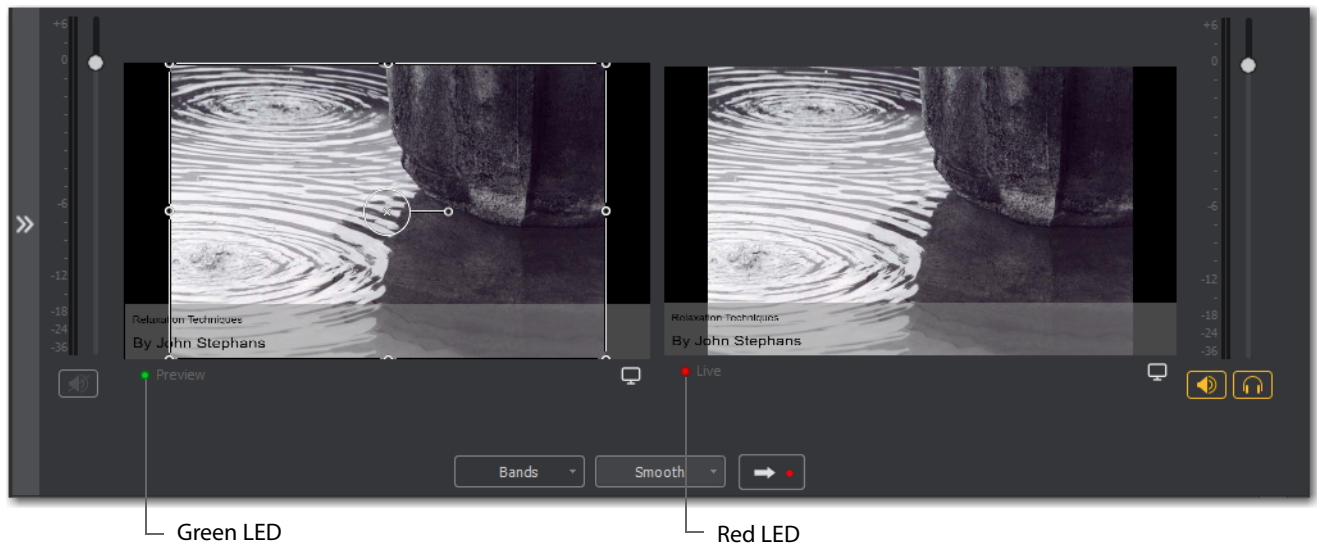
The benefit of having AutoLive off is that you can make several changes to your shot first, and then have all changes placed into the Live Broadcast window at the same time. To do this, first verify that AutoLive is off. Click *Sample Title* in layer 1, click *Clear Layer Shot* in Layer 2, and then click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



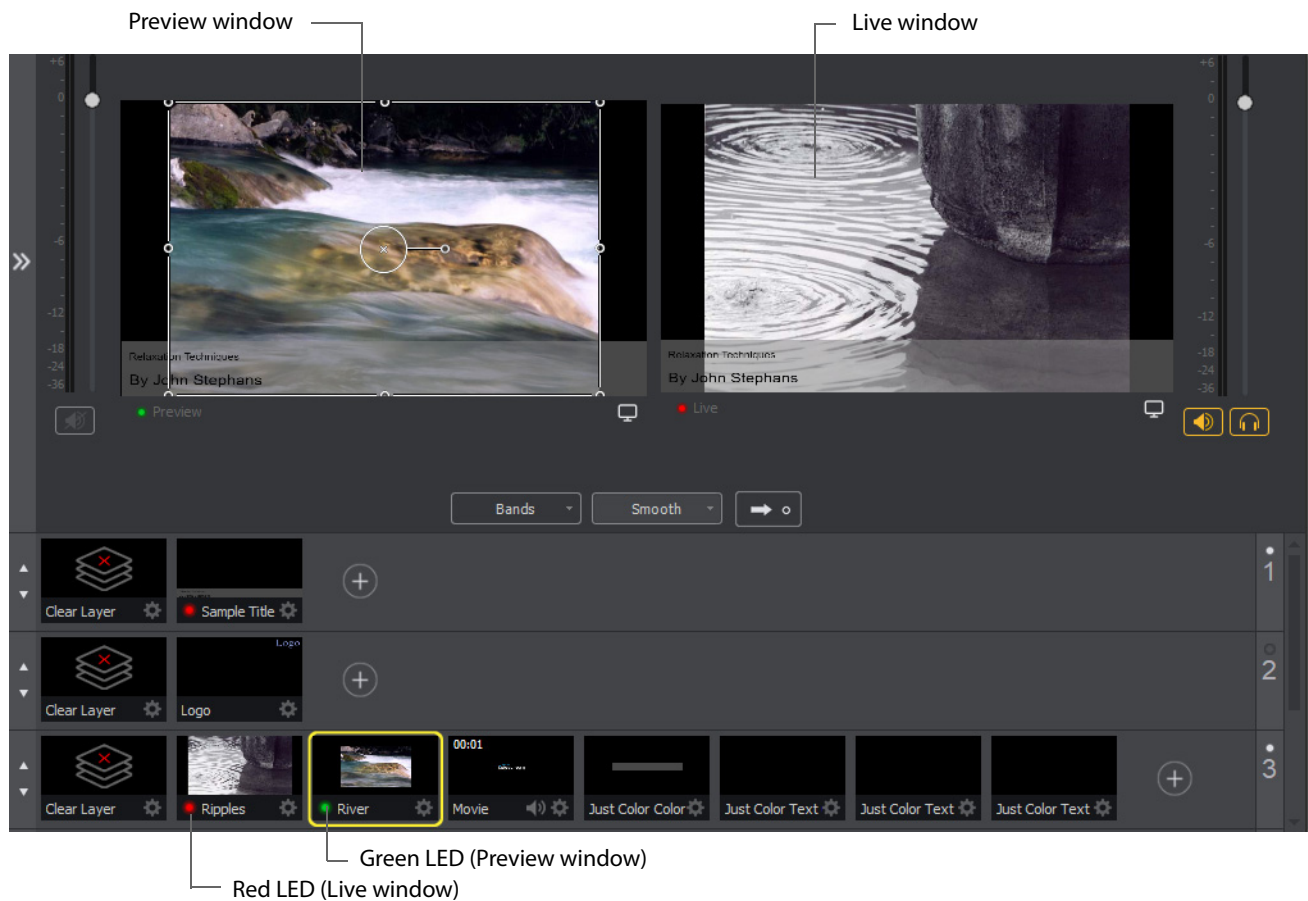
## Preview

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.

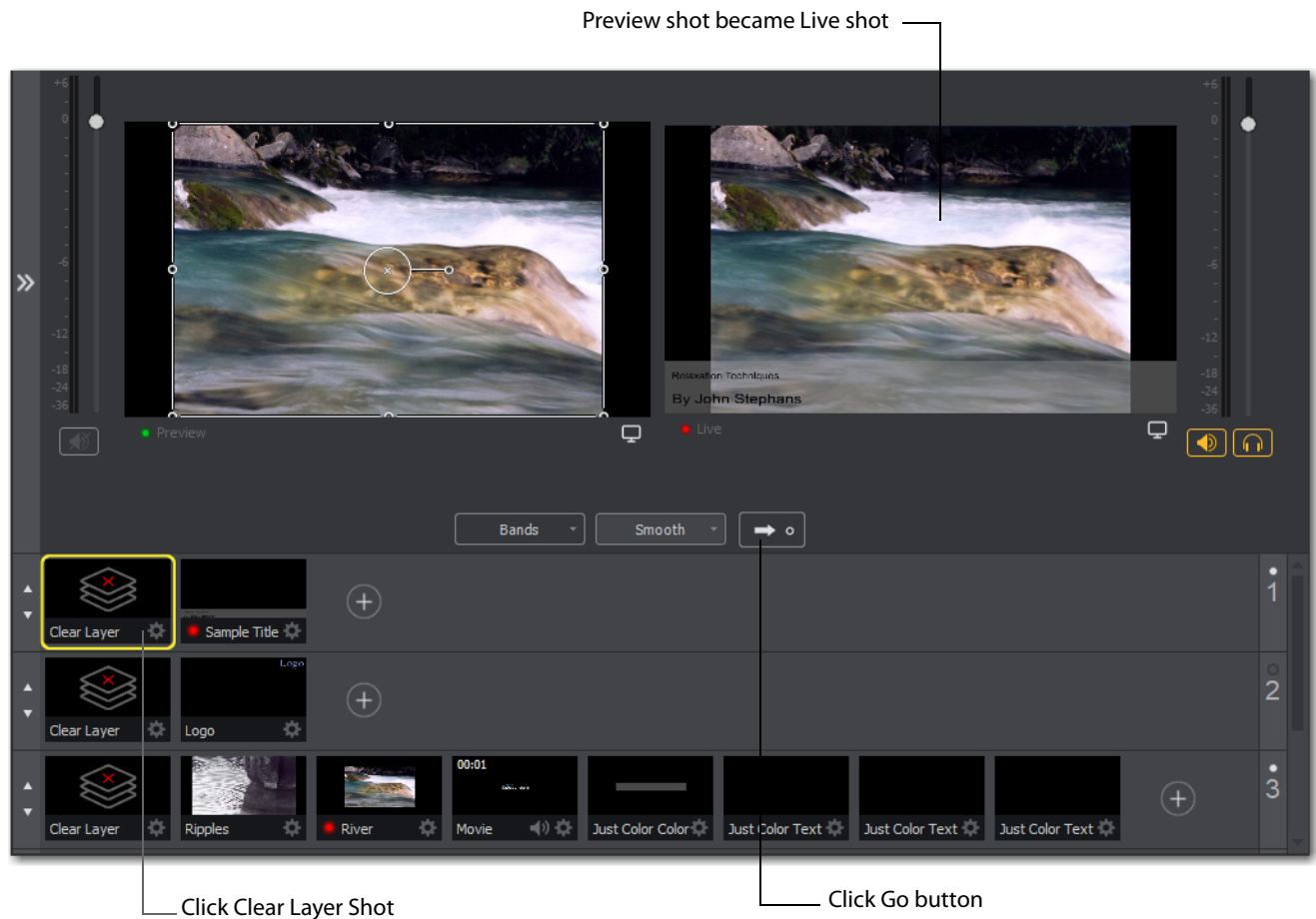
Select *Layout > Show Live and Preview* from the Main menu. A preview window is displayed to the left of the Live Broadcast window. The Preview window uses a green LED to identify it. The Live Broadcast window uses a red LED to identify it. These two colors (green and red) are also used to identify which shots are associated with the Preview or Live windows.



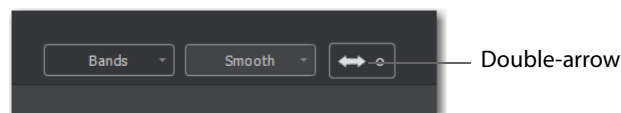
Click the River shot on Layer 3. The River shot is displayed in the Preview window. When shots are selected they display a green or red LED to indicate selection for Preview or Live windows.



Now click the Go button to place the River shot into the Live window. Click the Clear Layer shot in Layer 1 to remove the title from the River shot in the Preview window.



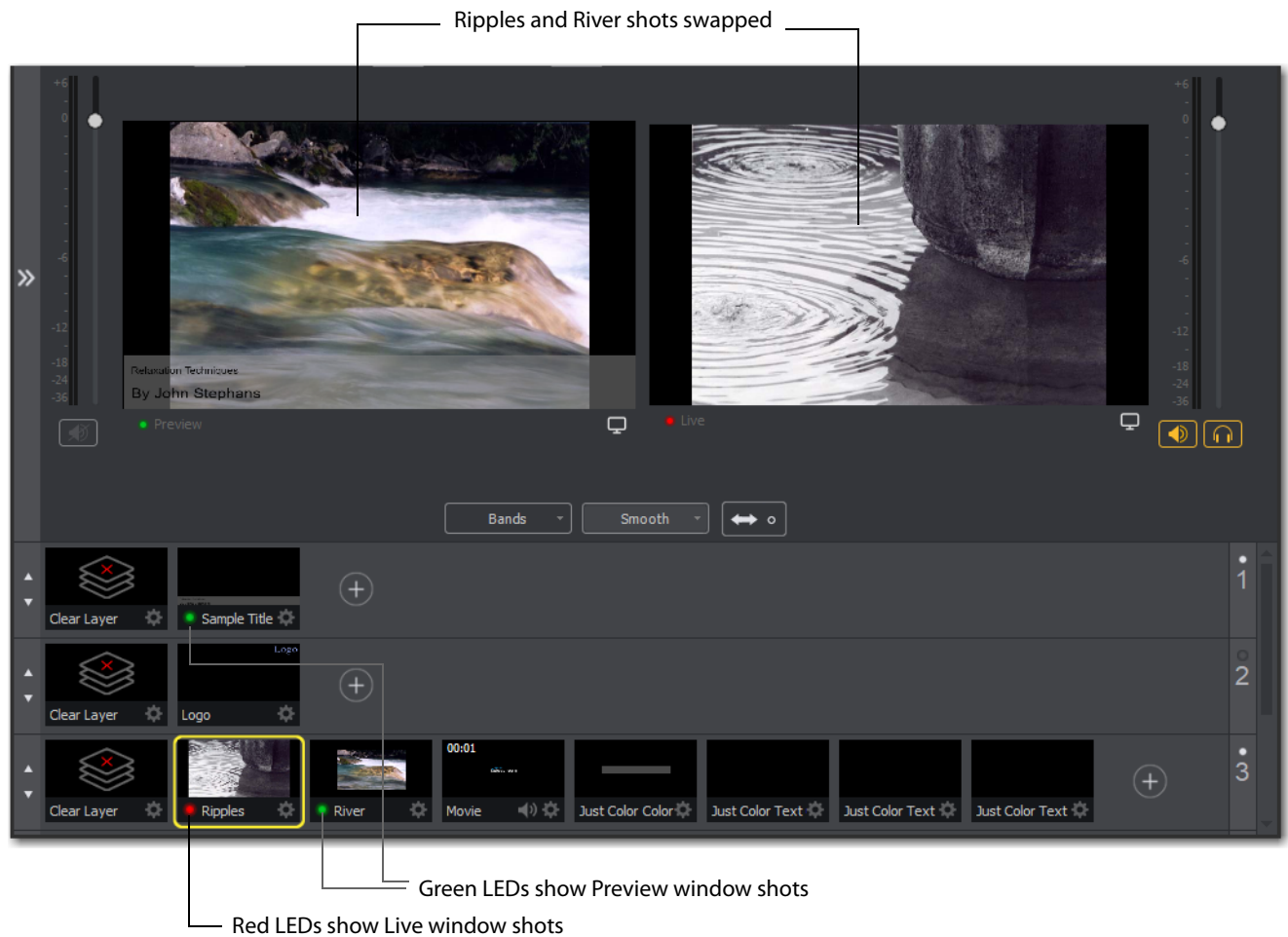
Turn on the Live/Preview Swap option by selecting Switch > Live/Preview Swap (check mark displayed). Notice that the Go Button displays a double-arrow, indicating that the Live/Preview Swap option is on.



Select the Ripples shot and click the Go button to place the Ripples Shot into the Live window. Notice that the Ripples and River shots have swapped (between Preview and Live windows). The shot LED's have also changed color. The green shot LEDs indicate all shots included in the Preview window and the red LEDs indicate the shots included in



the Live window. This lets you know what your last Live window looked like as you prepare your next shot in the Preview window.

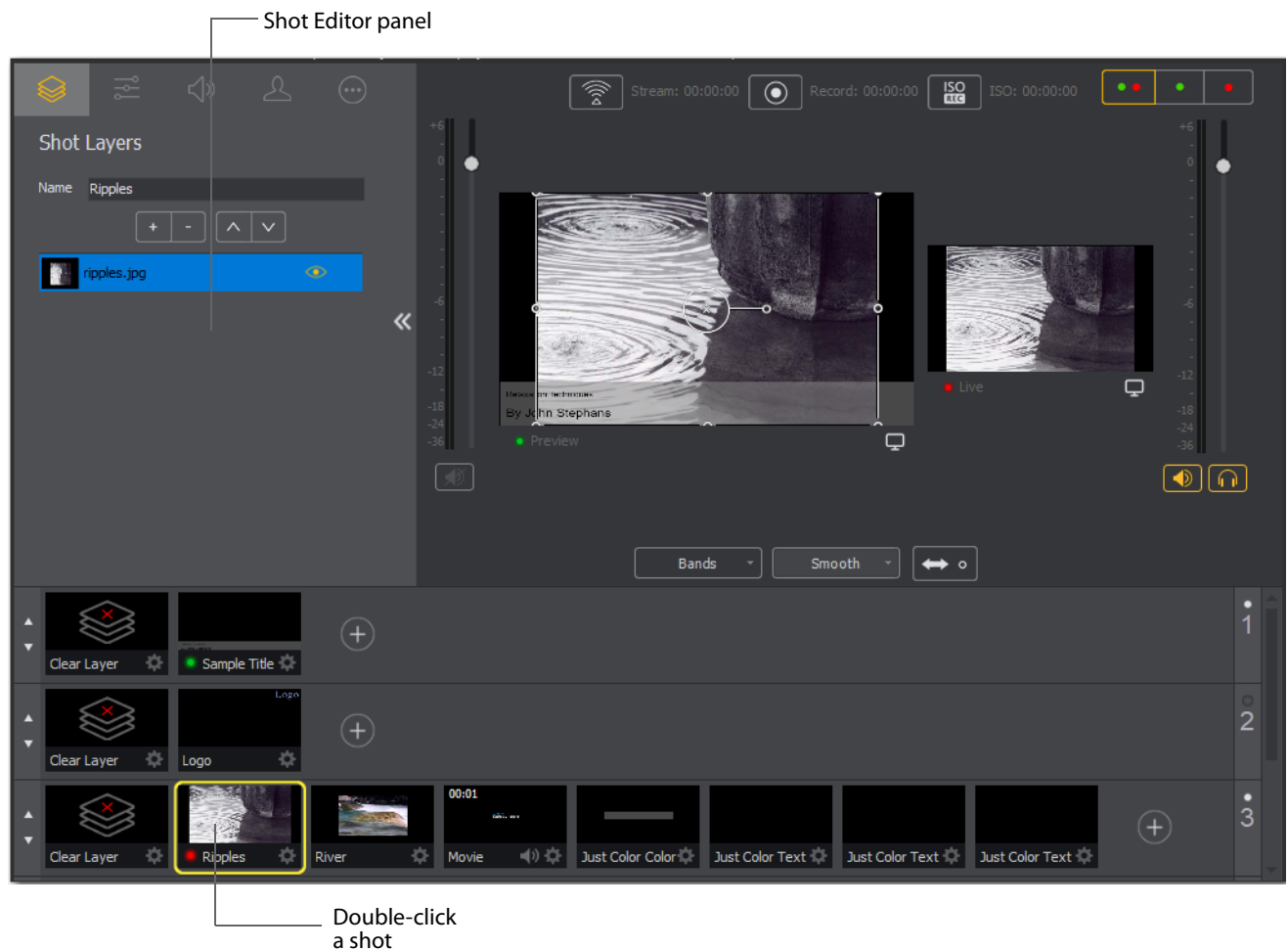




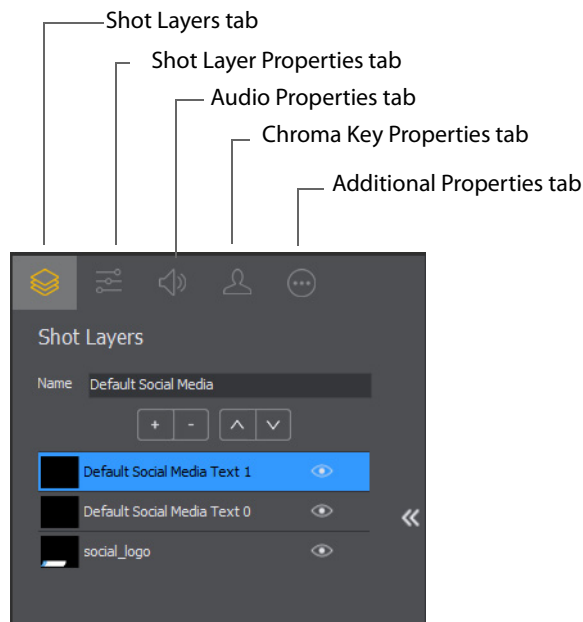
## Tutorial 2: Editing Shots

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.

To edit a shot, double-click its icon in the Shot List. This opens the Shot Editor panel.



The shot editor has five tabs: Shot Layers, Shot Layer Properties, Audio Properties, Chroma Key Properties, and Additional Properties.



**Shot Properties** Enables you to add and delete sources and change the display order (change layering within the shot).

**Shot Layer Properties** Enables you to change the size, position, and other properties of a shot source.

**Audio Properties** Enables you to set audio levels and other controls. You can also monitor audio levels.

**Chroma Key Properties** If a source in your shot uses a chroma key, this tab enables you to configure the chroma key settings. Each source in a shot can have its own chroma key settings.

**Additional Properties** Enables you to set any additional properties for a source in your shot: System Device properties, Screen Display properties, Twitch Widgets (Chat and Followers), etc.

See [Shot Editor](#) for details on how to use the Shot Editor.

## 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.

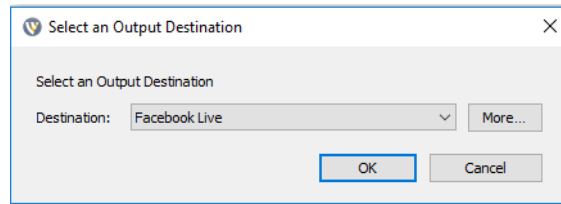
There are two main components for broadcasting your presentation (or saving it to disk): Encoding and Selecting a Destination.

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

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

## Streaming

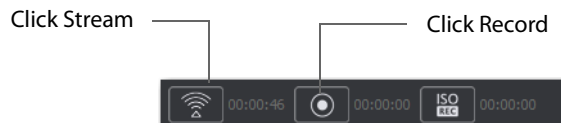
Select *Output > Output Settings* to open the Output Settings window. When the dialog box displays, select a Destination and click *OK*.



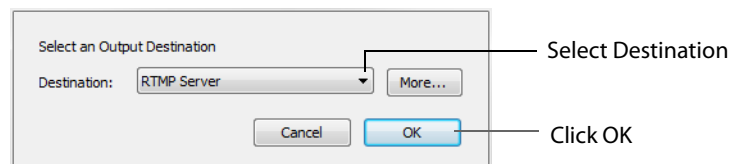
You can stream your broadcast to any streaming service provider you choose. The [Broadcasting](#) section of this user guide provides details on how to do this for many popular providers. This tutorial will show how to stream to Facebook.

Go to [Facebook Live](#) in the Broadcasting section for steps on how to stream to Facebook.

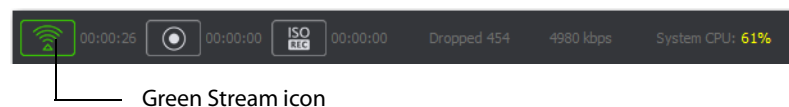
Once you have set up your Facebook Destination, you are ready to start streaming your broadcast. To do this, click the *Stream* button at the top of the Main window. You can also record your streaming by clicking the *Record* button.



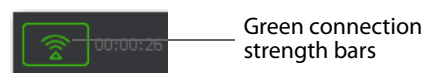
If you have not already selected a destination and logged into it, a dialog box displays. Select a destination, log in when asked to do so, then click *OK*.



The Stream icon will blink until a connection is made. Once you are connected the Stream icon turns green. If you cannot connect an error message will display.



Connection strength is indicated by how many bars are displayed in the Stream icon. Fewer bars indicates a weaker (slower) connection.



If the connection is ever broken, a *no connection* icon is displayed in place of the bars.



No connection icon

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

Click *Stream* again to stop streaming.

You can also record your broadcast by clicking *Record*. When you stop streaming, if your event is still live, you will be asked if you want to complete the event.

