

Wirecast

User Guide



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Chapter 1. Wirecast™ Introduction

Welcome

Thank you for purchasing Wirecast.

This documentation is intended to help you not only understand how a particular feature of this software operates, but to give you hints, tricks, and other information to help you make the best presentations possible.

If you do nothing else, we strongly suggest that you first take the the section called “Getting Started” that comes with the software. You can access the tutorial from the Help menu in the application. It should take about 10 minutes and gives you a very brief overview of Wirecast.

After the Tutorial, we suggest reading the section the section called “Overview”. Just a few changes can often make a huge difference in the quality of your presentations.

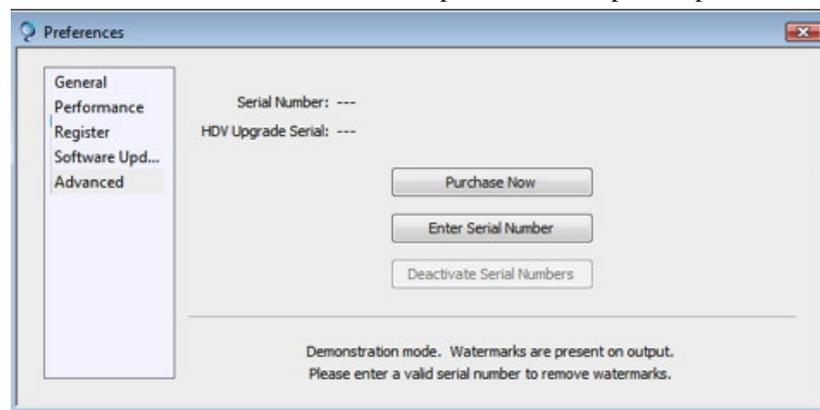
As with our software, we welcome comments, feedback, suggestions and the like. You can reach us at <support@telestream.net>

Enjoy Wirecast and drop us a line when you've got a presentation you'd think we'd enjoy.

Registration

When you purchased Wirecast you were given a serial number. This serial number must be entered into the registration area of Preferences.

Preferences can be found in the "Wirecast" menu. Or press Ctrl+, to open the preferences.



Enter your name and serial numbers.

You should enter your name, exactly as you registered with us.

Also enter your serial numbers as provided by Telestream, Inc.

For more information.

Please see the the section called “Register” documentation.

Getting Started

Wirecast uses some metaphors which are not commonplace in software packages available today.

For this reason, we have integrated a Tutorial directly into the application.

The major difference between the Tutorial and this documentation is that the tutorial uses a narrative which can show you the flow of using the application. This documentation cannot follow that style.

We strongly recommend that you take a few minutes to use the Tutorial.

The Tutorial is available from the "Help" menu:

- "Open Tutorial HTML"
opens your browser to the Wirecast tutorial
- "Create Document for Tutorial"
creates a Wirecast document with sample media already loaded for you.

Using this documentation.

The screen shots used in this documentation were taken using the tutorial Wirecast document.

You can open this document by selecting "Create Document for Tutorial" from the "Help" menu.

Menu Documentation.

Oftentimes, perusing the menus of an application can help ground you in the application.

If you are looking for information on a specific menu (or menu item), the documentation the section called "Overview".

Customer Support

Telestream is an online company -- we do all of our technical support through our website and email.

We highly value your feedback on our products, both positive and critical.

email contacts:

- Sales/Support: <support@telestream.net>
- Info: <info@telestream.net>

Website Links:

- Home: <http://www.telestream.net>
- Sales: <http://www.telestream.net/purchase/store.htm>

Chapter 2. Good presentations

Overview

There are a few very key elements to making a good presentation even better.

There are three things that you must always remember about video streaming:

- *High quality audio input*

Make sure you have the section called “Audio” A great looking video with poor audio input will sound unprofessional.

- *Good lighting*

Make sure you have the section called “Lighting, lighting...”. Poor lighting can make an excellent look horrible. If you are going to do chroma keying this may be the most important part of your setup.

- *Always uses the best quality camera you have*

Even if your viewers are going to see only 176x144 (G3 Mobile) an HDV camera is going to give you much better quality than a USB camera.

Why is this? 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, it will be 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 quality audio and video to the compression process as possible.

In Wirecast, this means to make sure that what you see in the the section called “Preview / Live” area is the best you can make it look. Wirecast takes exactly what you see in that area and sends it to the codecs.

Lighting, lighting...

Do not underestimate the power of lighting. If you ever watch news footage being taped outdoors, you'll notice that even then, they do the best they can to control the lighting.

A trip to your local hardware or art store will give you some excellent lighting options for both indoor and outdoor settings at very reasonable prices.

For professionals, lighting is an artistic realm. Many people make their living controlling lighting, and a few short paragraphs here cannot tell the whole story. However, these hints and suggestions can help a first time webcasting team to get decent output.

- *If using only one light, diffuse it*

If you have only one lighting source, it should not shine directly on your subject. You should diffuse the light.

- *Avoid deep shadows*

Make sure you "fill" all areas of your subject. Sometimes this will require adjusting the light to bounce off a different wall, or by using two lights. Putting a light low and a light high is often a way to fill evenly.

- *Don't light too evenly*

If you completely evenly light a set you may actually be worse off than not lighting the set at all. Look at a sample shot and see if it "looks natural". Most productions will have a little more light coming from above than any other direction. You should rarely light just from below the subject.

- *Too much light*

Be aware of having too much light for your subject. If your subjects are people, if you use a lot of light you will need to use make-up to counter-act the lighting. This is not a bad thing, but you have to choose how much effort you will go through to make a presentation. If your lighting balance is just right you can get away without using make-up (or if you normally use make-up, then without having to use a base).

While adjusting the lighting, take a look at the subject and make sure they aren't washed out.

- *Watch broadcasts and learn*

Watch the News a few times with an eye towards "How are they lighting this" as opposed to listening to the speech. You'll notice they handle all of the basics we cover here but you may catch something that you'd like to add.

These "rules" sound rather vague and if you have one or two lights, you can get much better lighting. If you are willing to invest a little bit more of your time and money in your lighting, we suggest that you learn about what is called "Triangular Lighting" or "Three Light Setup".

Although this may sound complicated, it's actually quite simple, and involves setting up three lights (or potentially using natural light as one of the lights), in a formula that gives you a good balance.

- *Key light / Main light*

This is the strongest of your lights, and does most of your work of lighting. This light normally comes from one side of the camera (say, the left), and is a little raised. You could actually take a picture with just the main light, but you'll see shadows.

- *Fill Light (soft, directly in front of subject)*

This is a very soft light which is simply to remove shadows and give the "fill" of the image. Is usually direct (same level as the head of a person, for example), and usually comes from the same area as the camera (or just to the side and behind). If you take a picture with just fill light, your subject will be way too dark. It only adds to the main light to "fill in" the shadows.

If your Key light comes from the left of your camera, your fill light should come from the right, and visa-versa.

- *Back-light / Rim Light (directed from behind the subject and above)*

This is the hardest light to explain, but it is the "accent" of your subject. If you look at high-school yearbook pictures, you'll notice that the top-left (or top-right) part of all those head shots have a highlight of light -- that is the back-light or "rim" light. It is also called "rim" light because it makes a slight rim around the edge of the top part of the head of your subject.

This light normally comes from behind the subject, often from above, and is focused. Be sure it is not directed at the camera.

Most serious lighting starts with these three basic lights. There are some great sites on the web that describe these techniques in great detail. Here are some:

- <http://www.paguk.com/lighting.htm>

- http://www.diy.net.com/diy/hp_cameras_equipment/article/0,2033,DIY_13955_2649634,00.html

Audio

Like video, audio is an art unto itself. However, you can make a great presentation even better by remembering to focus on a few details.

Here is some common advice on producing clean audio.

- *Use a good, external, microphone*

Though this may sound obvious, a good microphone can make the biggest difference. Most DV cameras have audio-input for your microphone. Use it.

Most built in microphones are not good quality and will suffer from the hum of the electronics of the "host" camera or computer. Even if it's not a great microphone, if it's external, it's probably going to sound better.

- *Consider a microphone splitter with two microphones*

If you are doing an interview with one camera, you can use two microphones with a splitter (\$5 from Radio Shack). This often gives better results than one omni-directional microphone at a distance. You can use "lapel" microphones with a splitter.

- *Properly position the microphone*

Position the microphone as close to the sound source as possible (even with omni-directional microphones). Sound volume decreases rapidly over any distance, and the better levels (volume) you have coming into the microphone, the better quality you will get.

- *Consider investing in some "lapel" microphones*

Even an inexpensive (less than US \$20) lapel microphone can make a huge difference.

- *Control environment 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.

Broadcast Settings

Assuming you've got good video and audio coming into Wirecast, the last thing you need to do is make sure you configure the best Broadcast Settings for your presentation. This, also, can be an art.

There are a lot of parameters to modify when dealing with broadcasts, but a few simple steps can help get you on your way.

Bandwidth / Connection Speed.

The first information you need to know is how much "bandwidth" you have at your disposal. This is how much data you can send from your computer to your viewers computer. It depends on the speed of your connection to the network and your viewers connection. In fact, it is the **minimum** speed between you and all of your viewers. If you have one viewer who is using a dial-up modem, then for that viewer to see good quality, you must broadcast at "Modem" speed.

So you have to know who your viewers are and what kind of connection they may have. This is a little harder to determine. You have to ask yourself. Do you expect them to be connected to the internet modems or DSL? Are they on your local network?

In some situations, you are broadcasting for just your local network (say, in an office building). Here you should discuss briefly with your network administrator your plans and verify that you will not disrupt the network with your broadcasts. Ask them what your upper limit should be.

Your available bandwidth should be the **minimum** of what you can upload and what your viewers can download.

Motion.

Once you know your bandwidth, you need to decide whether your video will have a lot of "motion" or not in it.

Motion means what you'd imagine -- how much things move around in the video. If you are doing an interview, that is considered "low motion". If you are filming a basketball game, that is probably "High Motion."

Putting it together.

Wirecast comes configured with defaults to help ease your usage of Wirecast. You should pick the one that matches the answers to the questions raised in the previews sections. See the section called "Encoder Presets" for details on how to do this.

Older versions of QuickTime.

If your viewers have older versions of QuickTime (version 5 for example), then you may wish to use a different Encoder than the default. Many consider that the Sorenson 3 Codec for version 5 of QuickTime is the best bang-for-your-buck.

Going Further.

The parameters of the Encoders can be quite daunting and technical. It is beyond the scope of this document to attempt to describe the delicate balance you must strive to achieve. There are folk who spend a lot of their time fine-tuning encoders to attempt to get them to do exactly what they want. Wirecast comes with what many consider the "generally optimal" settings for the various network environments.

See the section called "Overview" for information on changing the encoder settings.

Chapter 3. Usage Patterns

Overview

Ways to use Wirecast.

Wirecast was designed to support a variety of usage patterns (work-flow).

This section of the documentation is intended to show you alternative ways of using Wirecast that may prove to be effective for your broadcast needs.

Two major usage patterns.

There are, however, two major ways in which the application can be used:

- the section called “Presenter is Operator”

In this usage pattern, the person who is doing the presenting (speaking, etc), is the same person who is using the application (the operator/engineer).

- the section called “Using an Engineer”

In this usage pattern, an engineer (or operator) is responsible for using Wirecast, and the presenter concentrates on the content.

The presenter never needs to even know how Wirecast works.

Presenter is Operator

Definition.

In this usage pattern, the person who is doing the presenting (speaking, etc), is the same person who is using the application (the operator/engineer).

Suggestions.

Below are a set of suggestions for using Wirecast when you are both the presenter and operator.

Be simple.

When you are going to both interact with Wirecast and provide content (i.e., be the presenter), you should set up Wirecast to make it as simple as possible for you to use while presenting.

Try to set up a "static" system -- set up your logo and titles in such a way that you don't have to change much (if anything) during the presentation

Use only a few shots, so that it's easy for you to see which to click between.

Keep Auto-live on.

So that you only have to do "one-click" keep the the section called “AutoLive and usage” on.

Pre-configure your shots.

Make sure that all the shots you are going to use are created up front.

Use as few titles as possible.

Perhaps just use one title and use the the section called “Layers” to turn the title on and off instead of trying to select different titles during runtime.

Use key-equivalents for switching shots.

Wirecast has a hidden feature -- if your shot has a number in it, you may use option-[number] to immediately bring that shot live.

So if you have a shot named "Me with title 1" and one called "iSight 2 No title", then pressing option-1 will bring "Me with Title 1" live and pressing "option-2" will bring "iSight 2 no title" live.

Using an Engineer

Definition.

In this usage pattern, an engineer (or operator) is responsible for using Wirecast, and the presenter concentrates on the content.

Suggestions.

Below are a set of suggestions for using Wirecast when you have both an engineer and an operator.

Keep AutoLive Off.

As you may want to make several changes at one time before taking the changes live, you should probably keep the section called “AutoLive and usage” off. The keyboard equivalent for the the section called “Transitions / Time / Go ” (or Ctrl+G) is very handy when AutoLive is off.

Use shift-control-click.

Holding down the shift and control key at the same time will *temporarily* toggle the AutoLive feature. It will stay toggled for the length you hold down the keys.

This means that if you normally have AutoLive off (as suggested here), you can quickly make a shot become live by holding down the shift-control keys and clicking on the shot.

Open the Preview window.

You probably want to preview everything before it becomes live, so use the the section called “Preview / Live” so you can see your setup before it becomes live.

Use the Layer windows.

Under the "Window" menu, you'll find "New Layer Window". Use this to open secondary layer windows so that you can quickly flip between shots on several layers.

Use the Inspector.

Instead of double-clicking on shots to edit them, try using the Inspector.

This window acts exactly like the edit window but always edits the last shot you touched.

AutoLive and usage

Single-click vs Double-Click.

Some users of Wirecast will want to "just click once" on a shot to make it become live.

Other users will want to make several changes to the broadcast before making them live.

AutoLive is designed to allow both styles within Wirecast.

AutoLive only affects the main window.

The AutoLive feature was designed to make a "one-click" interface possible for those users who wish to simply click from shot to shot.

The Edit window (or other windows) are not affected by the status of AutoLive.

When AutoLive is on...

- Just clicking on a shot in the main window will make it become "live".
- The the section called "Transitions / Time / Go " becomes less useful.
- Shift-Control-Click makes load a shot into preview but does not make it live (see "Temporary Toggle" below)

When AutoLive is off...

- Just clicking on a shot in the main window will only load it in the Preview.
- The the section called "Transitions / Time / Go " becomes imperative.
- Shift-Control-Click makes the clicked on shot immediately live (see "Temporary Toggle" below)

Temporary Toggle.

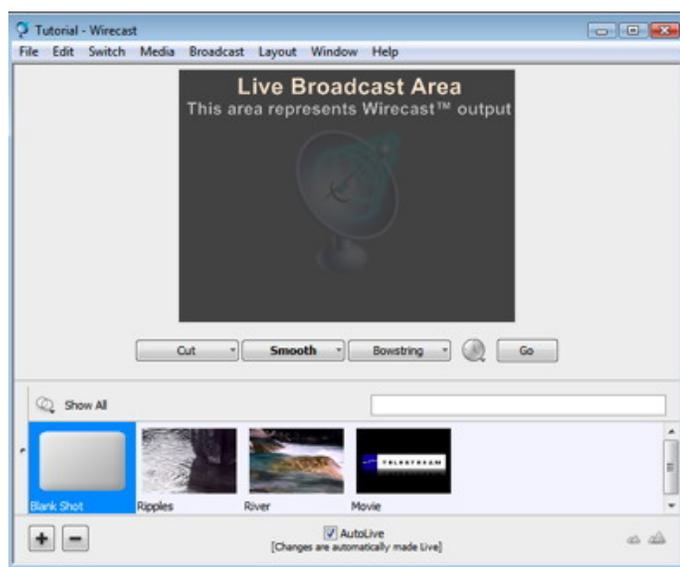
Sometimes you may want to very temporarily toggle (turn on and off) the AutoLive state.

If you hold down the shift and control keys at the same time, AutoLive will *temporarily* toggle.

This enables you to very quickly switch AutoLive on and off for one action (say, a mouse-click).

Main Window Layout

Configuring your Main Window.



Wirecast was designed to be immediately usable with a few simple mouse clicks.

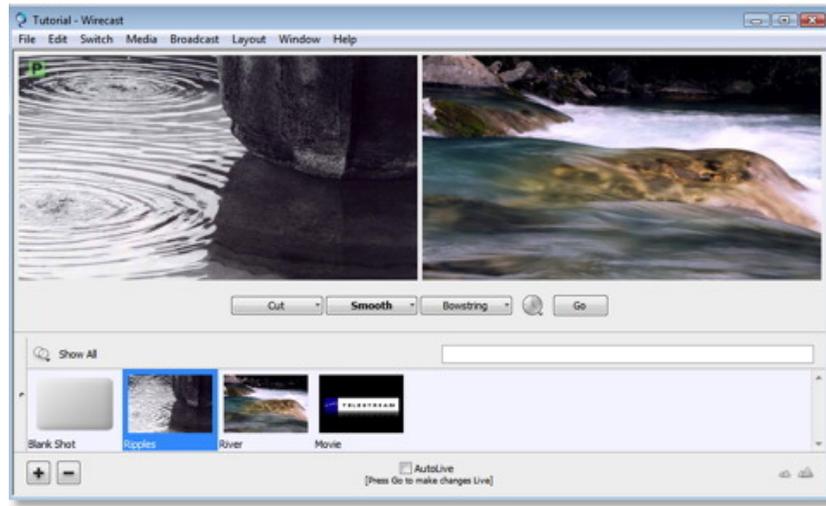
However, after you understand how Wirecast works, you may want more power at your fingertips.

Wirecast offers many ways for you to configure the windows to show you the information you desire when you desire it.

Most of these features are available under the "Layout" menu in Wirecast.

Preview.

Displays a the section called "Preview / Live" of what the broadcast will look like if you press the the section called "Transitions / Time / Go". This is only really useful if AutoLive is off.



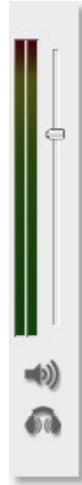
Layer Visibility.



Shows the set of visibility buttons just underneath the preview and Live.

Clicking on these buttons quickly turns on/off visibility for the particular the section called "Layers".

Master Audio.



This area allows you to control the output master volume level, master mute, and line-out mute.



controls the master mute of the audio (what your viewers hear). note that even when you have muted the output, the Encoder will still generate audio (though it will be "blank"). If you want to never broadcast audio, you should modify the the section called "Overview" to not push audio through the encoder.



controls the line-out mute (what **you** hear). Even when the headphones are mute, your viewers will still hear the output, it's just not sent to your headphones (or speakers).

Main Shot List.

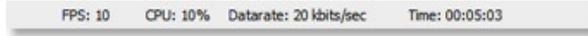
Normally, the main window shows the shot list at the bottom of the window. However, you can turn this off, as shown below:



This is useful if you want to open up separate Layer windows (see below).

Here is a the section called "Layers".

Output Statistics.



These are the statistics that are available about your broadcast.

Note

When you are not broadcasting, these statistics are not displayed

- **FPS** - Frames Per Second

The video part of your currently selected the section called “Overview” controls this value, but note that most encoders treat this as a hint. This means the values you will find in usage will be *near* the value you have selected in the encoder preset.

If this value is consistently dropping well below your target FPS, consider not using the section called “Advanced”.

- **CPU** - CPU Usage (percentage)

This shows the current strain on your CPU. If this value is high, you may consider using a different encoder, or modifying your encoder settings. The encoder affects your CPU usage more than any other parameter in Wirecast.

If the CPU usage is nearing 95%, you may consider not using the section called “Advanced”.

- **Datarate** - How much network bandwidth your broadcast is using.

This shows the current bandwidth of your broadcast. The video part of your currently selected the section called “Overview” controls this value, but, like Frames Per Second, is not always respected by the Encoder. The Encoder uses this value as a *hint*, not an exact limit. Some Encoders will purposefully go over this limit in some instances.

- **Time** - How long you have been broadcasting.

This value does not reset when you start/stop the broadcast -- it is cumulative. This allows you to be able to save pieces of a broadcast to disk and know the total amount.

In this example, the presentation has been broadcasting for 5 minutes and 3 seconds.

Layer Panel.

This opens and closes the the section called “Layers” in the lower left of the main window.

You can also slide this panel open by moving the knob to the right.

Here is what the main window looks like with the Layer panel open (see lower left):



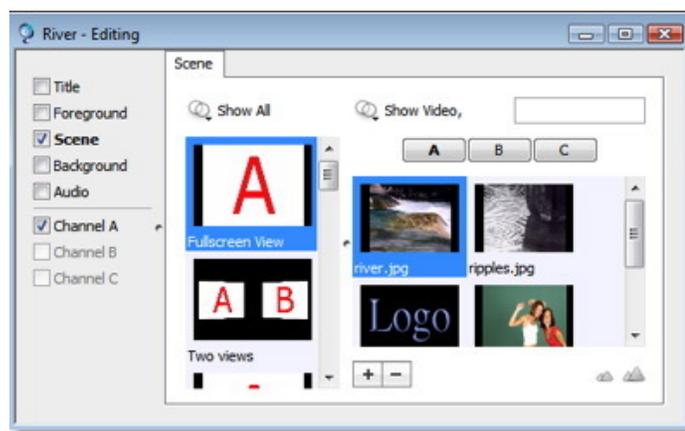
Edit Window Layout

Editor Preview.

In the "Layout" menu, the menu item "Editor Preview" will hide/show the preview at the top of the editor window. This also works for the Inspector.

This can be useful if you have a smaller monitor.

Here is what the Editor looks like without a Preview:



Showing just the preview.

Using disclosure button (



-- middle left of shot editor window) allows you to show just the preview.

Here is what the Editor looks like with only a Preview:



Information on Shot Editing.

More information about editing shots the section called "Overview".

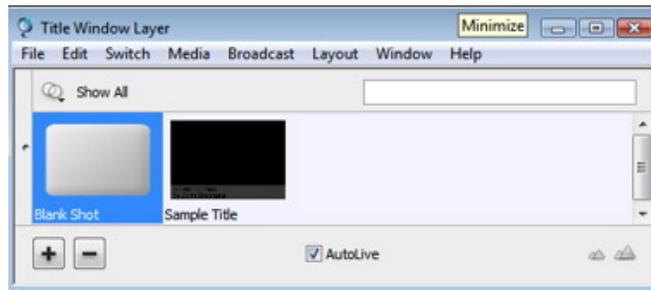
Layer Windows

Multiple Layer Windows.

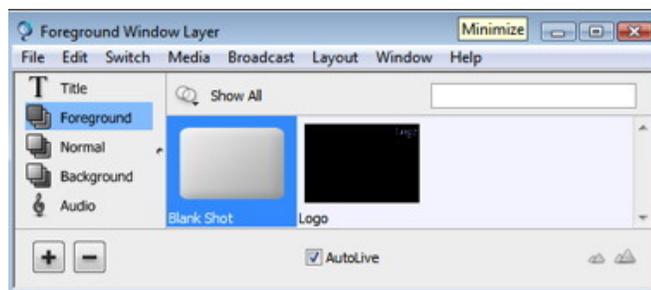
The bottom part of the main window (the shot list) can be opened in a separate window.

Under the "Window" menu, the menu item "New Layer Window" shows the windows you can open.

Here is what one of the Title Layer window looks like:



This area works exactly as the shot area in the main window. You can even change which layer is being displayed. To do so, just open the layer panel and select another layer. Here, we've selected the "Foreground":



Layer Documentation.

Here is more information about the section called “Layers”.

Chapter 4. Hardware

Overview

This chapter describes hardware related constraints, issues, and features.

These sections cover specific hardware issues and restrictions:

- the section called “FireWire (IEEE 1394)” -- issues related to IEEE 1394 devices
- the section called “DV Cameras” -- a Restriction with DV cameras
- the section called “Sleeping” -- Sleeping your computer
- the section called “S-Video / 2nd Display” -- How to show Wirecast output on a second device.
- the section called “Configure Devices” -- How to set up your camera / input device

FireWire (IEEE 1394)

FireWire (IEEE 1394).

FireWire is a hardware protocol that you may use to connect devices (cameras, hard drives) to your computer.

It's important to understand that saturating (using up all available bandwidth) your FireWire bus will lead to problems in Wirecast, as the audio and video will appear choppy.

FireWire Saturation.

There is an absolute limit to the bandwidth available to your FireWire devices (400 or 800 megabits per second).

If you use a FireWire hub and plug several devices into that hub, you will share the bandwidth on that FireWire bus. Adding a hub does not add any bandwidth to the bus, just more places to plug things in.

If the sum of your devices goes over the speed limit, you "saturate" (use up) the available bandwidth.

If you have a camera attached to the FireWire bus and you saturate the bus, then you will see dropped frames (choppy video).

Devices do not always use all bandwidth.

If you have a hard disk connected to a FireWire hub and also have your camera connected to the same hub, it may appear to work. You're using the camera just fine!

Unfortunately, this may not be a good indication of whether the bus will *ever* become saturated. For example, email could arrive and your email program could access a file on your FireWire drive which causes FireWire saturation.

The lesson to learn is this: Be careful when connecting hardware to your machine. Just because your setup works once when you first put it together in does not mean it will always work. Play with your setup and make sure that you have enough FireWire bandwidth to share all of your devices without experiencing choppy video.

Some Devices, especially cameras, request more bandwidth than actually required.

Normally, a camera requires around 25 Megabits/second to deliver audio and video to Wirecast.

Unfortunately some cameras actually allocate 100 megabits / second (or more!).

High Definition (HDV)

High Definition Video.

Wirecast is the only webcasting system that can use HDV cameras in HDV mode. Although you can achieve extremely high quality video using HDV, there are some limitations to using them, mostly due to the resources they consume.

One Camera per bus.

When your camera is in HDV mode, you will only be able to have one camera per bus.

Two HDV total, and only on higher end hardware.

You will need a high end computer if you want to use more than one HDV camera with Wirecast. HDV images are so large that they will stress all components that are involved in your production: memory, video memory, video fill rate, bandwidth (on input busses) and so forth.

If you want to use several cameras, and only have HDV cameras on hand you may consider using your secondary cameras in DV mode.

HDV cameras in DV mode.

If you switch your HDV camera to DV mode, your camera will act like a DV camera.

Although you won't get HDV quality, you will get much higher quality than your average DV camera, as most HDV cameras have very high quality CCDs in them.

DV Cameras

One Camera Per Bus.

We recommend that you use only one DV camera per 1394 card.

If you do this, you should not have any conflicts or saturation problems with your cameras.

But if having more than two cameras won't saturate an 800 mbits/sec, why the 2 camera restriction?

You may be able to get away with more having more cameras per bus.

It mostly depends on the cameras that you use. Some cameras, even relatively recent models, do not behave properly with regard to using multiple cameras on the same bus.

If your cameras behave correctly with regard to the FireWire bus, then you may be able to use more cameras per bus / card. See below for a discussion on "How cameras conflict on 1394".

The upshot is that it may be possible, but due to the hardware limitations, we cannot recommend it.

How cameras conflict on 1394.

Although the specific details are more complicated than described herein, the problem is basically this:

Each camera is required to negotiate the channel on the FireWire bus that it will transmit on.

However, some cameras (or more specifically: firmware in those cameras), either do not negotiate at all or ignore the results of the negotiation and transmit on a predetermined channel.

As one might expect, this causes a lot of problems on the receiving end (in Wirecast), as data coming into Wirecast on one channel is actually coming from two devices.

There is nothing Wirecast can do in this situation, and it is widely acknowledged to be a problem with older or very inexpensive cameras.

Sometimes I can use two cameras on the same FireWire bus just fine, sometimes I can't. What's wrong?

The most unfortunate part is that the cameras that fail do not fail consistently.

This has to do with the fact that some cameras appear to "randomly" pick a channel to transmit on. So sometimes it will work and sometimes it will not.

Sleeping

Putting your display to sleep.

When put your display to sleep, it turns off the video card. Wirecast uses your video card as part of broadcasting.

Wirecast automatically tells the operating system to not put your display to sleep (it tells the computer it's "busy"), so that this will not happen accidentally.

However, if you forcibly put your display to sleep, your broadcast will stop.

S-Video / 2nd Display

External Display Output.

S-Video out and 2nd Display has not yet been implemented for the Windows version of Wirecast.

This feature will be available in a future release of Wirecast.

Configure Devices

Configure Devices.

Some devices (cameras, etc) may be able to be configured.

Choose the device you wish to configure from "Configure Devices" in the the section called "Media" menu.

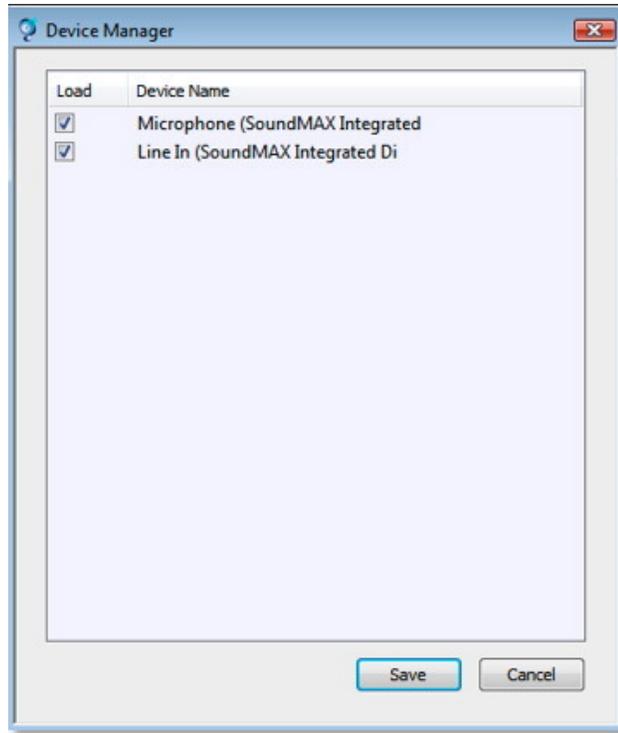
Note

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.

Device Manager

Device Manager.

The device manager window allows you to define which devices (cameras, mics, etc) are loaded by Wirecast on launch.



If the checkbox is ticked, then the device will be loaded, otherwise it will not be loaded.

This is a global action - it affects all documents loaded by Wirecast.

With some devices, you might uncheck all of the input channels except for one to allow Wirecast to load only that channel.

Chapter 5. Media Capabilities

Overview

Overview.

In addition to live video from your cameras, Wirecast allows you to work with media that you have created outside of Wirecast.

This section introduces some other common media that you may wish to use with Wirecast.

There are three ways to add media to Wirecast:

- To make the media a shot - Drag & Drop
If you want to make the media its own shot, then the simplest way is to drag the media directly on the the section called "Shot Selection Area".
- To add the media as part of an existing shot - Drag & Drop
If you want to make the media its own shot, then the simplest way is to drag the media directly on the the section called "Overview".
- To add the media as part of an existing shot - Add Button
Alternatively, you can press the "+" button in the the section called "Overview".

Media capabilities.

The rest of this chapter is dedicated to information about specific types of media that Wirecast supports.

Images / Opacity

Images / Opacity.

Wirecast supports a wide variety of still images types (TIFF, GIF, JPEG, PNG, etc).

Some of these formats (TIFF, GIF, PNG, etc) offer some form of Opacity or Transparency. This is often called an "Alpha" channel.

Wirecast will work seamlessly with these formats and is the preferred method for using graphics such as Logo's which have transparency.

GIF and Transparency.

However, GIF files are a special case because they only offer Transparency, not true Opacity. (the GIF format allows you to say that part of the image is transparent (completely invisible), but does not allow you to say that part of the image is "partially transparent").

Some GIF images use Transparency for much of the image. However, near the edges of the visible data, Transparency cannot be used. Often this happens 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 will show the "background" that was saved in the GIF. This is not a defect in Wirecast; Wirecast is properly representing the data as it was saved in the GIF.

The solution to this is to obtain the original image (for example, the original Photoshop file), and re-save the image as either TIFF or PNG. Both of these formats offer full Opacity.

Movies

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 one is DivX®).

Wirecast will inform you if a codec is missing or if you need to install one. It is beyond the scope of this documentation to describe all of the possible codecs available on the market today or explain the intricacies of installing each.

Contact the provider of the codec for details on installing for your usage.

Wirecast won't show my movie of type XYZ.

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

Please note that Wirecast does not currently support some file formats (.mpg, .mpeg, .m1v, .m2v).

The workaround is to convert the media into a different type (such as MPEG-4).

MPEG, MPG, M1V, M2V

MPEG, MPG, M1V, M2V files are Unsupported.

These file types are currently unsupported by Wirecast.

Workaround.

The work around is to convert the media into a different type (such as MPEG-4).

AVI

Video may not play.

Some AVI files may not play the video (the audio will play however).

Workaround.

The work around is to convert the media into a different type (such as MPEG-4).

Real Media

Unsupported.

Real Media Files (.RM) are not supported by Wirecast.

Workaround.

The work around is to convert the media into a different type (such as MPEG-4).

Chapter 6. Titling Capabilities

Overview

Wirecast offers a wide variety of Title templates for you to use in your broadcast.

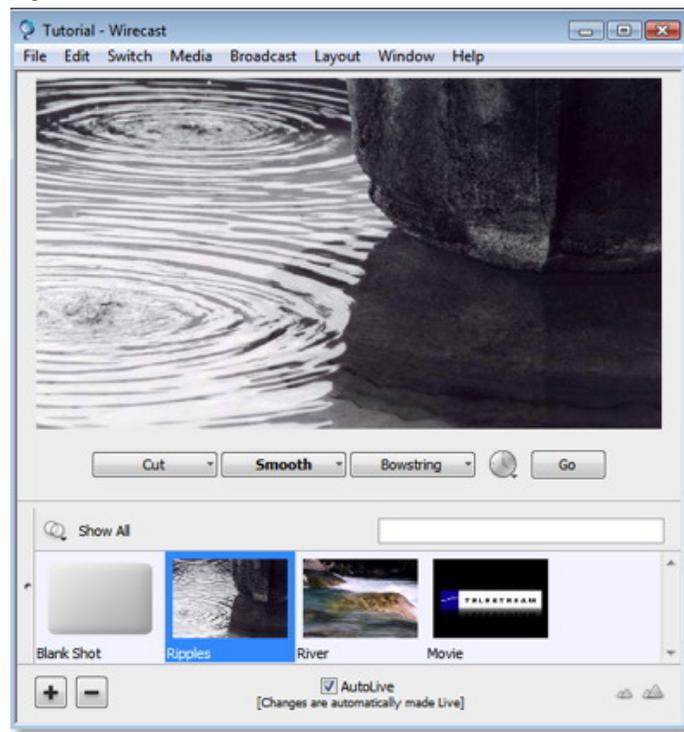
Adding a professional looking title is as simple as selecting a template and adding your text.

To learn how to add a title to a shot, see the section called “Adding Titles to Shots”

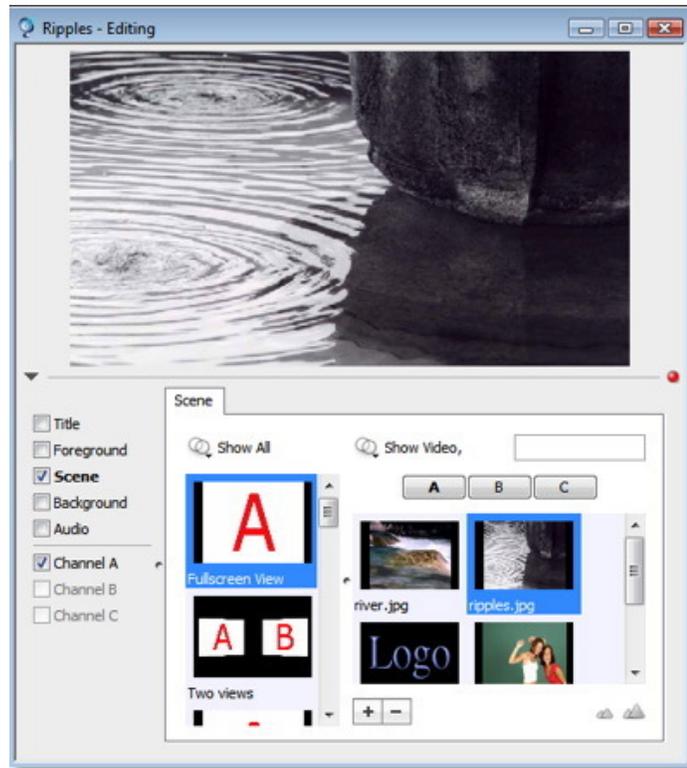
To learn how to modify parts of a title, see the section called “Modifying Titles”.

Adding Titles to Shots

From the main window, double click on a Shot (Here, we are double clicking on "Ripples" from the the section called “Getting Started” document).

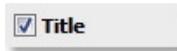


The following window will open:

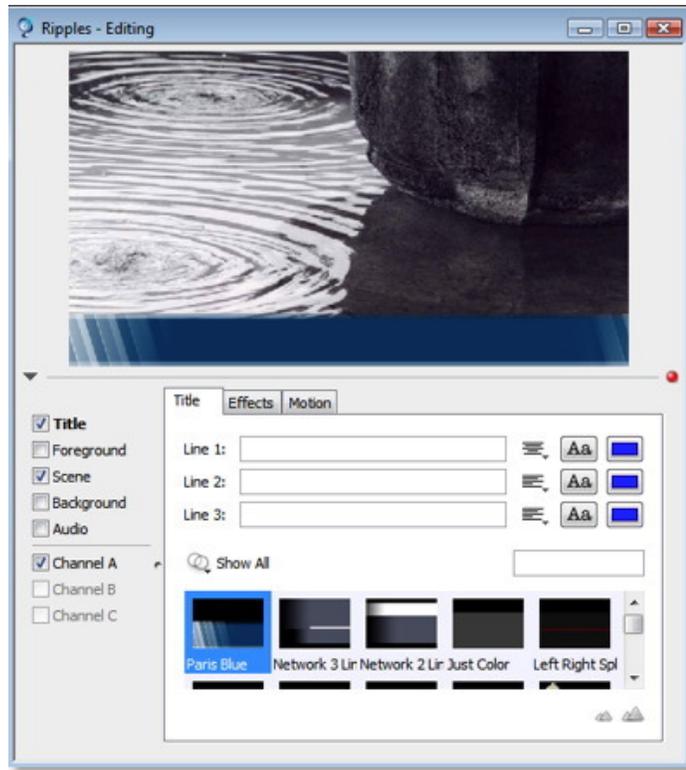


Notice in the bottom left area of the window, you'll see "Title", "Foreground", etc. These are the various configurable elements in a shot. For more information on this, please see the section called "Shot Elements".

Currently, "Scene" is selected. If you click on the text "Title" it will become selected (and checked).



The checkbox tells you whether the element is visible, and Wirecast will make the shot element visible when you first click on it. So clicking on the "Title" will both make it visible and show you the title options:



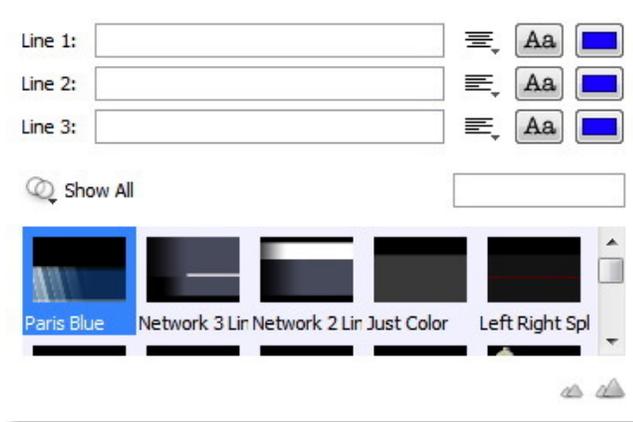
Notice that Wirecast has selected a template by default for you.

You are now ready to modify the title. See these the section called “Modifying Titles” for more details.

Modifying Titles

To modify the titles, you have to first the section called “Overview”, and select "Title" from the the section called “Shot Elements” list.

You modify settings in this area of the screen:



Title area overview.

There are two main sections here:

- **the top / text entry area** -- Configuration of the text, justification, font and font color.
- **the bottom / icon area** -- Area where you can the section called "Choosing a Template".

You have the ability to modify 3 lines of information, and the settings are arranged horizontally to associate the line of text with its own settings (Justification, Font and Font Color).

Here is what "Line 1" looks like:



Changing Text.

To changing the text, you simply enter the text into the text entry area for "Line 1"

Wirecast supports all text entry (even in-line entry engines for Japanese, Korean, Chinese, etc).

Changing the justification.

Justification is control via a popup just to the right of the "Line" and looks like this:



Simply click on the icon and select the justification method.

Changing the font.

Press the



button to change the font. A Window will appear to change the font. If you press the



again, the panel will disappear.

This floating palette also watches which text-input you have selected. So if you click in a different text entry area, the font panel will notice this and configure 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 the Font Color.

Press the

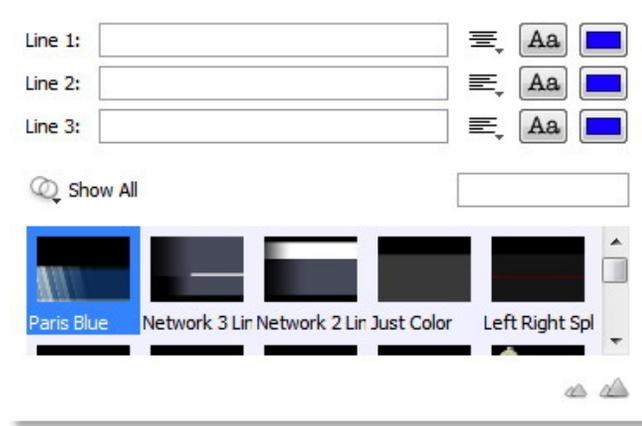


button to change the font color. A standard color picking window will appear to change the color.

Choose the color you desire and press "OK".

Choosing a Template

Title templates are shown at the bottom of the Title window, which looks like this:



Click to Choose.

Simply click on an icon to choose a different template

Information that is stored in a Template.

Templates store this information:

- **General Layout** (images, where text appears, etc)
- **Font Justification**
- **Font** (the actual font to use)
- **Font Color** (color of the font)
- **Background Color**
- **Background Opacity**

As you switch templates, all of your changes are replaced with what exists in the template.

The exception is that any text you have entered not modified (as the template carries no default text).

Where to put Titles

Where to put Titles.

The previous sections of this chapter describe how to edit a title for a shot.

The example showed putting a title "on top of" an existing shot.

However, as our the section called "Getting Started" shows, you can also create a shot which has *only* title data.

This is very useful if you want to overlay the same title over the top of several shots, or if you want to modify the title independent of which shot you are choosing.

The choice is up to you.

This means you have an artistic choice.

You must decide for your broadcast if you want your titles to be tied directly to specific shots or if you want them to be independent.

Wirecast seamlessly supports using both methods - and even both methods at the same time.

Example: Seminar Title.

You may wish to broadcast a seminar and have the title of the seminar appear and disappear from time to time. But you have several other shots (perhaps cameras) you are switching between.

In this case, you'd probably create a shot which has only a Title in it. You could move this title to the Foreground layer (see the section called "Layers" for more details on layers and moving shots between layers).

In this configuration, you can bring the title in and out of your broadcast by selecting it in the Title Layer. And this is all independent of the other shots you may have created and are in use.

Example: Interviewee Title.

If you are broadcasting an interview, a shot which contains the camera for the Interviewee may have a title in it.

In this case, when you cut to the shot of just the interviewee, the title will appear. When you cut to the person asking the questions, the title will 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 on the shot. To do this, make the shot live, then open the shot editor. Turn the Title checkbox on, press Go (or command-G). Turn the Title checkbox off, press Go.

Creating New Templates

Not supported using Wirecast user interface.

The templates that Wirecast uses are not edit-able within Wirecast.

A no user interface solution.

Despite a user interface not existing for templates, you may create new ones yourself.

Wirecast looks in your "My Documents" directory for a directory called "WirecastTitles". It is here you can put your own titles.

Examples.

An example WirecastTitles directory exists on our server: <http://www.telestream.net/downloads/wirecast/titles/WirecastTitles.zip>

Simply download and put the uncompressed "WirecastTitles" directory into your "My Documents" directory.

The next time you launch Wirecast, user titles will be available.

Getting oriented.

There is an XML file called "description.xml" which describes all of your Titles.

You edit this file to add/create/delete your Titles.

Other Media.

Any media used by these templates must exist in the same folder. For example, we use "user_scoreboard.png" in one of the example templates and that is included in the Wirecast_User_Titles directory.

Editing the XML file.

Please read the header of the XML file for a list of rules and descriptions.

Make backups of this file before editing as simple syntax errors will cause Wirecast to not parse the file.

Chapter 7. Logo Capabilities

Overview

When you perform a broadcast, you may wish to include a Company logo in your presentation.

There are two ways you can do this in Wirecast, and it depends on how you wish to use Wirecast.

- Logo is its own shot
In this configuration, you create a shot which only has the 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 (for example, in a corner of your broadcast).

See the section called “Global Logo” for details on accomplishing this.

- Logo is part of another shot.
In this configuration, you add a logo to an existing shot.

This is if you want to have, for example, a shot you'll use as part of the start of your broadcast.

See the section called “Global Logo” for details on accomplishing this.

Global Logo

Global Logo.

Logos always exist in Shots.

In fact, Wirecast treats logos exactly the same way any other static media is treated.

A 'Global Logo' is just a shot that contains only your logo.

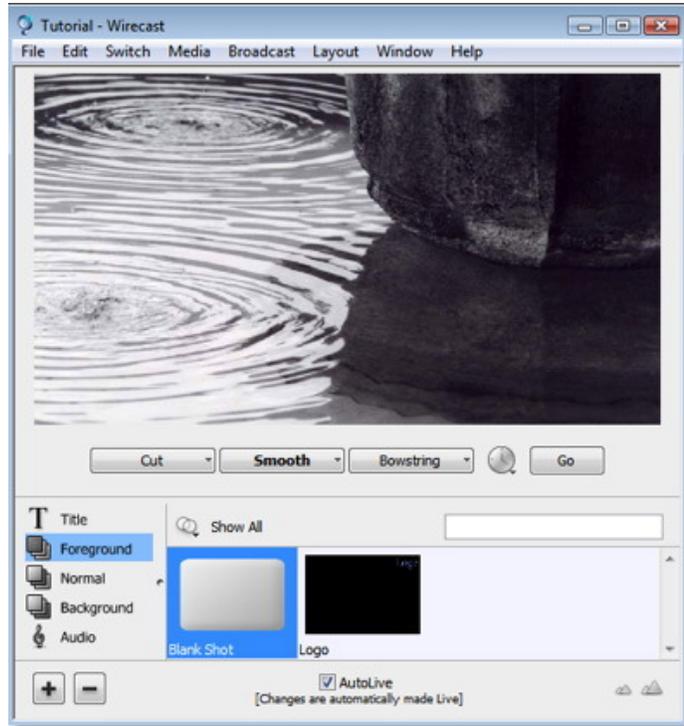
To create one, you simply create a new, empty, shot and add your company logo to it.

Step-by-step directions.

- **Go to the Foreground Layer**

In the main window, slide open the panel on the lower left (or select "Layer Panel" from the "Layout" menu).

Click on the text that says "Foreground", and your window should look like this:



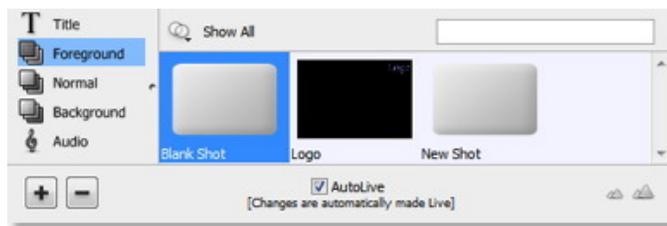
- **Add an new shot**

In the main window, press the



button. You'll find it in the bottom left hand part of the window shown above.

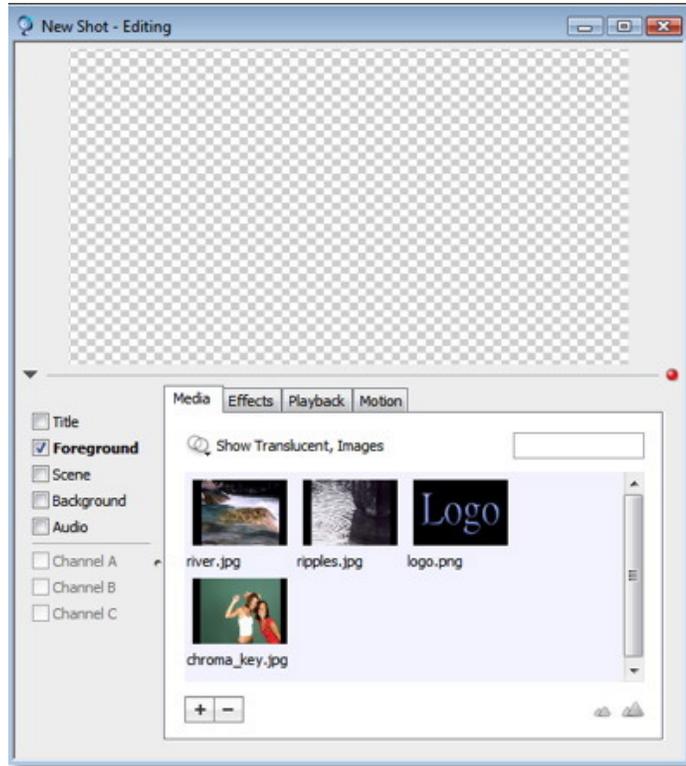
Your window should look like this:



- **Edit the New Shot**

Double click on the shot named "New Shot".

Your window should look like this:



- **Add your logo**

You can drag and drop your logo to the list shown at the bottom, or you can use the



button.

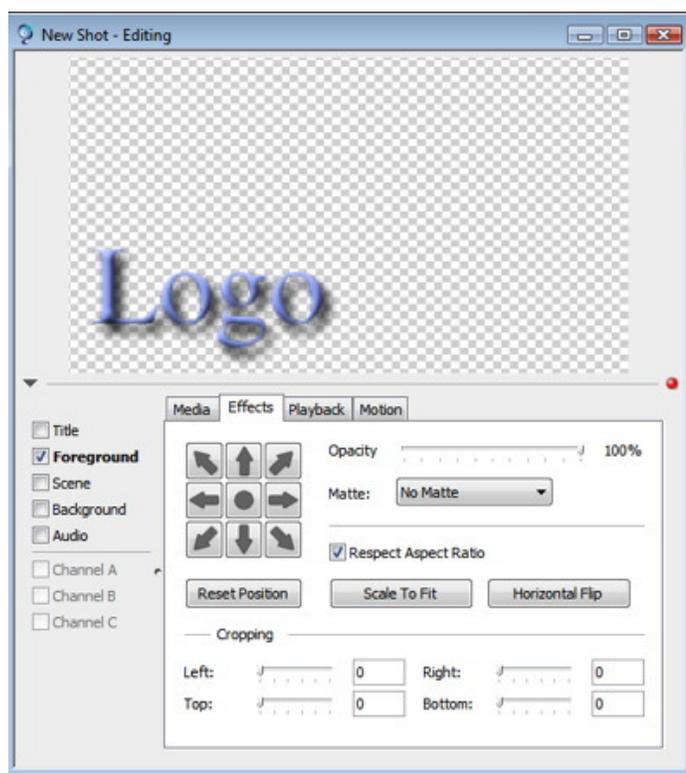
In this example, we'll just selected "logo.png", and we get the following in the preview at the top of the edit window:



- **Position your Logo**

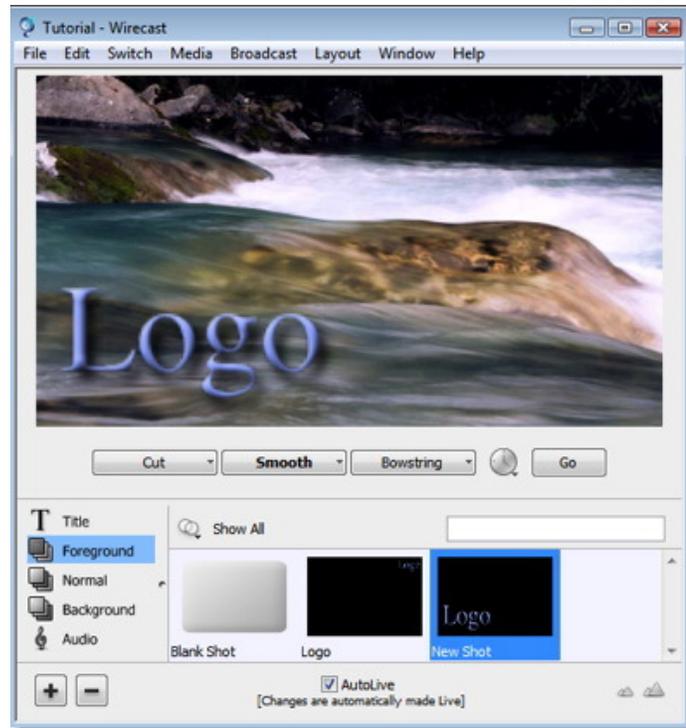
Most likely, you won't want the Logo directly in the middle, so to position it, you need to select "Position" from the tab in the middle of the edit window, as shown below. Below, we have positioned the logo to the top-left, and doubled it in size.

- *Move Media* -- Use 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 the section called "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 your Logo for the Broadcast**

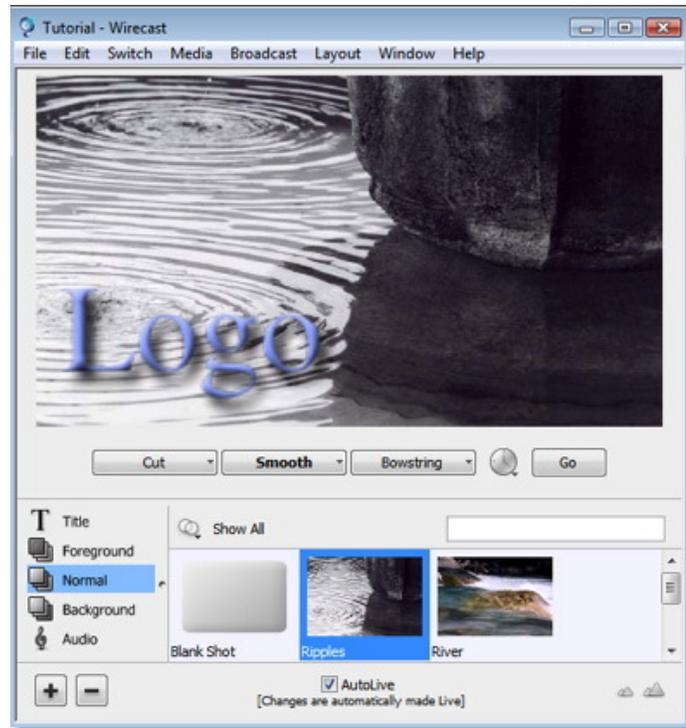
Close the edit window, and select the shot in the "Foreground" Layer:



- **Change shots on the Normal layer**

Go back to the Normal layer by selecting "Normal" on the left side of the window as shown below.

You can see that changing shots on the Normal layer does not affect the Logo you have put on the Foreground.

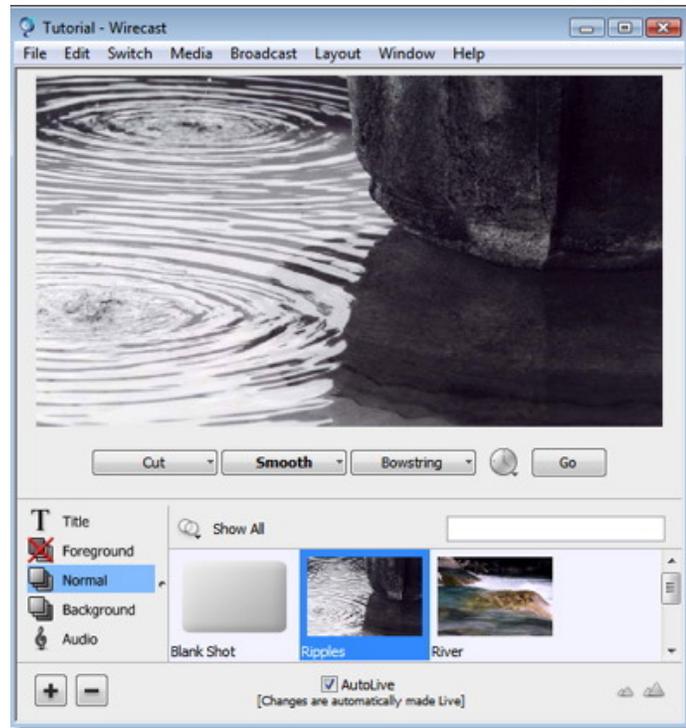


- **Usage pattern hint: Turn off Foreground Layer**

One way that you can use Wirecast is to turn on and off layers.

In this case, we can turn off the (and turn back on) the Foreground layer by clicking on the icon next to the word "Foreground", as shown below.

This very powerful way of using Wirecast allows you to have a Logo (or other graphic) on stand-by in another layer, ready to go.



Shot Logo

Shot Logo.

Logos always exist in Shots.

In fact, Wirecast treats logos exactly the same way any other static media is treated.

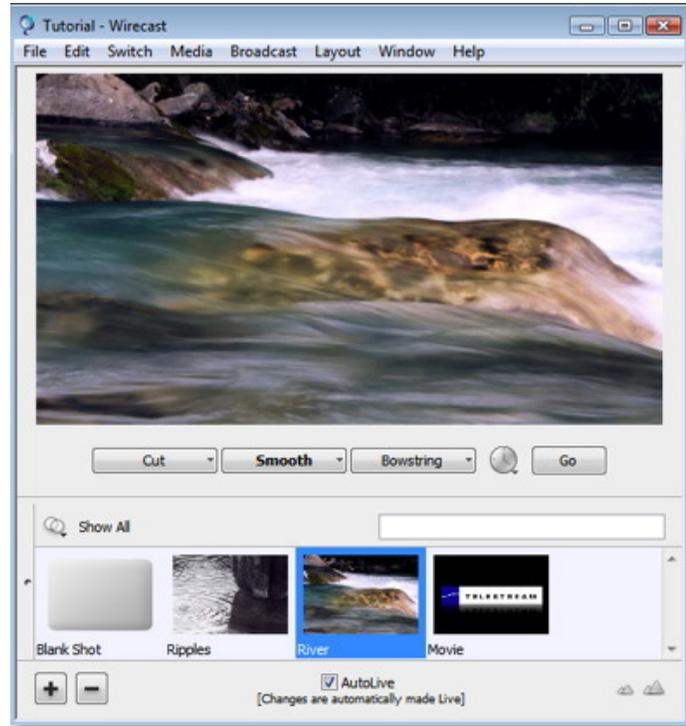
A 'Shot Logo' is just a shot with your logo in it.

To create one, you simply take an existing shot and add your company logo to it.

Step-by-step directions.

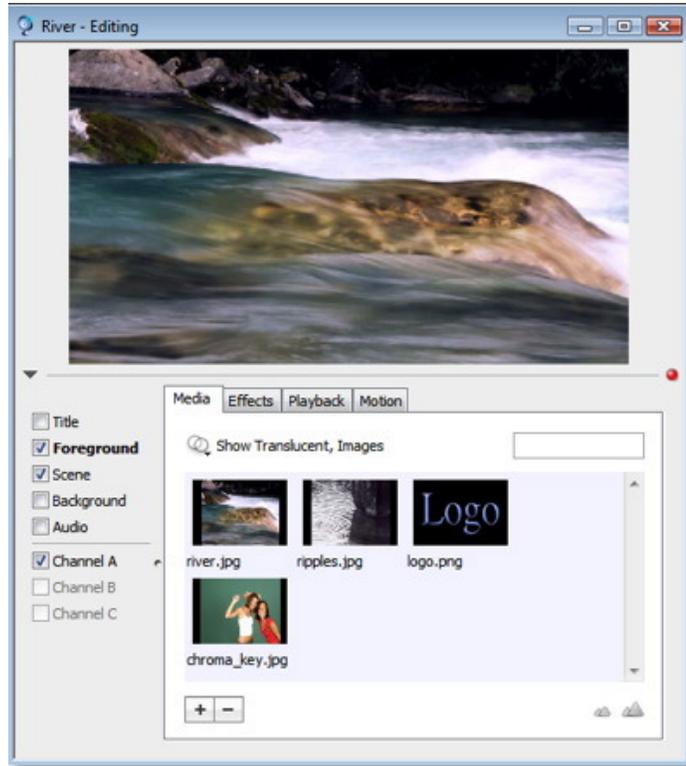
- **Double click on a shot**

Here we pick the shot "Ripples" from our tutorial. (You can open the tutorial by selecting "Create Document from Tutorial" from the Help menu).



- **Select the Foreground shot element**

After double-clicking, click on the "Foreground" text in the bottom left of the screen. Your window should look like this:



- **Add your logo**

You can drag and drop your logo to the list shown at the bottom, or you can use the



button.

In this example, we'll just selected "logo.png", and we get the following in the preview at the top of the edit window:



- **Position your Logo**

Most likely, you won't want the Logo directly in the middle, so to position it, you need to select "Position" from the tab in the middle of the edit window, as shown below. Below, we have positioned the logo to the top-left, and doubled it in size.

- *Move Media* -- Use 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 the section called "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**

Close the edit window, and click on the River logo (or use the Go button) to make your changes live.

You'll notice that the River now has the logo embedded in the shot:

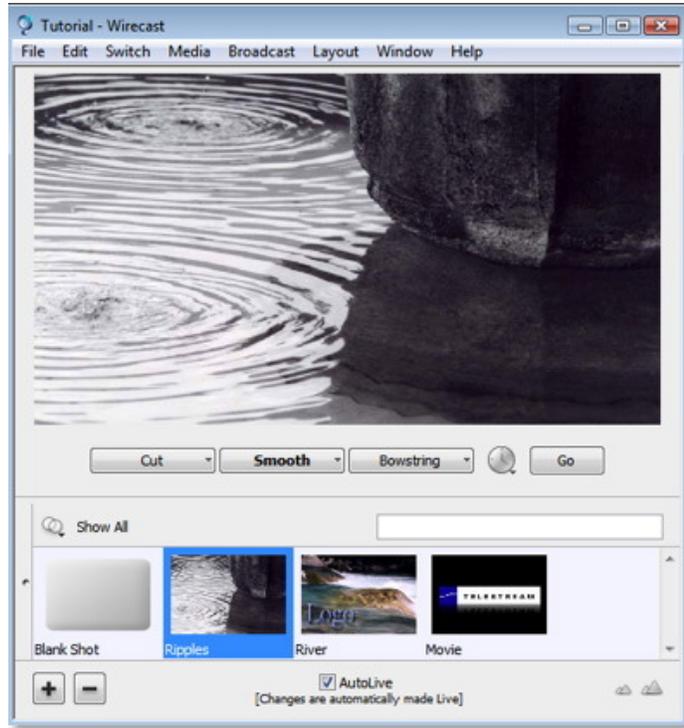


- **Change shots on the Normal layer**

Notice that when you change to another shot, the "logo" disappears.

This is because the logo is embedded in the shot.

In fact, you could define the logo to have the section called "Overview" and when you change shots, the logo would behave accordingly.



Chapter 8. Broadcasting

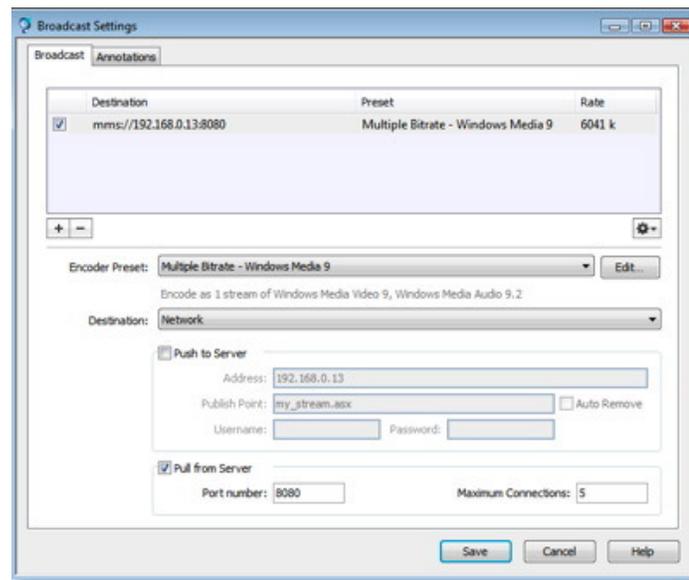
Overview

Before you can broadcast with Wirecast, you must configure your broadcast settings.

After you have configured the broadcast settings, broadcasting is as simple as selected the "Start Broadcast" from the "Broadcast" menu (or Ctrl+B).

If you try to broadcast without first configuring, Wirecast will open the Broadcast Settings window.

The "Broadcast Settings" window is available from the "Broadcast" menu in Wirecast (or Ctrl+Y), and looks like this:



There are three main sections to this window:

Multiple broadcast settings.

Wirecast allows you to specify many broadcast settings for your presentation.

This means you may configure Wirecast to, for example, broadcast two different bit-rates to your viewers (e.g., one for modem, one for DSL). Or you may record to disk with different encoders.

You can even broadcast QuickTime and Windows Media 9 and Windows Media 8 all at the same time, if you have enough CPU to perform the real-time encoding.

The top of the broadcast settings window is a list of the current settings you have configured.

The checkbox in this list defines whether that particular broadcast setting will be used.

You may add as many broadcast settings as you wish, however, be aware that encoding video is very CPU intensive, and the higher quality settings you choose, the more CPU the encoder (codec) will need to honor your settings.

The Gear icon holds actions that help you by creating reference movies you can distribute to your viewers. See each Destination section for details on what the each Action menu does.

There are two main things you need to configure when broadcasting.

Encoder Preset.

The Encoder Preset defines how your presentation is "encoded" or "compressed". There are a myriad of options available, but Wirecast simplifies this process by providing several simple presets to choose from.

See the section called "Encoder Presets" for details.

Broadcast Destinations.

When you broadcast with Wirecast, you must broadcast to a specific destination. A destination could be the disk (Record to Disk), or a server.

Each encoding preset uses a different broadcast technology (QuickTime, Windows Media, etc).

The destinations described below depend on the technology in the Encoder Preset you have chosen.

Broadcast with Windows Media destination.

There are two destinations offered with Windows Media:

- Network
The stream will be broadcast 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 the section called "WM - Push To Server" option.

To use a your machine as a server, you need to use the the section called "WM - Pull from Server" option.

- Record to Disk
You may also record your presentation to disk. You can do this whether you are broadcasting to another machine or not.

See the section called "Record to disk" for details.

Broadcast with QuickTime destination.

There are four destinations offered with QuickTime:

- QuickTime/Darwin Streaming Server
The QuickTime Streaming Server (or Darwin Streaming Server) resides on a second computer and acts as what is called a "reflector". From within Wirecast, you send your broadcast to this one server and it, in turn, sends the broadcast to the many viewers that you have.

You must use the QuickTime/Darwin Streaming Server if you want to broadcast a QuickTime stream live to multiple viewers.

See the section called "QT - Streaming Server" for details.

Note

If you want to archive your stream at the same time, add a second broadcast setting and use "Record To Disk" for that setting.

- One second specific Computer.
You can configure Wirecast to send a broadcast to a single second machine. This is called "Unicasting".

See the section called “QT - Unicast” for details.

- All computers on your local network
You can configure Wirecast to broadcast on your local network such that any computer on your local network can listen to the broadcast. This is called "Multicasting".

You cannot Multicast to the Internet, only to the local network on which your machine resides.

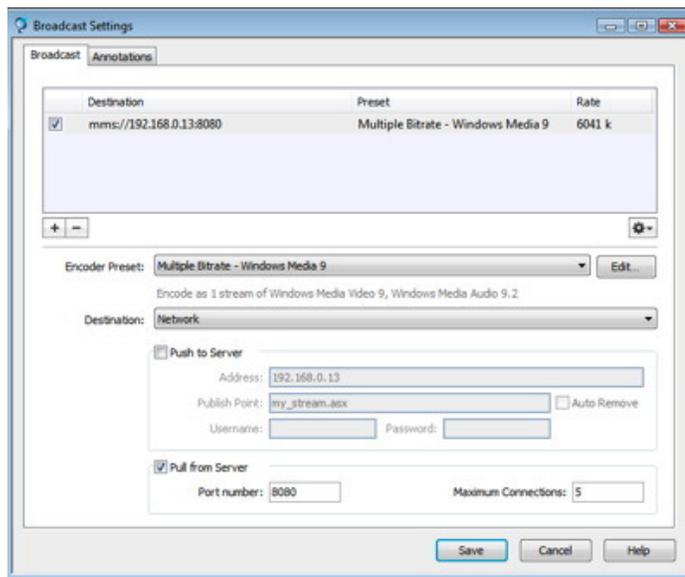
See the section called “QT - Multicast” for details.

- Record to Disk
You may also record your presentation to disk. You can do this whether you are broadcasting to another machine or not.

See the section called “Record to disk” for details.

Encoder Presets

The Encoder Preset popup is found in the middle of the Broadcast Window:



Wirecast offers several presets by default.

See the section called “Broadcast Settings” in the Good Presentations chapter for details on selecting a good encoder.

The first choice you need to make is whether you'll be using Windows Media or QuickTime (or both) as the broadcasting technology.

This decision mostly depends on what you expect your viewers will want to view the stream with.

Given enough bandwidth, you can stream to both QuickTime and Windows Media by selecting adding to broadcast settings.

Windows Media Settings.

With Windows media the first choice you need to make is whether you will use Windows Media 8 or Windows Media 9.

Again, this choice depends on what you expect the minimum spec to be for your users.

If your CPU can encode both in real time, you can choose to broadcast both Windows Media 8 and Windows Media 9 at the same time.

See ??? for details on how to choose the amount of bandwidth for Windows Media.

QuickTime Settings.

In its simplest form, you need to choose the minimum connection speed your viewers (or you) will have. If you or any of your viewers will have a modem, you should choose one of the modem. If all of you have at least DSL or cable, then you can choose a higher speed.

Motion simply means whether your broadcast will have a lot of motion in it or not. If you're doing an interview, then most likely its going to be Low Motion. If you are broadcasting jugglers, High Motion is your ticket.

- Modem
For use when you or your viewers have only a modem connection.
- DSL / Cable
When you and all your viewers have at least a DSL or Cable connection.
- LAN
For use in a company/school environment when all of your viewers are on the same LAN as you.

If you are going to only Record To Disk and your viewers will download the file from your server, then you may choose to encode for "LAN" as well. You can do this because your viewers are not trying to download the file in real-time.

WM - Push To Server

How to access.

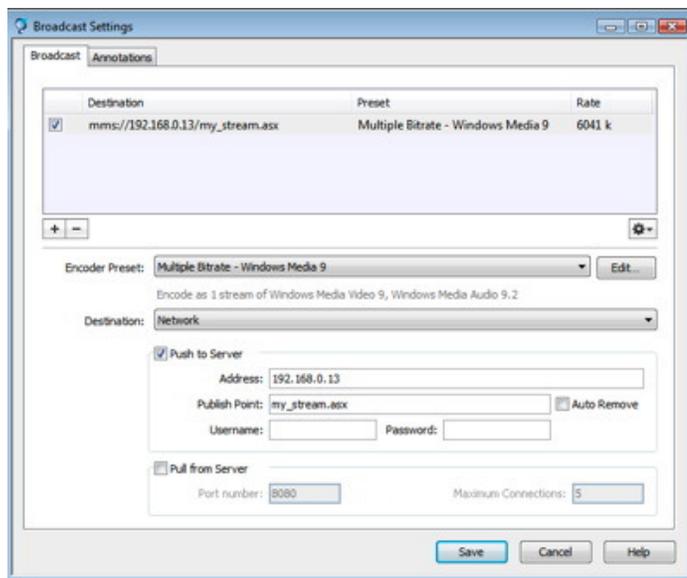
To access this window, select "Broadcast Settings" from the "Broadcast" menu (or Ctrl+Y). Then, from the "Encoder Preset" popup, select any of the "Windows Media" based presets, and check the "Push to Server" checkbox.

Push to Server usage.

To use this Push To Server, you must have access to a Windows Media Server, either in your organization or housed by an ISP (search the internet for "Streaming Windows Media Server").

This is the "industrial strength" way of creating a stream as it puts 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.



- **Address**
The internet address of the Windows Media Server you will use to broadcast.
- **Publish Point**
The name of the file that will be put on the server, and that will be used as part of the URL that your users will use.

Wirecast cannot know the resulting URL that your users will 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, given the Publish Point.

- **Auto Remove**
If you check this checkbox, the file used as the publish point will be removed when the broadcast is over.
- **Username / Password**
The user name and password for the Windows Media Server. Contact your Windows Media Server administrator for this.

If there is no user name/password required, leave these field empty.

WM - Pull from Server

How to access.

To access this window, select "Broadcast Settings" from the "Broadcast" menu (or Ctrl+Y). Then, from the "Encoder Preset" popup, select any of the "Windows Media" based presets, and check the "Pull from Server" checkbox.

Pull from Server usage.

This option turns your local computer into a mini Windows Media Server -- you can broadcast immediately.

Although very useful for some scenarios, there are some caveats:

- **Maximum 50 users** - You cannot have more than 50 connected users

- Bandwidth - You must have enough bandwidth between the machine Wirecast is on and all of your viewers.
- CPU - The machine is acting as a server and to that extent, some CPU is used per connection (though not much).

The largest issue with using 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.

If you have a DSL connection to the internet and you want to broadcast a 200k stream to 20 viewers, you will simply not have enough upload bandwidth to accommodate this.

Note

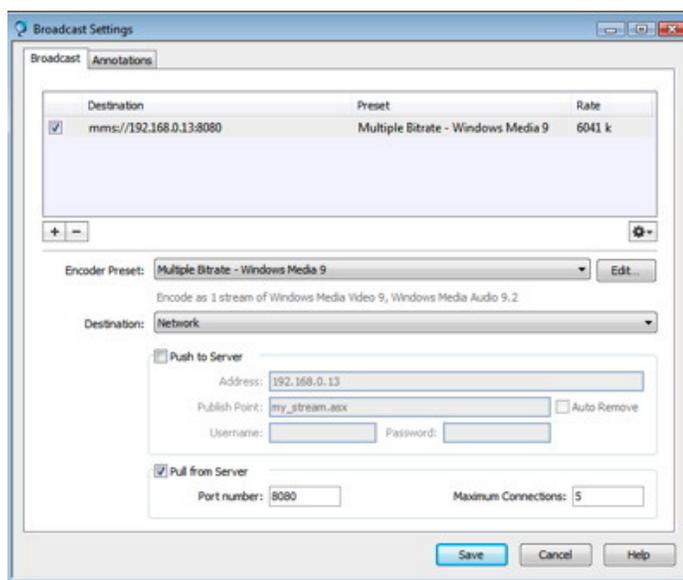
Be aware that when you use Wirecast with an internet connection what matters is your upload bandwidth. Most ISP businesses offer packages that have a higher download than upload bandwidth (e.g., a 512k DSL package is often only 256k upload).

Configuration.

To use this option, simply set the port number that your users will use to connect to your machine. They will connect to your machine by using the "Open URL" option in Windows Media Player, and enter an URL like this: mms://192.168.1.67:8080 (assuming your machine's IP address is 192.168.1.67 and the port you set below is 8080).

Note

The URL "mms://" does not work with the Macintosh version of Windows Media Player, and you must use "http://" instead.



- Port Number
The port on your machine 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.

Note

Be aware that if you have any Firewall software installed, you will need to enable the port entered here.

- **Maximum Connections**

This is the maximum connections your server will accept.

There is a hard maximum of 50 users.

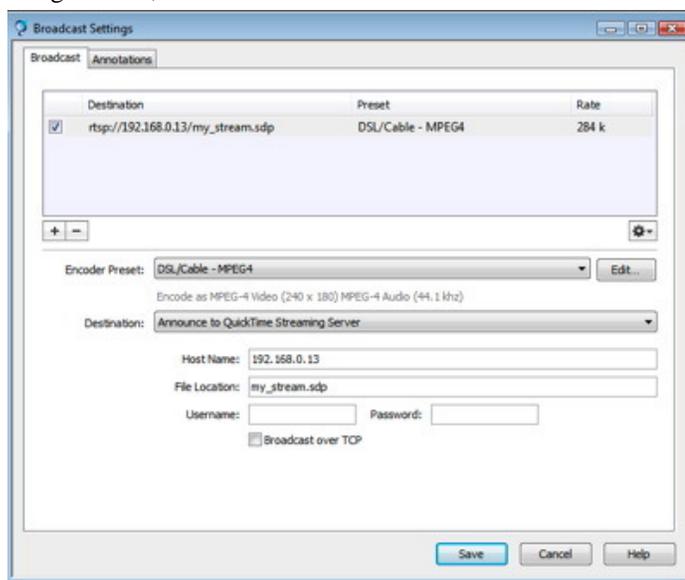
Your CPU will be somewhat affected by the number of users that you have connected, and it is for this reason you may wish to limit the number of connections.

QT - 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 server then sends the stream on to your viewers. This document does not describe configuring or maintaining QuickTime / Darwin Streaming Server.

To stream to a QuickTime / Darwin Streaming Server, you need to select the Destination of "Announce to QuickTime Streaming Server", as shown below:



Destination.

To send to the QuickTime / Darwin Streaming Server, you must have "Announce to QuickTime Streaming server" selected in the Destination popup.

Host Name.

This is the name (or IP address) of the host computer that your Streaming Server is running.

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 to use, this file name will be 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 will need to use this URL: "rtsp://www.stream.com/my_stream.sdp". This information is shown in the bottom of the window as you configure the settings.

Username.

If your Streaming Server requires it, this is the user name to use.

Password.

If your Streaming Server requires it, this is the password that is sent.

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 will receive the broadcast.

UDP is faster, but if you are using a Firewalls or are behind a NAT, you may not be able to use UDP and in that case you should use TCP.

In other words, if Wirecast can send UDP to the server without errors, use it. It's faster.

Actions.

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

- *Open in QuickTime Player*

The stream is opened in QuickTime Player.

This is a handy shortcut for you and saves you from typing "rtsp://..." into QuickTime Player.

- *Save Movie*

A QuickTime movie is saved to disk which contains a reference to the configured stream.

This Movie file is very small and only 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.

You can send this movie to your users or post on your website so that your users can view your stream when you are broadcasting.

- *Save Multi-stream Reference Movie*

A QuickTime movie is saved to disk which contains a reference to all of your QuickTime Streaming Server streams.

You can send this movie to your users or post on your website so that your users can view your streams. QuickTime will then 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.

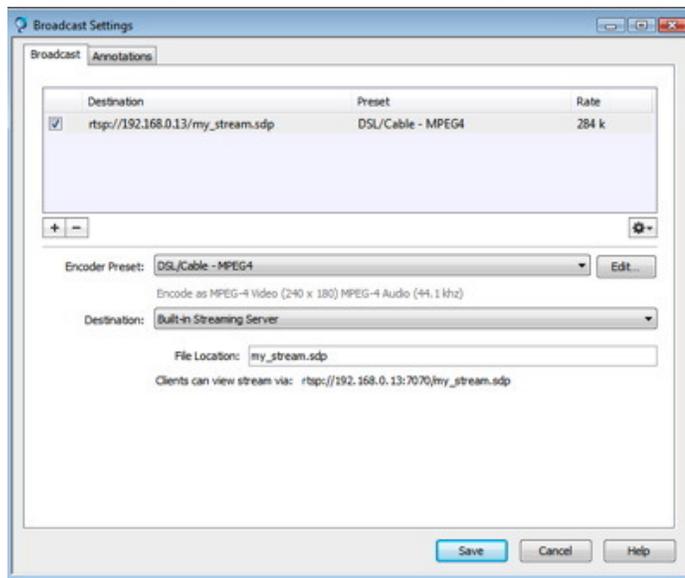
QT - Built-in Server

Wirecast ships bundled with the freely available Darwin Streaming Server from Apple.

Be aware that when you use the built in Streaming Server it is running on your local machine and will use your local machines resources, thus slowing down Wirecast.

In addition each of your users will connect directly to your machine. If you don't have a lot of bandwidth (say you are on a DSL and your viewers are on the internet), you will not 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 will want to use a hosted QuickTime 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 to use, this file name will be 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 will need to use this URL: "rtsp://www.stream.com/my_stream.sdp". This information is shown in the bottom of the window as you configure the settings.

Actions.

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

- *Open in QuickTime Player*

The stream is opened in QuickTime Player.

This is a handy shortcut for you and saves you from typing "rtsp://..." into QuickTime Player.

- *Save Movie*

A QuickTime movie is saved to disk which contains a reference to the configured stream.

This Movie file is very small and only 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.

You can send this movie to your users or post on your website so that your users can view your stream when you are broadcasting.

- *Save Multi-stream Reference Movie*

A QuickTime movie is saved to disk which contains a reference to all of your QuickTime Streaming Server streams.

You can send this movie to your users or post on your website so that your users can view your streams. QuickTime will then 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.

QT - Unicast

Wirecast lets you broadcast to a specific machine. This is called "Unicast".

Unicast Steps.

You must perform these steps to broadcast to a specific machine:

- **Configure The Broadcast Settings**
See for details on this.
- **Save the SDP file**
After you are done configuring the screen, you need to save an SDP file.

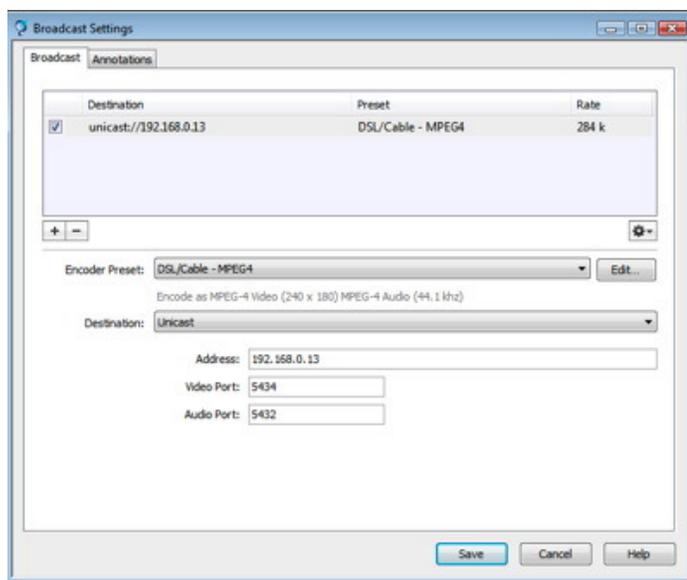
This file is used by QuickTime client to know how the Broadcast is configured. Any time you change **anything** on this page, you need to re-create the SDP file (this includes changing the Encoder Preset).

To save the SDP file, select "Save SDP File" from the Action menu (Gear icon) on this page.

- **Give the SDP file to the viewer.**
You need to send the SDP file to the viewer and have them open it on their machine with QuickTime Player.
- **Save the settings**
Press the "Save" button to save your changes.
- **Start your broadcast**
Select the "Start Broadcast" menu from the "Broadcast" Menu. Or, on Macintosh, you can Press the "Broadcast" button in the Toolbar area.

Configuring Broadcast Settings for Unicast.

To do so, you need to select "Unicast" from the Destination popup as seen below:



Address.

The domain name or IP address of the machine that you will unicast to.

Video Port.

The Video port that you will broadcast to on the machine.

Audio Port.

The Audio port that you will broadcast to on the machine.

Actions.

When you have "Unicast" selected, the gear icon might have these actions:

- *Save SDP File*

You must create an SDP file every time you change any option on this page (including the encoder preset).

The SDP file must be given to the user on the machine that will listen to your broadcast.

Your remote viewer should open the SDP file using QuickTime player.

- *Save Multi-stream Reference Movie [optionally present]*

If you have other settings which use "Announce To QuickTime Streaming Server" then this menu option is available.

Note

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

QT - Multicast

Wirecast lets you broadcast to your local network so that any machine on that network can view the broadcast. This is called "Multicast".

Multicast Steps.

You must perform these steps to broadcast to a specific machine:

- **Configure The Broadcast Settings**
See for details on this.
- **Save the SDP file**
After you are done configuring this setting, you need to save an SDP file.

This file is used by QuickTime client to know how the broadcast is configured.

Any time you change **anything** in this window, you need to re-create the SDP file (this includes changing the Encoder Preset).

To save the SDP file, select "Save SDP File" from the Action menu (Gear icon) on this page.

- **Give the SDP file to the viewer.**
You need to send the SDP file to the viewer and have them open it on their machine with QuickTime Player.
- **Save the settings**
Press the "Save" button to save your changes.
- **Start your broadcast**
Select the "Start Broadcast" menu from the "Broadcast" Menu. Or, on Macintosh, you can Press the "Broadcast" button in the Toolbar area.

How Multicast Works.

Your broadcasting computer simply starts sending data across your local network, defining that the data is "multicast" meaning that it has no destination machine.

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 way, clients can choose between the multicast streams available.

The multicast protocol uses a unique address (one for video, one for audio in our case). Although this unique address looks like a TCP/IP address, it is not. It is simply a way to define uniqueness amongst all "multicast" data flowing through your network.

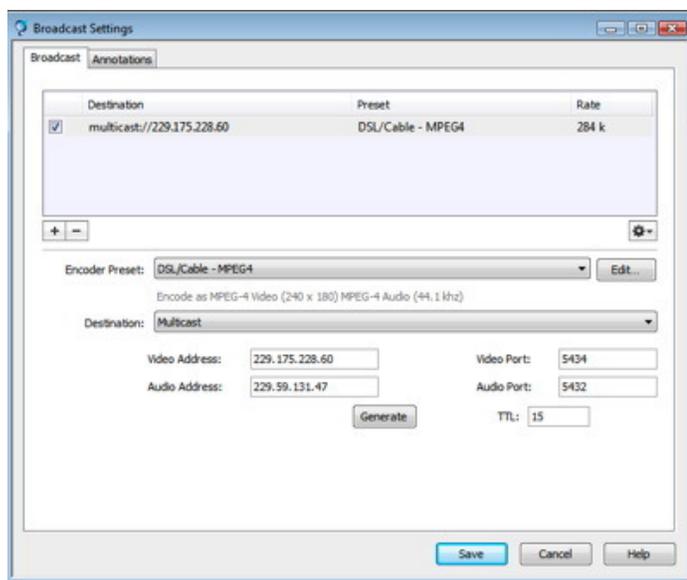
Now that your broadcasting computer is streaming this data through your local network, any computer on your local network can listen in.

The SDP file becomes the glue between your broadcast machine and your client machines. The SDP file contains information such as what the multicast addresses are, what the encoding format is, etc.

You cannot multicast over the internet. It is only for your local network only.

Configuring Broadcast Settings for Multicast.

To configure for Multicast you need to select Multicast from the Destination popup as seen below:



Video Address.

The unique address the multicast broadcast will use for video.

Although this looks like an internet address, it is not. This address can be anything, but must be unique amongst applications on your network that use the "multicast" protocol. See "How Multicast Works" for more information.

This field is filled with random numbers when first configured.

Video Port.

The port that the multicast protocol uses for video. Normally, this is 5434.

Audio Address.

The unique address the multicast broadcast will use for video.

Although this looks like an internet address, it is not. This address can be anything, but must be unique amongst applications on your network that use the "multicast" protocol. See "How Multicast Works" for more information.

This field is filled with random numbers when first configured.

Audio Port.

The port that the multicast protocol uses for audio. Normally, this is 5432.

Actions.

When you have "Multicast" selected, the gear icon might have these actions:

- *Save SDP File*

You must create an SDP file every time you change any option on this page (including the encoder preset).

The SDP file must be given to the user on the machine that will listen to your broadcast.

Your remote viewer should open the SDP file using QuickTime player.

- *Save Multi-stream Reference Movie [optionally present]*

If you have other settings which use "Announce To QuickTime Streaming Server" then this menu option is available.

Note

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

Record to disk

You can record your broadcast to disk at any time. You do not even need to be broadcasting to record to disk.

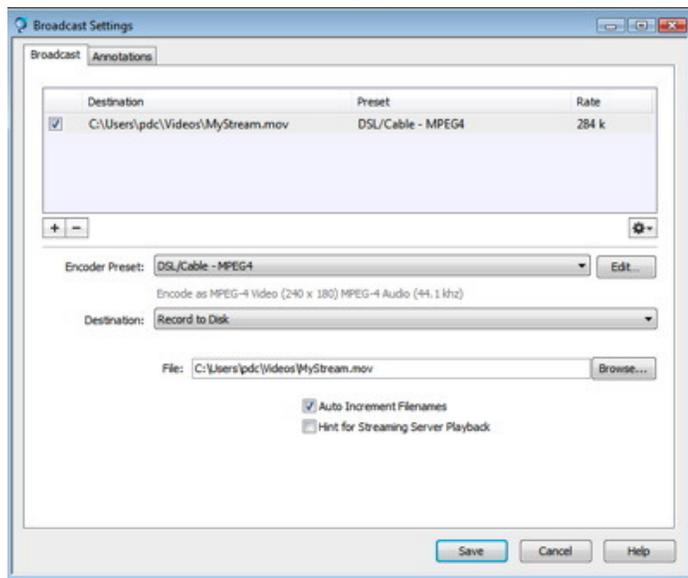
This means that you can use Wirecast as a way to create movies you'll post on your website.

In addition, you can turn on and off Record To Disk independent of your broadcast.

Configuring for Record to Disk.

You must first configure Wirecast to record to disk. To do so, open up the "Broadcast Settings" window, which you'll find in the "Broadcast" menu (or Ctrl+Y).

Then select "Record To Disk" from the Destination popup. The window should look like this:



File.

This is the file that Wirecast will use to save your broadcast to disk.

If you are using Auto Increment, then your files will have numbers appended to the end of them.

Browse.

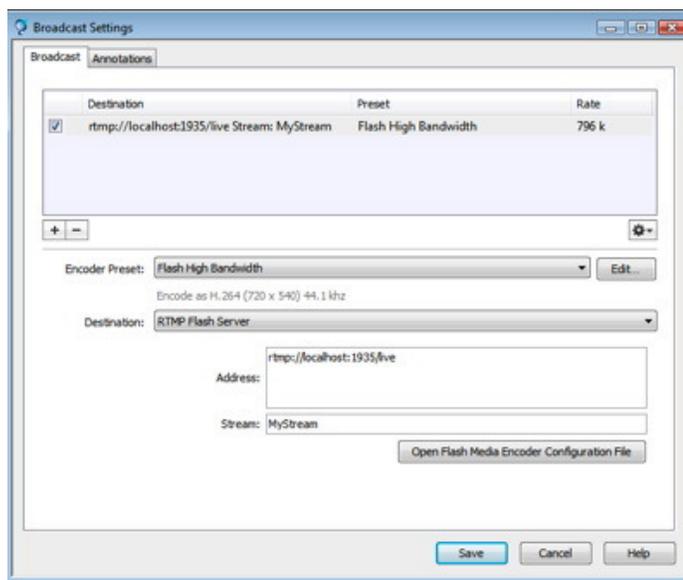
You can select a file by using the Browse feature.

Auto Increment Filenames.

When this feature is on, Wirecast will automatically put numbers on the end of your filename.

This enables you to start and stop your broadcast several times; Wirecast will generate a different movie file for each "segment" you create.

Flash Media Server



Streaming to a Flash Media Server.

Wirecast can stream to an RTMP/H.264 compatible streaming server (Flash Media Server, Wowza Media Server, etc).

Wirecast only supports H.264 streaming over RTMP.

Flash Players earlier than Flash 9 Update 3 (Dec 2007) may not be able to view the H.264 based streams.

Note

Wirecast does not support alternative RTMP protocols (RTMPS, etc). Wirecast does not support Vp6 or other Flash streaming codecs.

Address.

Enter the address to the RTMP server you will stream to.

This is the same as the "FMS URL" in Flash Media Server.

Stream.

Enter the name of the stream to broadcast as.

This is the same as the "Stream" in Flash Media Server.

Open Flash Media Encoder Configuration File.

Wirecast can import a Flash Media Encoder Config file (XML File).

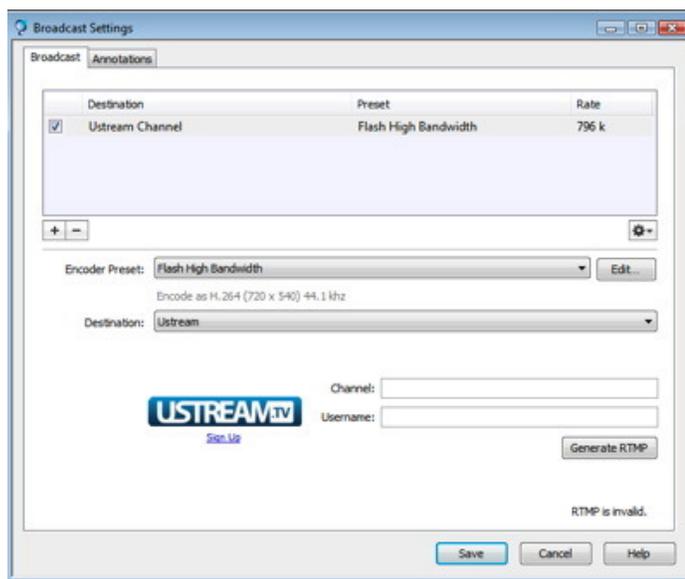
Simply select the configuration file (either version 2.5 or version 3.0) and Wirecast will read the Address and Stream from that file.

Many online streaming services offer a FME Config Files, and Wirecast should be able to also use these files.

Note

No other information is used from the XML configuration file except for the Address and Stream.
No Encoding information is imported.

Flash to Ustream



Streaming to Ustream.

To Stream to Ustream, enter your channel and username and press the "Generate RTMP" button

Wirecast will configure the RTMP Stream and address for you, allowing you to easily stream to Ustream from Wirecast.

Channel.

This is either the URL to your channel (<http://www.ustream.tv/channel/MyChannel>), or the channel name itself (*MyChannel*).

Username.

Your Ustream username.

As of the writing of this documentation, Ustream did not yet support OpenIDs via this API. The work around is to download the FME Configuration File from Ustream and use the the section called "Flash Media Server" interface.

Generate RTMP.

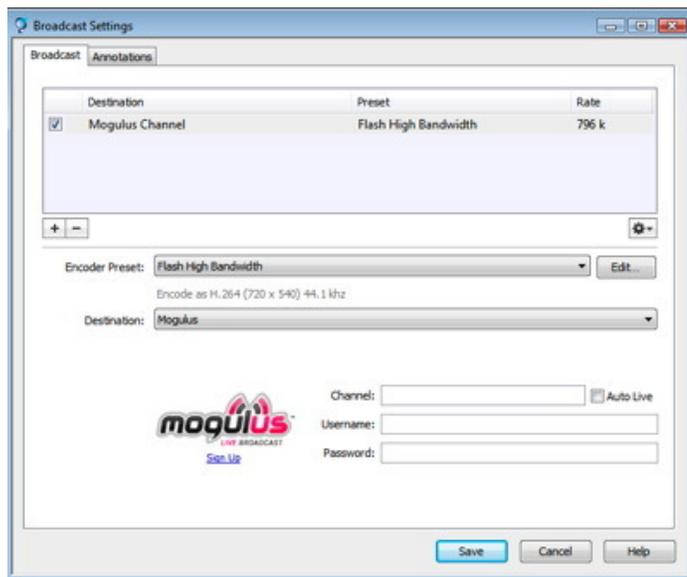
After you have entered your channel and username, press "Generate RTMP" to generate the RTMP URL.

You only need to do this one time, as Wirecast will store the channel information for future streams.

Sign Up.

You can sign up with Ustream by pressing the Ustream icon or by pressing "Sign Up"

Flash to Mogulus



Streaming to Mogulus.

To Stream to Mogulus, enter your channel, username, and password. Then save the dialog and you are ready to stream.

Channel.

This is the name of your channel. This is the last part of the URL that is your channel.

For example, if your channel is <http://www.mogulus.com//MyChannel> then your channel name is My-Channel

Auto Live.

If Auto Live is ticked, Wirecast will request Mogulus to start your stream automatically.

Username.

Your Mogulus username.

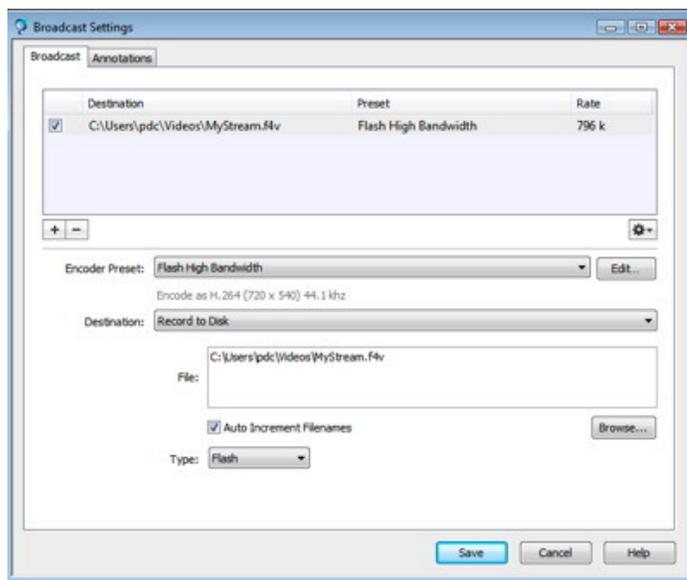
Password.

Your Mogulus password.

Sign Up.

You can sign up with Mogulus by pressing the Mogulus icon or by pressing "Sign Up"

Flash Save To Disk



Saving Flash files to disk.

Wirecast offers the ability to save your output to disk as either a Flash or MPEG-4 file.

Destination.

To send to the QuickTime / Darwin Streaming Server, you must have "Announce to QuickTime Streaming server" selected in the Destination popup.

File.

Type the path to your file or use the Browse... button to locate the file.

Browse...

Press the Browse... button to locate the file on disk via the operating system File dialog.

Auto increment Filenames.

If you check this checkbox, then everytime you start recording to disk using this setting, a new file is created.

If you do not check this checkbox, then your previous file will be overwritten.

Type.

You can choose either Flash (.F4V) or MPEG-4 (.M4V) file types. Only H.264 is supported when recording to disk.

Annotation settings

Media players often offer a feature which allows the viewer to see details about the broadcast they are viewing.

For example, these can be seen in QuickTime Player under "Get Movie Properties" menu item in the "Movie" menu. Select "Movie" than "Annotations" to see the details.

In Windows Media Player 10, the Title is used as the name of the broadcast in the Now Playing List. You can see the other properties by right clicking on the entry in the Now Playing List and selecting "properties" then pressing the "Content" tab.

These Annotations can be configured for your broadcast in Wirecast.

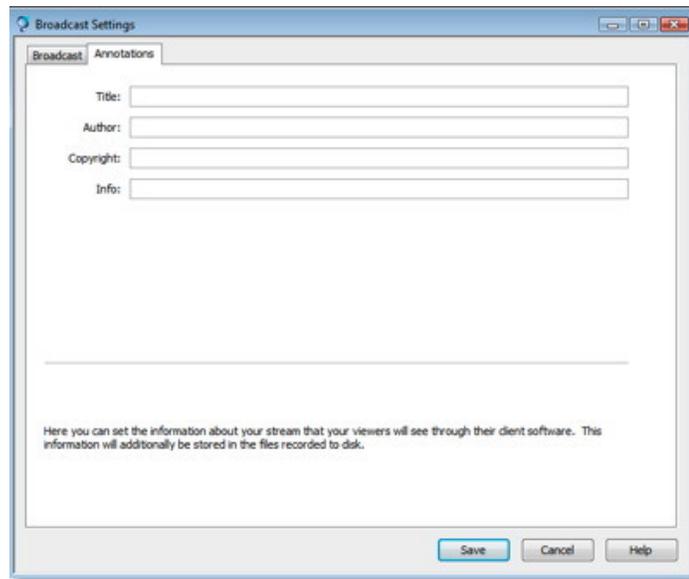
When you configure annotations, they apply for all streams at the same time. This means changing your annotations is very easy when you have multiple streams.

To configure the annotations, open up the "Broadcast Settings" window, which you'll find in the "Broadcast" menu (or Ctrl+Y).

Select "Annotations" from the tab.

Configuring Annotations.

This is what the annotations window looks like:



Title.

This is the title of the broadcast.

Author.

This is the author of the broadcast.

Copyright.

This is any copyrights that are on the broadcast.

Info.

This is any additional info you'd like to associate with the broadcast.

Chapter 9. Editing Encoder Presets

Overview

Wirecast Supports a wide variety of encoders (also known as "codecs").

An Encoder is what compresses the output of Wirecast for Broadcast. Without an encoder, the uncompressed data that you would output would be too great to attempt to broadcast across the network. This is why encoders are so important.

Modifying Encoder parameters is for advanced users.

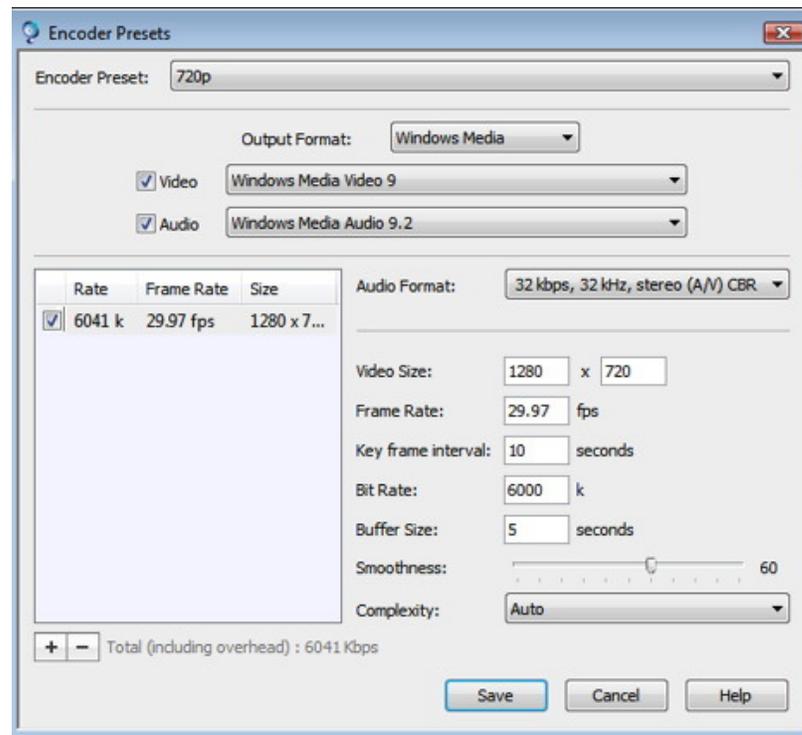
The settings that an encoder uses can be very complex, and there are a myriad of encoders available.

The choices that you have for choosing and configuring an encoder are therefore vast. It is for these reason that Wirecast offers the most common settings for the encoders.

However, if you wish to go beyond the default presets, Wirecast offers you the ability to do so.

The Encoder Presets Window.

The "Encoder Presets" window can be opened from the "Window" menu in Wirecast, and looks like this:



Changing the preset you are modifying.

At the top of the window the "Encoder Preset" popup shows which encoder preset you are currently editing. Simply use the popup to select the preset you wish to edit.

Modifying Wirecast default presets.

We suggest that you leave the existing presets as they are so that you can always refer back to the standard presets.

Creating New Presets.

To create a new preset, you must make a copy of an existing preset. You can do this by selecting "Save Preset..." from the "Encoder Preset" popup.

Audio and Video Configuration Details.

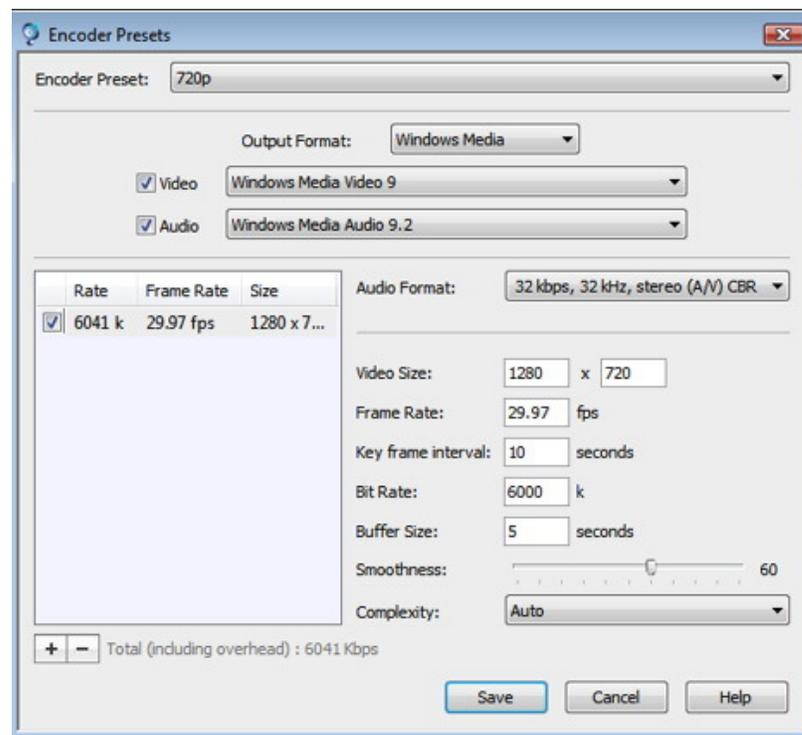
You can find details of configuring the common settings for the section called "QuickTime Video" and the section called "QuickTime Audio".

Windows Media Encoders

To modify a preset, you need to open the "Encoder Presets" window which can be found under the "Window" menu in Wirecast.

Be sure to select "Windows Media" from the "Output Format".

See the the section called "Overview" for general information on the topic of encoder presets.



Changing the preset you are modifying.

At the top of the window the "Encoder Preset" popup shows which encoder preset you are currently editing. Simply use the popup to select the preset you wish to edit.

Video Enabled.

Wirecast offers the ability to optionally encode video for your broadcast. If you do not want your broadcast to include any video, simply uncheck "Video Enabled". This is the preferred method of producing audio-only broadcasts, as you are ensured that no video data is put into the stream (even "blank" video data can use bandwidth).

Encoder.

This is the Encoder (sometimes called "Codec" or "Compressor") you wish to use.

Options.

This is the Encoder specific options. Many encoders have options that are specific to the encoder that you can modify. It is beyond the scope of this documentation to describe all of the possible encoder options.

Depth.

Some Encoders allow you to modify the Depth (or "Color Depth" or "Bits per Pixel") of the broadcast. Picking a higher color depth will result in larger output, but lesser quality color. It is beyond the scope of this document to describe all of the options an encoder may offer you here.

Width.

This is the width of your resulting broadcast.

Lock to 16:9.

This checkbox will lock your output size to 16:9; as you change the width, the height will be automatically generated.

Height.

This is the height of your resulting broadcast.

Quality.

Many encoders allow you to adjust the Quality. Generally, encoders make a trade-off between Quality and Speed (how much CPU is used during encoding). Sometimes lower quality will also affect the bandwidth used.

Note

Some encoders may ignore this setting altogether.

Frames Per Second.

This is the desired frame per second (FPS) of your broadcast. Note that the encoders try to stay "near" this value, and you are not guaranteed to always get the exact value you enter here.

Keyframe.

If you imagine a movie as a set of images one after another, then each image is called a frame.

To compress your video data, most compressors take a frame and make it a "reference" or "key".

This key frame (Keyframe) is sent as part of the broadcast, and all of the data after that keyframe is relative to that Keyframe.

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's harder and harder for the compressor to make good "difference" information, especially if you have a lot of motion in the video. Another drawback is if your viewer happens to miss a Keyframe, the data that their player will show will not be comprehensible until the next Keyframe comes along.

You can control how often the encoder makes a new keyframe. Some encoders use this more as a "hint" as to when to send Keyframes.

Change this parameter to output more or fewer keyframes for your broadcast.

The more keyframes your broadcast has, the more bandwidth it will take (as less compression can occur). However, more keyframes means motion in your video stream is better supported.

Limit data rate to.

You can request that the encoder limits the output to a specific rate.

Note

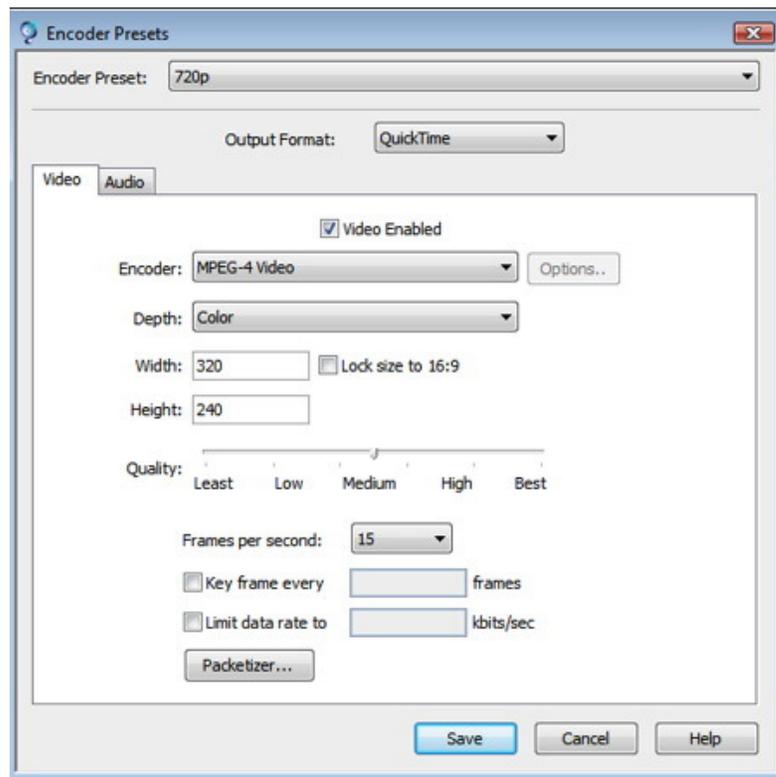
Some encoders use this as a "hint", not as an absolute value.

QuickTime Video

To modify a preset, you need to open the "Encoder Presets" window which can be found under the "Window" menu in Wirecast.

Be sure to select "QuickTime" from the "Output Format".

See the the section called "Overview" for general information on the topic of encoder presets.



Changing the preset you are modifying.

At the top of the window the "Encoder Preset" popup shows which encoder preset you are currently editing. Simply use the popup to select the preset you wish to edit.

Video Enabled.

Wirecast offers the ability to optionally encode video for your broadcast. If you do not want your broadcast to include any video, simply uncheck "Video Enabled". This is the preferred method of producing

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Options.

This is the Encoder specific options. Many encoders have options that are specific to the encoder that you can modify. It is beyond the scope of this documentation to describe all of the possible encoder options.

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Width.

This is the width of your resulting broadcast.

Height.

This is the height of your resulting broadcast.

Quality.

Many encoders allow you to adjust the Quality. Generally, encoders make a trade-off between Quality and Speed (how much CPU is used during encoding). Sometimes lower quality will also affect the bandwidth used.

Note

Some encoders may ignore this setting altogether.

Frames Per Second.

This is the desired frame per second (FPS) of your broadcast. Note that the encoders try to stay "near" this value, and you are not guaranteed to always get the exact value you enter here.

Keyframe.

If you imagine a movie as a set of images one after another, then each image is called a frame.

To compress your video data, most compressors take a frame and make it a "reference" or "key".

This key frame (Keyframe) is sent as part of the broadcast, and all of the data after that keyframe is relative to that Keyframe.

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's harder and harder for the compressor to make good "difference" information, especially if you have a lot of motion in the video. Another drawback is if your viewer happens to miss a Keyframe, the data that their player will show will not be comprehensible until the next Keyframe comes along.

You can control how often the encoder makes a new keyframe. Some encoders use this more as a "hint" as to when to send Keyframes.

Change this parameter to output more or fewer keyframes for your broadcast.

The more keyframes your broadcast has, the more bandwidth it will take (as less compression can occur). However, more keyframes means motion in your video stream is better supported.

Limit data rate to.

You can request that the encoder limits the output to a specific rate.

Note

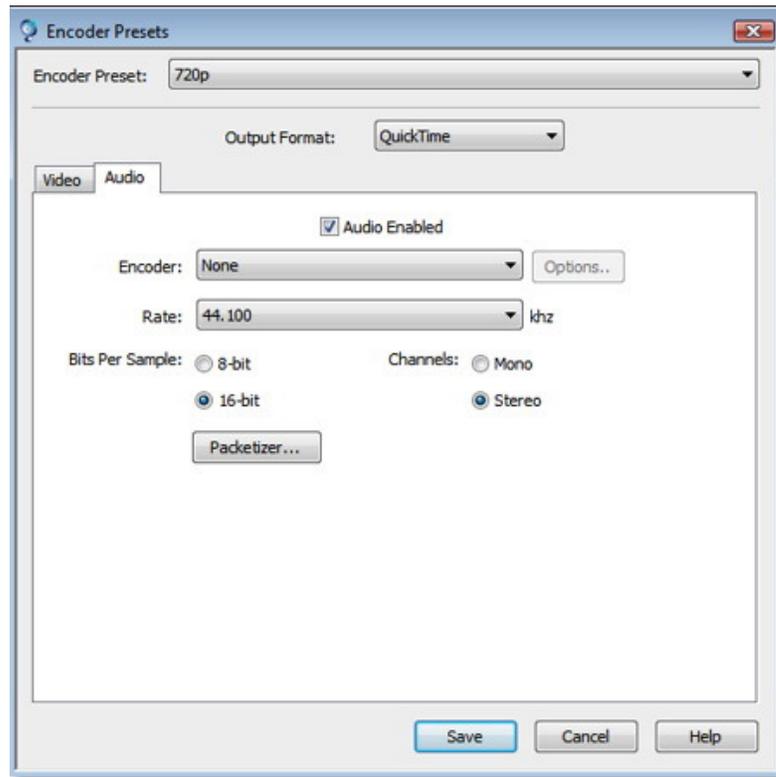
Some encoders use this as a "hint", not as an absolute value.

QuickTime Audio

To modify a preset, you need to open the "Encoder Presets" window which can be found under the "Window" menu in Wirecast.

Be sure to select "QuickTime" from the "Output Format".

See the the section called "Overview" for general information on the topic of encoder presets.



Changing the preset you are modifying.

At the top of the window the "Encoder Preset" popup shows which encoder preset you are currently editing. Simply use the popup to select the preset you wish to edit.

Audio Enabled.

Wirecast offers the ability to optionally encode audio for your broadcast. If you do not want your broadcast to include any audio, simply uncheck "Audio Enabled". This is the preferred method of producing video-

only broadcasts, as you are ensured that no audio data is put into the stream (even "blank" audio may use bandwidth).

Encoder.

This is the Encoder (sometimes called "Codec" or "Compressor") you wish to use.

Options.

This is the Encoder specific options. Many encoders have options that are specific to the encoder that you can modify. It is beyond the scope of this documentation to describe all of the possible encoder options.

Rate.

This is the rate of audio to use. The higher the value you choose, the better quality, but more bandwidth is used.

Bits per Sample.

This is how much data each "sample" of audio uses. The higher the value you choose the better quality you will get, but more band width will be used.

Channels.

You can choose to broadcast in mono or in stereo.

Mono uses less bandwidth than Stereo but Stereo is of course much nicer to listen to...

Chapter 10. Desktop Presenter

Overview

Desktop Presenter.

The Desktop Presenter is a small utility application that is available free with Wirecast.

You install Wirecast Presenter on a PC on your local network. The PC can be Mac or Windows and the network can be either Ethernet or Wireless.

Wirecast can broadcast the desktop of the PC running Desktop Presenter, as shown below:



Zero configuration with Bonjour.

If you are using Bonjour, Wirecast will automatically detect Desktop Presenter when it is launched on a local PC. A new icon will appear in Desktop Presenter.

If either machine (the presenter PC or the Wirecast PC) does not have Bonjour installed, then you will need to manually enter the TCP/IP address of the computer running Presenter by using the the section called “Media” dialog in the Media menu.

A download for Bonjour for Windows is available here: <http://www.apple.com/macosx/features/bonjour/>

Desktop Presenter parameters.

Desktop Presenter parameters can be found in the the section called “Performance” panel of the Preferences dialog.

Some Scenarios to use Desktop Presenter.

- **Lecture Hall**

If lecturers choose to install Desktop Presenter on their laptops, then you can broadcast their Keynote/PowerPoint presentation directly from their laptop

If the lecturer is demonstrating a principle using their laptop (perhaps showing a 3D model of a molecule and rotating it in 3D), Wirecast can also display this output to the remote users.

- **Board Room**

If speakers choose to install Desktop Presenter on their laptops, then you can broadcast their Keynote/PowerPoint presentation directly from their laptop.

In addition, other programs such as Excel work perfectly with Desktop Presenter allowing the speaker to spontaneously refer to data without having to create new slides.

- **Training**

As part of a training broadcast, you can switch to a live application to show exactly how one would perform an action.

This saves the laborious step of having to create screen shots of every minute detail.

- **Demonstration**

You can demonstrate your business process, software, or hardware, live, as part of a presentation.

In the middle of your powerpoint, just switch applications and show the power of your business proposition, directly using the applications required.

Download Desktop Presenter.

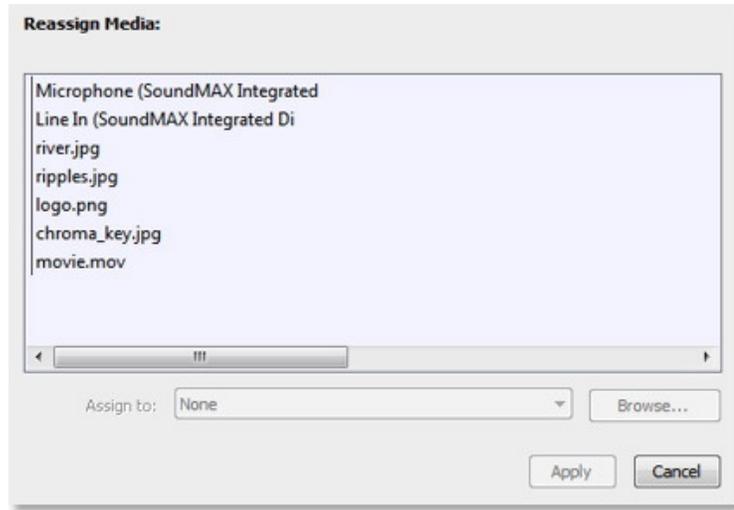
Desktop Presenter can be downloaded from Telestream here: <http://www.telestream.net/update-check/wirecast/wirecast-update-main.htm>

Chapter 11. Media Management

Asset Manager

Asset Manager Dialog.

Available on the the section called “Media” menu, the Reassign Media dialog allows you to change the source of media in your document:



How to Reassign media.

1. Click on the media you wish to assign of another source.
2. Either select the media from the popup, or press the Browse button and locate the replacement media on disk.
3. Press Apply Button

Reassignment is not done until you press the Apply button.

Desktop Presenter IP Address.

When you select a Desktop Presenter source from the Media list, you will also be able to change the IP address to the Desktop Presenter.

This means you can build a Wirecast presentation with place-holders and when your presenter shows up on site, you can just reconfigure the document to point at the correct Desktop Presenter.

Wirecast Documents

How media is stored in a Wirecast document.

Wirecast stores a path to your media in the Wirecast document.

This means if you move media around, Wirecast will no longer be able to find the original media.

If media has been moved, you may use the the section called “Asset Manager” dialog to specifically point to the new media location.

Keep your document and media together.

Wirecast does keep track of the "relative" path to your media.

This means if you you have a piece of media in the same directory as the document, and you move both the document and media to a new position, Wirecast will still find the media.

In addition, if you store all of your media in a folder that is in the same directory as your document, then Wirecast will be able to find the media if you move the document and the directory containing the media. This is akin to the very common practice of using an "images" directory for HTML pages.

For example, here using this sample directory tree:

```
MyWirecastDocs
  Presentation1
    presentation.wcst
    image1.jpg
  MediaDirectory
    movie1.mov
    image2.jpg
```

You could move the directory "Presentation1" to a new location and when you open presentation.wcst, Wirecast will find the 3 pieces of media: image1.jpg, movie1.mov and image2.jpg.

Chapter 12. Menus

Overview

This chapter documents the menus that are available in Wirecast:

- the section called “File”
- the section called “Edit”
- the section called “Switch”
- the section called “Media”
- the section called “Broadcast”
- the section called “Layout”
- the section called “Window”
- the section called “Help”

File

This section contains information on each item in the File menu of Wirecast:

New.

Creates a new, empty Wirecast document.

Open...

Presents the Open dialog for you to choose a Wirecast document from disk.

Open Recent.

You can choose from up to 15 most recently accessed documents.

Every time you open or save a document, it is entered into the Open Recent list.

Import Media.

Allows you to import media into Wirecast.

A new shot is created with the media.

Save.

Saves the document. If you haven't already saved the document to a file, then a Save As dialog is presented.

Save As...

Presents the Save As dialog so that you can save a document.

Close Window.

Will close the foremost window.

If the window is a document, all of the Shot Editor windows are closed as well.

If Wirecast is still broadcasting for the document, you will be asked if you wish to stop the broadcast.

If the document has not been saved, you'll be asked to save the document before closing it.

If the window is a document and the document's broadcast is playing, you'll be asked to stop the broadcast before closing the document.

Preferences.

Opens the the section called "Overview" window.

If the Preferences window is already open, it will simply be brought forward.

Exit.

Wirecast will close all documents and then exit.

If the broadcast is playing, you'll be asked to stop the broadcast first.

If a document has not been saved, you will be asked to save the document first.

Edit

This section contains information on each item in the Edit menu of Wirecast:

Undo.

Your last change is undone. Undo is only available in some windows (such as the shot editor).

Wirecast offers an unlimited (memory permitting) amount of undo actions. However, undo information is stored on a per-window basis. If you close a shot editor and then reopen it, your undo information will be lost.

Redo.

Your last undo is itself undone. Redo is only available in some windows (such as the shot editor).

Wirecast offers an unlimited (memory permitting) amount of undo actions. However, undo information is stored on a per-window basis. If you close a shot editor and then reopen it, your undo information will be lost.

Edit Shot.

Edits the shot. See the section called "Overview" for more information on editing shots.

You can also double-click on a shot to edit it.

You can also right-click on a shot and select "Edit Shot" to edit the shot.

The Inspector window is a shot editor window which always edits the last touched shot. Here is information on the difference between the section called "Inspector vs. Editor".

Rename Shot.

Brings up a window to allow you to rename the shot.

You can also right-click on a shot and select "Rename Shot" to rename the shot.

Duplicate Shot.

Will duplicate the currently selected shot.

You can also right-click on a shot and select "Duplicate Shot" to duplicate the shot.

Add Shot.

Creates a new, empty, shot.

You can also right-click on a shot and select "Add Shot" to add a new shot.

Delete Shot.

Deletes the currently selected shot.

You can also right-click on a shot and select "Delete Shot" to delete the shot.

Move To Layer.

Will move the shot to the given layer.

When shots are created, they are assigned to a specific layer. They exist on that layer until you move them or delete them.

You can also right-click on a shot and select "Move To Layer" to move the shot to another layer.

See the section called "Layers" for more information on layers in Wirecast.

Switch

This section contains information on each item in the Switch menu of Wirecast:

Go.

Will perform the Go action. This is the same as pressing the the section called "Transitions / Time / Go".

Transitions - three selected transitions.

Each document has 3 transition buttons that you can configure to any transition that Wirecast supports.

These 3 menu items in the Switch menu allow you use key strokes to select these 3 transitions.

For information on how to modify which transitions appear in this menu, see the section called "Transitions / Time / Go". The selections you make for the three buttons are the same three items you'll find in this menu.

AutoLive.

This menu item toggles (turns on and off) the the section called "AutoLive" feature.

The AutoLive feature can also be toggled by changing the checkbox labeled the section called "AutoLive"

Briefly, AutoLive is a fundamental feature of Wirecast which allows you to control whether clicking on a shot in the main window automatically makes the shot you clicked on become live.

More information on AutoLive can be found in the the section called "AutoLive and usage" section of this manual.

Media

This section contains information on each item in the Media menu of Wirecast:

Start Playing All Movies.

Any movies that are not playing will begin playing.

Pause All Movies.

All movies that are currently playing are paused.

Play to Next Point.

Some media have embedded markers ("points"). An example is a Keynote Movie that has been ???.

This menu option will play all media to the next marker / point.

Jump to Previous Point.

Some media have embedded markers ("points"). An example is a Keynote Movie that has been ???.

This menu option will force all media to jump back to the previews marker / point, and then pause.

New Desktop Presenter.

If Bonjour not installed on the computer that is running the section called "Overview", then you may need to manually enter the TCP/IP address of the computer running Presenter.

You may also use this menu option to pre-configure your document if you wish to add a Desktop Presenter before it is available. You can change the IP address to a Desktop Presenter in the the section called "Asset Manager" dialog.

Asset Manager.

Opens the the section called "Asset Manager" dialog.

Configure Devices.

Some devices (cameras, etc) may be able to be configured.

For example, you can configure an iSight to manually change the focus, contrast, brightness, etc. Other devices have multiple inputs that you can choose between (AlchemyTV Card, etc).

Choose the device you wish to configure from this 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.

Broadcast

This section contains information on each item in the Broadcast menu of Wirecast:

Broadcast Settings.

Opens the the section called "Overview".

Start Broadcasting / Stop Broadcasting.

Will start (or stop) broadcasting to the network.

If you have not configured the the section called “Overview” for this document, the window will be opened.

Start Recording / Stop Recording.

Will start (or stop) recording to disk.

If you have not configured the the section called “Overview” for this document, the window will be opened.

Layout

This section contains information on each item in the Layout menu of Wirecast:

Preview.

Shows or Hides the Preview area in the main window.

You can also click on the "Preview" icon in the Main Window Toolbar.

See the section called “Main Window Layout” for more information on this option.

Layer Visibility.

Shows or Hides the Layer Visibility mini icons.

See the section called “Main Window Layout” for more information on this option.

Master Audio.

Shows or Hides the Master Audio controls.

See the section called “Main Window Layout” for more information on this option.

Main Shot List.

Shows or Hides the main shot list.

See the section called “Main Window Layout” for more information on this option.

Output Statistics.

Shows or Hides the output statistics.

See the section called “Main Window Layout” for more information on this option.

Layer Panel.

Shows or hides the layer panel.

See the section called “Main Window Layout” for more information on this option.

Go to layer.

The bottom part of the the section called “Layers” and the the section called “Layer Windows” have a currently selected layer.

To see what the currently selected layer is, you can open the Layer Panel (see above). The currently selected layer is highlighted.

To change layers, you can click on the name of the layer you want to go to.

Alternatively, the menu item "Go to layer" will switch layers in a keystroke.

Editor Preview.

This item is only available when the the section called "Overview" is open.

This item will Hide or Show the Preview part of the Shot Editor window.

For more information, see the the section called "Edit Window Layout" in the the section called "Overview" chapter.

Window

This section contains information on each item in the Window menu of Wirecast:

Inspector.

Will open the Inspector window (there is only one for each document).

The Inspector is very similar to the shot editor, except it always edits the the last shot touched. The difference is the section called "Preview / Live".

Encoder Presets.

Opens the the section called "Overview" window.

New Layer Window.

Opens a new the section called "Layer Windows".

Show Device Manager.

Opens the the section called "Device Manager" window.

Camera Preview.

Shows a preview of all cameras currently connected to your computer.

Help

This section contains information on each item in the Help menu of Wirecast:

Help.

Opens this documentation.

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.

Report a Bug.

Your default web browser is used to open a link to our bug reporting form.

Please give us as much information as you can about your computer, what you were doing and any supporting material regarding the problem. For example, if a specific piece of media is troublesome, please set it aside so that we can have a look at the problem first-hand.

If in the unlikely event that Wirecast crashes, you can also send us a debug log by pressing the "Upload Debug Log File" in the the section called "Advanced" preferences.

Provide Feedback.

A link to the Telestream website where you can enter any feedback you may have about our product or company.

Visit Telestream Website.

A link to the Telestream website home page.

Visit Wirecast / Desktop Presenter download page.

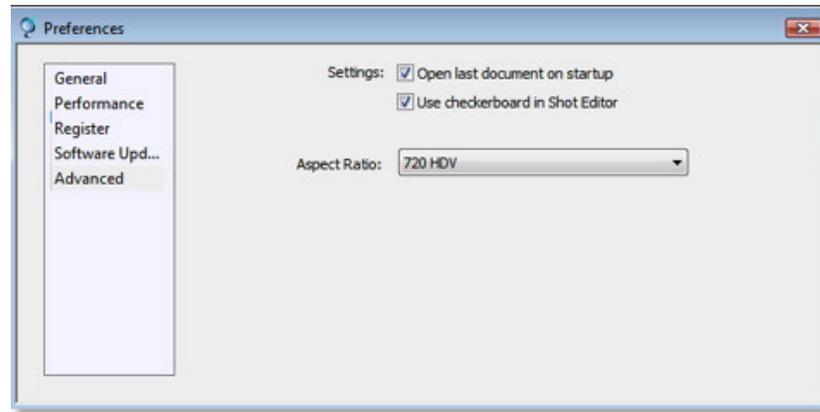
Your default browser is opened to the download pages for Wirecast/Desktop Presenter.

Acknowledgments.

Opens this documentation to the the section called "Overview" section.

Chapter 13. Preferences

Overview



Wirecast was designed to have as few application-wide preferences as possible, so that most of your options are configurable into the document or shot.

Accessing Preferences.

The preferences window can be opened by selecting "Preferences" in the "Wirecast" menu (or Ctrl+.).

Preference pages.

Preferences are grouped in Pages in Wirecast.

Click one of the 3 icons in the top of the Preferences window to change the page of preferences you are currently editing.

These are the pages available in the preferences window:

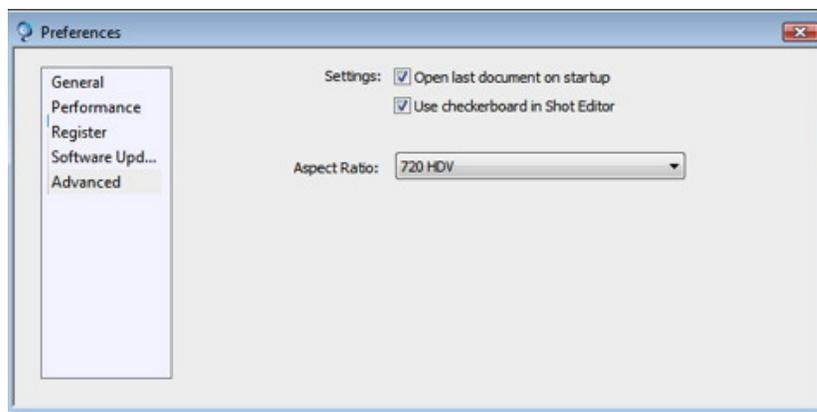
- the section called "General" -- general options
- the section called "Performance" -- application performance options
- the section called "Register" -- application registration
- the section called "Software Update" -- keep your software up-to-date
- the section called "Advanced" -- advanced options

Saving preferences.

Wirecast saves your preferences every time you make a change, and all changes are immediately applied throughout Wirecast.

General

General settings are a part of the the section called "Overview". The preferences window can be opened by selecting "Preferences" in the "Wirecast" menu (or Ctrl+.).



Open last document on startup.

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

default: on.

Show checkerboard background in Shot Editor.

When checked, a checkerboard background is shown in the the section called “Overview”.

default: off.

Aspect Ratio.

Wirecast allows you to device the aspect ratio of your broadcast canvas.

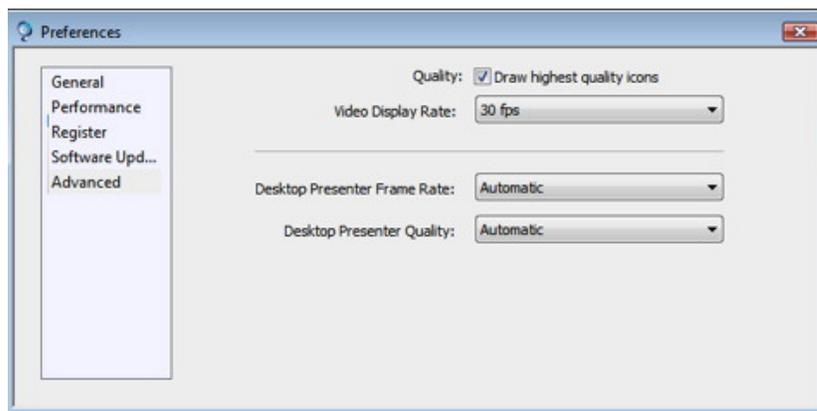
This is the relative width/height of the Preview and Live Broadcast area in Wirecast.

The aspect ratio should match the aspect ratio of the Encoder Preset you are going to stream with so that no squeezing is done by Wirecast to match your encoder presets aspect ratio.

As of Wirecast 3.1 when you selection this option, Wirecast will automatically reset any media that has "Respect Aspect Ratio" enabled.

Performance

Performance settings are a part of the the section called “Overview”. The preferences window can be opened by selecting "Preferences" in the "Wirecast" menu (or Ctrl+,).



Draw highest quality icons.

Controls the quality of the icons as drawn in Wirecast.

This feature has no affect on what your viewers see with Wirecast; This only affects what you as a user of Wirecast can see.

This affects performance of the application because it takes CPU to draw higher quality icons.

If your machine is having trouble broadcasting your stream, (the section called “Main Window Layout”), try unchecking this checkbox.

default: on.

Video Display Rate.

Defines how many frames per second Wirecast will generate frames.

If you want very smooth transitions, you can use 60, but this will also require a higher end machine.

default: 30

Desktop Presenter Frame Rate.

Defines how many frames per second Wirecast will ask the Desktop Presenter for frames.

If the Desktop Presenter does not have a lot of motion (say a Keynote presentation), you might try reducing this number. If you slow down the FPS you may consider increasing the quality (see below).

When Automatic is selected, Wirecast attempts to keep a 30 fps rate. However, when Automatic is selected, Wirecast may reduce the framerate as the actual output FPS changes. For example, if your true streaming FPS is very low (say 5 FPS), then Wirecast may choose to reduce the framerate to Desktop Presenter. If you use a specific FPS number, Wirecast will always attempt to keep your specific FPS, regardless of the streaming FPS.

default: Automatic

Desktop Presenter Quality.

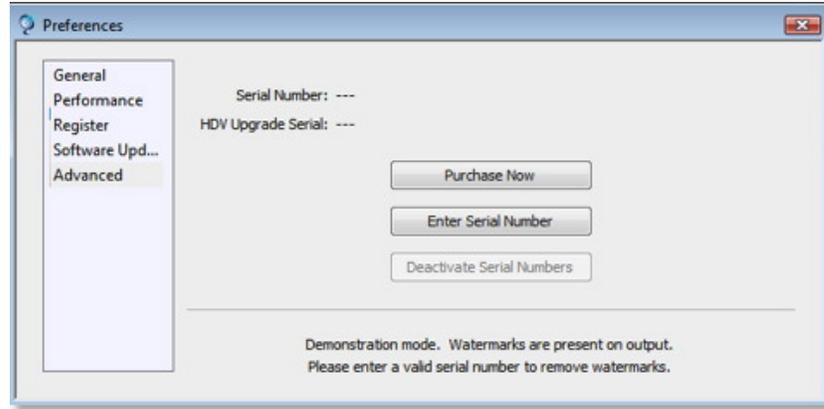
Defines the quality of each frame Wirecast asks of the Desktop Presenter.

If the Desktop Presenter does not have a lot of motion (say a Keynote presentation), you might try to increase this to Highest. You may also consider reducing the frame rate.

default: Automatic

Register

Register settings are a part of the the section called “Overview”. The preferences window can be opened by selecting "Preferences" in the "Wirecast" menu (or Ctrl+,).



Serial Number.

This is the serial number that we have provided to you.

Note

The serial number never contains quotation marks. When we send you the serial number, we may enclose it in quotation marks (e.g., "123-345-678"). Do not include the quotation marks.

HDV Serial.

If you wish to use an HDV camera in HDV mode, you need to purchase an HDV Pack. When you purchase an HDV Pack, you will receive a second serial number which you enter here to enable HDV within Wirecast.

Note

You can use most HDV cameras in DV mode without purchasing an HDV Pack.

Purchase Now.

You can purchase online directly through the application either a Wirecast serial number or an HDV serial number for Wirecast.

The Purchase Now button is only active when you have not registered either a Serial Number or HDV Upgrade Serial number.

Enter Serial Number.

If you have previously purchased a copy of Wirecast or the HDV Upgrade, you can enter the serial number here.

If you have both, just enter one at a time.

The Enter Serial Number button is only active when you have not registered either a Serial Number or HDV Upgrade Serial number.

Deactivate Serial Numbers.

If you have activated either a Wirecast Serial number or an HDV Upgrade serial number, you can deactivate them here.

You can always re-activate the serial number again if you would like to do so.

Deactivating a serial number allows you to re-activate it on another computer.

The Deactivate Serial Numbers button is only active when you registered a serial number.

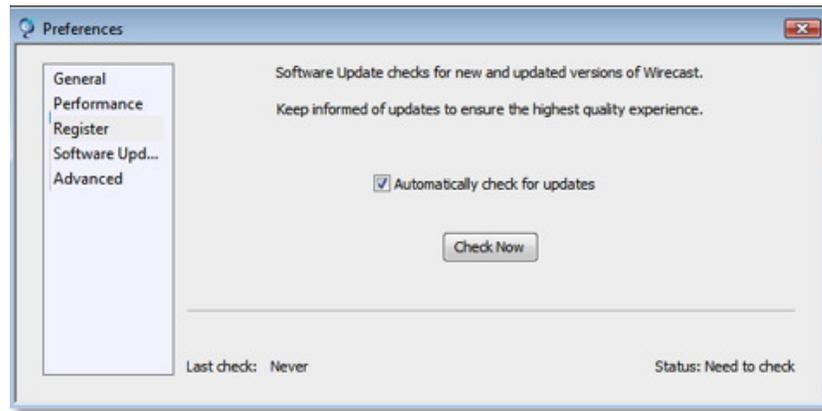
Demonstration Mode.

When no product serial number is entered, Wirecast will water-mark all output (both to disk and network). Video is water-marked with a periodic overlay of the Wirecast logo. Audio is water-marked with a periodic voice over.

When no HDV serial number is entered, Wirecast will water-mark all HDV media.

Software Update

Software Update settings are a part of the the section called “Overview”. The preferences window can be opened by selecting "Preferences" in the "Wirecast" menu (or Ctrl+.).



Automatically check for updates.

By default, Wirecast will check in with the Telestream website each time you launch Wirecast.

No personal information is transferred to Telestream during this action.

default: on.

Check Now.

Will immediately check if Wirecast is up to date.

No personal information is transferred to Telestream during this action.

Advanced

Advanced settings are a part of the the section called “Overview”. The preferences window can be opened by selecting "Preferences" in the "Wirecast" menu (or Ctrl+.).



Capture Device Size.

Controls the size of the video that is captured from your cameras or other live input devices.

Reduced is advised for performance reasons, unless you will use the the section called “Overview” features of Wirecast.

default: Reduced

Device Deinterlacing.

Some devices (specifically DV Cameras) will provide data that is interlaced, which means that each half of the frame is captured at a different time.

Due to the fact it is captured at a different time, when there is a lot of motion in the video, you can see horizontal lines in the output.

By selecting "Blend" from this popup, the interlacing artifacts are removed using a blend algorithm.

If you use "Reduced" in the "Capture Device Size" you do not need to deinterlace.

default: None

High Quality Video.

Controls the quality of the decode performed on your source media files.

Your media must be decoded before being broadcast, and this control tells Wirecast how to perform this decode.

You should leave this option on unless you have seen specific performance issues.

default: on.

Use GPU Compression.

On appropriate hardware, Wirecast can gain significant speed improvements by using your graphics card to preprocess frames before sending them to the encoders.

You should leave this option on unless you experience issues with your encoded output.

This checkbox is included in the rare case you choose to use an Encoder that does not support the features necessary.

To date, Telestream is unaware of any encoders that will not work with this feature.

default: on.

Upload Debug Log File.

Very rarely, we may require some very detailed debugging information to help us understand issues you have reported.

This button will upload a text file to our server for our engineers to look at.

Please only use this feature under direction of our support staff.

CPU performance issues.

While you are broadcasting, turn on the the section called “Main Window Layout” and watch the CPU.

If the CPU usage is nearing 95%, you may consider not using High Quality Video. Experiment with turning off the High Quality Video.

Dropped Frames performance issues.

While you are broadcasting, turn on the the section called “Main Window Layout” and watch the FPS (Frames Per Second).

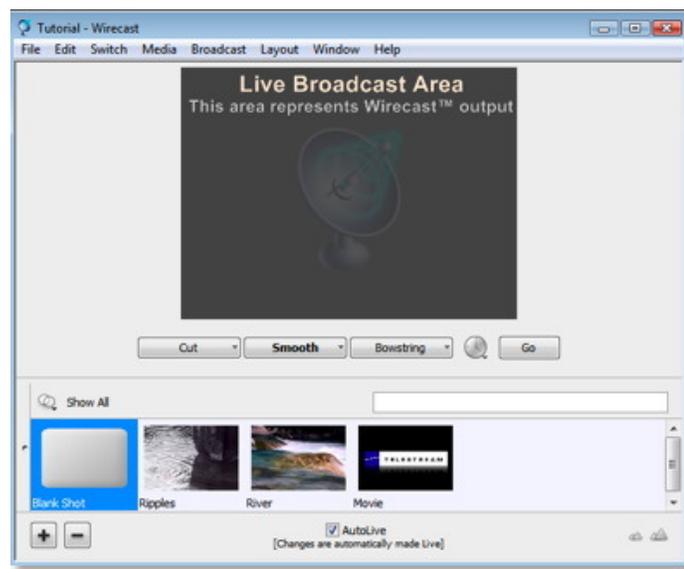
If this value is consistently dropping well below your target FPS, consider not using High Quality Video. Experiment with turning off the High Quality Video.

Chapter 14. Main Window

Overview

The main window (or Document window) as shown below, is made up of four main components:

- the section called “Preview / Live” -- the large area just below the Toolbar
- the section called “Transitions / Time / Go ” -- the are with "Cut", "Smooth", "Bowstring" and "Go" buttons
- the section called “Shot Selection Area” -- the area which shows the shot icons



Preview / Live

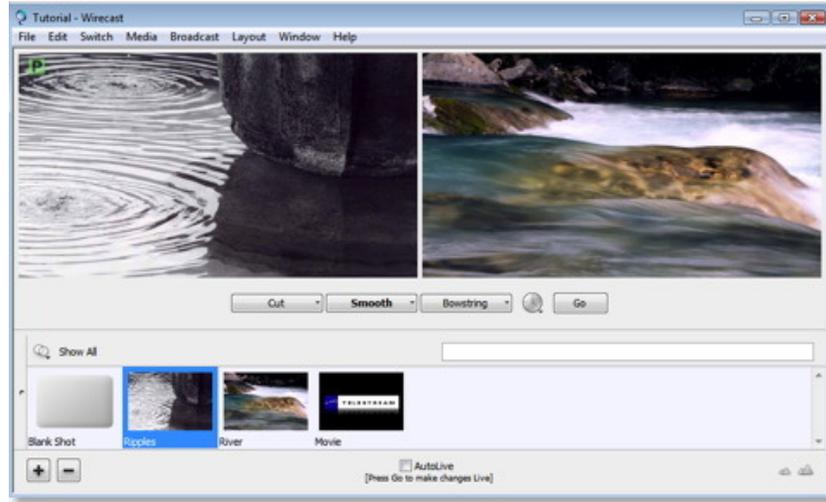
When you open a new document in Wirecast, only the Live area is shown. The Live area shows what is sent to your viewers (though what you see in the live area is *before* the encoder/compression).

When the section called “AutoLive” is off, you can make several changes without your viewers seeing the change. This is most useful when you are the section called “Using an Engineer” to run your broadcast.

When you do several changes without your viewers seeing them, you most likely want to see what those changes will look like to your viewers. This is what the Preview is for.

To see the preview, you can select "Preview" from the "Layout" menu in Wirecast.

Here, the main window shows both the preview (on left with green "P") and live (on right) displays:



In the above example, AutoLive is off, "River" is the current Live shot (what the viewers would see if you were broadcasting), and "Ripples" has been selected and is in Preview.

If you press the section called "Transitions / Time / Go " button, the "Ripples" shot becomes Live, using the "Smooth" transition.

Optional Views

The Main window has several small panels that you can open and view.

These are explained in detail in the the section called "Main Window Layout" section of Usage Patterns chapter.

Transitions / Time / Go

The transition area is in the middle of the main window and looks like this:



Transition Buttons.

There are three Transition buttons. In the image above, the transitions "Cut", "Smooth" and "Bowstring" are configured for the three buttons.

In the screen shot above, the transition "Smooth" is the currently selected transition (the one that will be used).

Changing the selected transition button.

If you single-click on the "Bowstring" button, then it will become highlighted and "Bowstring" will be the current Transition, as shown here:



As you can see, you have 3 transitions at the ready at all times.

Note

You can also select one of the three buttons by using Command-1, Command-2, and Command-3, respectively.

Changing the transition for a transition button.

If you click and drag on one of the three transition buttons, you can select a different transition for the button.

Here we've selected "Swoop" instead of "Cut":



Duration Button.

The duration of the transition is controlled using this button:



This button controls the duration of the transition (except for the "Cut" transition which is immediate).

If you select "Slow" from the popup, you'll notice that the icon contains a small Turtle, as shown here:



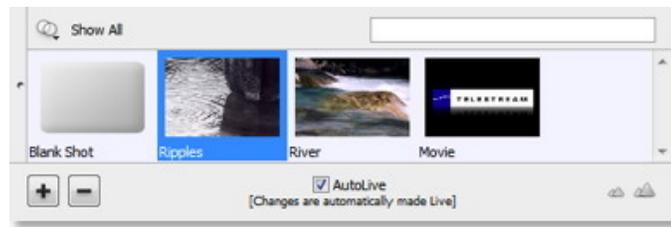
Go Button.

The Go button (or Ctrl+G) will take any changes you have made and make them Live using the selected transition and duration.

However, the Go button only becomes important when you have turned the section called "AutoLive" off. This is because when AutoLive is on, every time you click on a shot, the Go action automatically executed for you. See the section called "AutoLive and usage" for more information on using AutoLive.

Shot Selection Area

The bottom part of the main window contains the shot selection area:



Changing Shots.

You change shots by clicking on a shot. Above, we have selected "Ripples" the currently selected shot.

Shot Content Filter.

The



popup controls a filter which can be applied to the list of shots.

Selecting a filter will change which shots are shown in the shot list. For example, if you select "Images" from the list, only those shots which have images in them will show.

This can be helpful in finding a shot if you have several.

Shot Name Filter.

You can also filter the shot list by name. To do this, type into the Search area, as we have typed "Riv" below. Notice how the selection has changed to show only the "River" shot:



Add Shot.

You can add a new, empty shot by pressing the



button. The same action is available by right-clicking on a Shot and selecting "Add Shot".

Delete Shot.

You can delete a shot by first selected it and then pressing the



button. The same action is available by selecting "Delete Shot" from the "Edit" menu (or Ctrl+BkS) Finally, you can right-click on the Shot and select "Delete Shot".

Editing a shot.

You can edit a shot by double-clicking on it. You can also edit a shot by selecting "Edit Shot" from the "Edit" menu (or Ctrl+E). Finally, you can right-click on the Shot and select "Edit Shot".

Duplicating a shot.

You can duplicate a shot by selecting "Duplicate Shot" from the "Edit" menu (or Ctrl+D). The same action is available by right-clicking on the Shot and selecting "Duplicate Shot".

Renaming a shot.

You can rename a shot by selecting "Rename Shot" from the "Edit" menu (or Ctrl+R). The same action is available by right-clicking on the Shot and selecting "Rename Shot".

Moving a Shot to another Layer.

You can move a shot to another layer by selecting "Move to Layer" from the "Edit" menu. The same action is available by right-clicking on the Shot and selecting "Move to Layer".

When shots are created, they are assigned to a specific layer. They exist on that layer until you move them or delete them.

You can also right-click on a shot and select "Move To Layer" to move the shot to another layer.

See the section called "Layers" for more information on layers in Wirecast.

Growing / Shrinking the Shot Icons.

In the lower right of the window, you'll find two icons, which look like this:

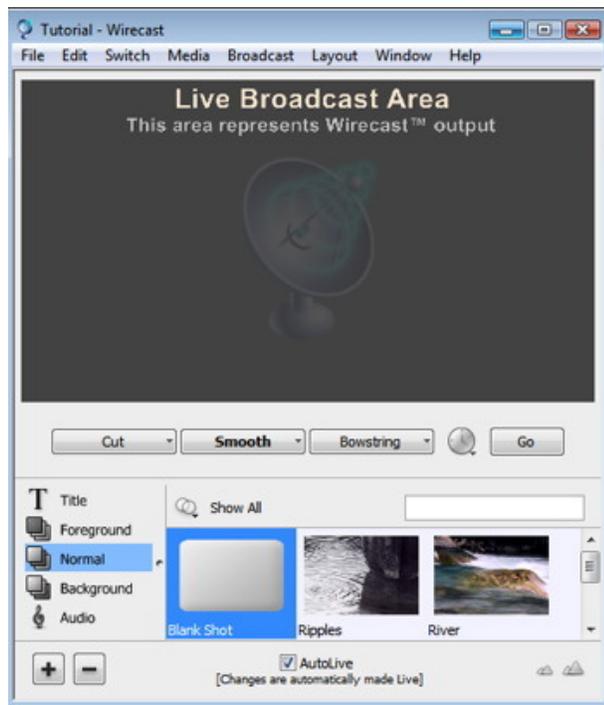


These two icons control the size of the icons in the Shot list. Clicking the left "mountain" will cause the icons to become smaller. Clicking on the right "mountain" will make the icons become bigger.

Layers

Wirecast allows you to put shots on five different layers. When Wirecast first opens, the Layer panel is not shown.

To show the layer panel, select "Layer Panel" from the "Layout" menu, or slide the panel out using the knob. Here's what the panel looks like, when open, with the "Normal" layer selected.



What is a Layer.

Layers imply an order to "drawing" in the broadcast. The Bottom layer ("Audio") is drawn first. Then the "Background" layer is drawn, then the "Normal" layer, then the "Foreground" and finally the "Title".

This means that the Title layer is always drawn on top of the other layers

Note

The audio layer will actually draw, if the shot selected there has visual media in it.

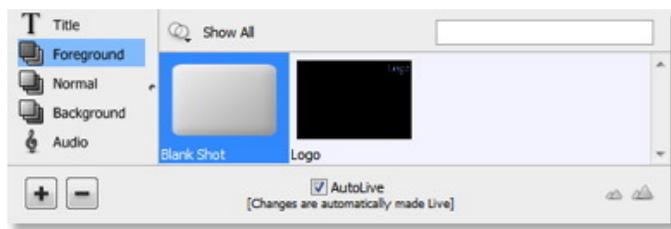
Using multiple layers is one way that you can get Wirecast to show, for example, a company Logo. You could have a shot on the "Foreground" layer which is your the section called "Overview". If selected, it will always be visible, above your "normal" layer. The the section called "Getting Started" covers this example in detail.

Changing Layers.

To see other layers, simply click on the *name* of the layer you wish to switch to. Here, we have clicked on the "Foreground" (only the bottom part of the window is shown). Notice that the Shot list has changed to show the shots that are in that layer.

Note

There are key equivalents available to help you quickly change layers. See the "Go to layer" menu item in the "Layout" menu.



Moving a shot between Layers.

A shot can be moved between layers by selected "Move to Layer" from the edit window (or right-clicking on the shot and selecting from the popup-menu).

When shots are created, they are assigned to a specific layer. They exist on that layer until you move them or delete them.

You can also right-click on a shot and select "Move To Layer" to move the shot to another layer.

See the section called "Layers" for more information on layers in Wirecast.

Layer Windows.

If you want to see more than one layer at a time, be sure to read about the section called "Layer Windows".

AutoLive

Where is the AutoLive feature.

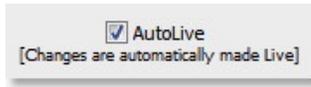
The AutoLive feature can be found on the bottom, middle of the the section called "Overview".

The AutoLive feature can also be found in the the section called "Switch" menu.

What is AutoLive.

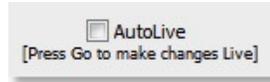
AutoLive controls whether changes made in the main window automatically go live or not.

When AutoLive is on...



If you click on a shot, the shot is automatically taken Live for you in the broadcast (using the current transition and transition duration).

When AutoLive is off...



If you click on a shot, the shot is not taken live. To actually take the shot live, you must press the the section called "Transitions / Time / Go".

More information.

AutoLive is discussed in more detail in the section called "AutoLive and usage".

Chapter 15. Shot Editing

Overview

All of the information that Wirecast uses to display a shot is accessed through the shot editor window (or Inspector window).

How to edit a Shot.

There are several ways of opening the shot editor:

- Double click on a shot in the main window
- Select "Edit Shot" from the "Edit" menu
- Right-click on a shot and select "Edit Shot"

To open the shot Inspector, you can:

- Select "Inspector" from the "Window" menu
- Click on the "Inspector" button in the Main window Toolbar

Once the shot inspector is open, selecting (single-clicking) on the shot in the main window will allow you to edit it.

When are my changes made active?

Wirecast always makes your changes available in the the section called "Preview / Live".

However, your changes only become Live when you specifically tell Wirecast to the section called "Transitions / Time / Go".

Note

The exception to this occurs in the the section called "Overview" where you can specifically make your changes the section called "Live Playback".

You can make your changes live by pressing the the section called "Transitions / Time / Go" or by using Command-G. Command-G is very useful when you are editing a shot and want to make your changes immediately live.

The the section called "AutoLive and usage" feature does not apply to the shot editor.

How to find information about the Shot Editor.

These pages describes the bigger picture of shot editing:

- the section called "Inspector vs. Editor" -- a description of the difference
- the section called "Window Layout" -- a description of the different parts of the window
- the section called "Optional Views" -- the optional parts of the edit window

- the section called “Live LED” -- a description of the "live" LED
- the section called “Shot Elements” -- the elements that exist within a shot

If you're looking to find documentation from the perspective of a the section called “Shot Elements”:

- the section called “Title”
- the section called “Foreground”
- the section called “Scene”
- the section called “Background”
- the section called “Audio”
- the section called “Channel A/B/C”

The rest of the chapters of the book address specific panels of the edit window. Each the section called “Shot Elements” uses one or more of these panels:

- the section called “Overview” -- the scene to use
- the section called “See Titling Capabilities” -- title configuration
- the section called “Overview” -- media selection
- the section called “Overview” -- where on the screen parts of a shot exist
- the section called “Overview” -- audio, movie in point, output, etc
- the section called “Overview” -- how the parts of a shot move as they build in and build out

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 on the shot you wish to edit.

Both windows have the exact same controls in them. the only difference is whether you have a window for a specific shot (Editor) or you have a window which shots share (Inspector).

A shot can be in both an Editor and in an Inspector without causing problems to Wirecast.

How to open the Inspector.

You can open the inspector window by selecting "Inspector" from the "Window" menu You can also press the "Inspector" button on the window Toolbar.

What if no shot is selected.

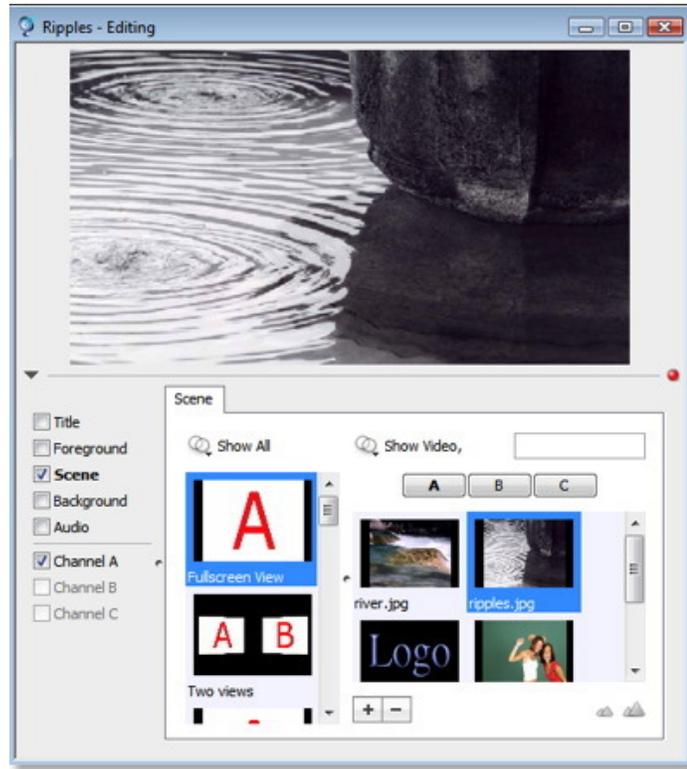
If no shot is currently selected, the inspector's buttons and other GUI elements are not functional.

There is only one Inspector.

Wirecast only opens one Inspector window.

Window Layout

The main window can be broken up into 3 major sections:



- **Preview Area** -- Top part of the window

This area of the window shows a preview of what the shot looks like.

- **Shot Elements** -- Bottom Left of the window

This area is where you select the elements to edit within the shot.

You can also modify whether the the section called “Shot Elements” is visible here.

- **Edit Panels** -- Bottom Right of the window

This Tab area holds all of the configuration panels.

The tabs that are available in this area changed depending on the type of element that is currently selected.

In the above example, the Main element is selected, and the only panel available is the the section called “Overview” panel.

How to find information on the panels.

The rest of the chapters related to editing are centered around the various panels.

Optional Views

You can modify the look of the edit window. See the section called “Edit Window Layout” for details on how to do this.

Live LED



In the very middle of the edit window, you'll see a small "LED" on the far right (it is red in the example above).

The intent of this small light is to tell you whether you are editing a shot which is LIVE or not.

The color can be one of:

- **Red** -- the shot you are editing is currently Live in the broadcast
- **Yellow** -- the shot you are editing is currently in Preview (if you press "Go" it will be Live)
- **Clear** -- the shot you are editing is neither in Live nor in Preview

Shot Elements

What are Shot Elements?

Simply put, an element is just a part of a shot -- a title, or a graphic.

Layering.

However, there is a forced, predefined layering of elements in a shot. The Title Element is on top of the Foreground element, etc.

Channels.

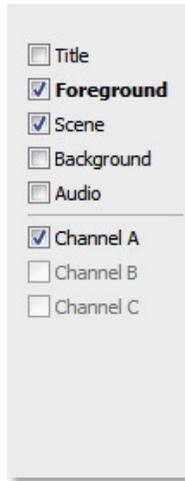
There are three elements that appear the bottom of the the section called “Shot Elements” list -- Channel A, Channel B, and Channel C.

These elements are for fine-control of the the section called “Channels” in a scene.

To be able to edit a the section called “Channels”, you must select a Scene which has the channel in it. See the section called “Overview” for more information on selecting scenes and the channels within them.

Selecting a Shot Element.

You select a the section called “Shot Elements” by clicking on the *name* of the element. For example, if you click on the word "Foreground" the Foreground element is selected. Here is what the Shot element selection area looks like (with the Foreground element selected):



Shot Element Visibility.

The checkbox to the left of each the section called “Shot Elements” controls the visibility of that shot element in the shot.

For example, if your shot has a title in it, you can turn off the Title in the shot by simply turning off the checkbox. All of your title data still stays within the shot -- it's just not shown.

This can be a powerful way to use Wirecast -- preload your shots with Titles and turn them on and off during run time.

Note

The first time you select a shot element, its visibility will be turned on for you (it is assumed if you are clicking on it, you want to see it).

Shot Element Documentation.

Each type of element in a shot is configured a little differently.

For this reason, when you select a the section called “Shot Elements”, the configuration tabs available will change.

Here is the documentation for each shot element:

- the section called “Title”
- the section called “Foreground”
- the section called “Scene”
- the section called “Background”
- the section called “Audio”
- the section called “Channel A/B/C”

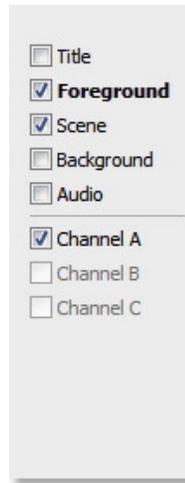
Chapter 16. Shot Element Panels

Overview

This chapter allows you to look up the documentation for a particular the section called “Shot Elements”.

When you are the section called “Overview” you must choose which shot elements to edit.

You choose these shot elements by clicking on the name of the shot element in Shot Editor. Here is an example of "Foreground" being selected in the shot element selector:



Here are the shot elements that the the section called “Overview” allows you to configure:

- the section called “Title”
- the section called “Foreground”
- the section called “Scene”
- the section called “Background”
- the section called “Audio”
- the section called “Channel A/B/C”

Title

To change title information in a shot, you must first the section called “Overview” then select a Title from the the section called “Shot Elements” list.

Title.

Each shot can have a title as a part of the shot.

A shot can also have only a title. This is described more in the section called “Where to put Titles”

More information is available here on the section called “Overview”.

A title consists of a template (with graphics, etc) and your specific text (say, interviewee's name) or title of a piece of music being reviewed.

Available Panels.

The Title the section called “Shot Elements”, offers the following panels for editing:

- the section called “Modifying Titles” -- The text, font, etc, of a title
- the section called “Overview” -- Position, crop, etc, of the the section called “Shot Elements” in the shot
- the section called “Overview” -- The Build-In and Build-Out motion of the the section called “Shot Elements”

Foreground

To change foreground information in a shot, you must first the section called “Overview” then select a Foreground from the the section called “Shot Elements” list.

Foreground.

Each shot can have a foreground piece of media as a part of the shot.

For example, you may choose to put a Logo as part of the shot. Here is some more information on the section called “Overview”.

A Foreground the section called “Shot Elements” is a piece of media (movie, still picture, etc) that you can position and is behind the title, but in front of all other shot elements in the shot.

Available Panels.

The Foreground the section called “Shot Elements”, offers the following panels for editing:

- the section called “Overview” -- The media for the the section called “Shot Elements”
- the section called “Overview” -- Position, crop, etc, of the the section called “Shot Elements” in the shot
- the section called “Overview” -- The playback and audio controls for the the section called “Shot Elements”
- the section called “Overview” -- The Build-In and Build-Out motion of the the section called “Shot Elements”
- ??? -- On Tiger only, the filters to apply to this the section called “Shot Elements”

Scene

To change scene information in a shot, you must first the section called “Overview” then select a Scene from the the section called “Shot Elements” list.

Scene.

Each shot can have a single scene, which can contain multiple pieces of media (depending on the scene you choose).

The Scene panel is the only panel available from the Scene the section called “Shot Elements”.

However, the media that you assign to the channels of a scene are edited by selecting the channel shot element. For example, if you assign a piece of media to Channel A, then you can edit specific settings for that media by clicking on the "Channel A" the section called “Shot Elements”.

Available Panels.

The Scene the section called “Shot Elements”, offers only the scene panel for editing:

- the section called “Overview” -- The main scene of the shot

Background

To change background information in a shot, you must first the section called “Overview” then select a Background from the the section called “Shot Elements” list.

Background.

Each shot can have a background piece of media as a part of the shot.

For example, you may choose to put a simple pattern as the background.

A background is especially useful when you choose a the section called “Scene” which does not completely fill the screen. A background allows you to define what appears behind the scene. By default, the background is simply black.

Available Panels.

The Background the section called “Shot Elements”, offers the following panels for editing:

- the section called “Overview” -- The media for the shot element
- the section called “Overview” -- Position, crop, etc, of the the section called “Shot Elements” in the shot
- the section called “Overview” -- The playback and audio controls for the shot element
- the section called “Overview” -- The Build-In and Build-Out motion of the shot element

Audio

To change audio information in a shot, you must first the section called “Overview” then select a Audio from the the section called “Shot Elements” list.

Audio.

Each shot can have a piece of audio media as a part of the shot.

For example, you may choose to put an MP3 of a choral piece in the Audio shot element of a shot. Whenever the shot becomes Live, the choral piece will play (mixed with what ever else is playing).

Available Panels.

The Audio the section called “Shot Elements”, offers the following panels for editing:

- the section called “Overview” -- The media for the shot element
- the section called “Overview” -- The playback and audio controls for the shot element

Channel A/B/C

To change channel information in a shot, you must first the section called “Overview”, then select a Channel (A, B, or C) from the the section called “Shot Elements” list.

Channels.

A Channel contains the media for a part of a the section called “Scene”.

This allows you to assign, for example, different motion to each channel in a scene.

If a channel is "dimmed" or "ghosted" this means that the channel is not currently available in the Scene. Only some Scenes contain all three channels, for example.

Available Panels.

The Channel the section called “Shot Elements”, offers the following panels for editing:

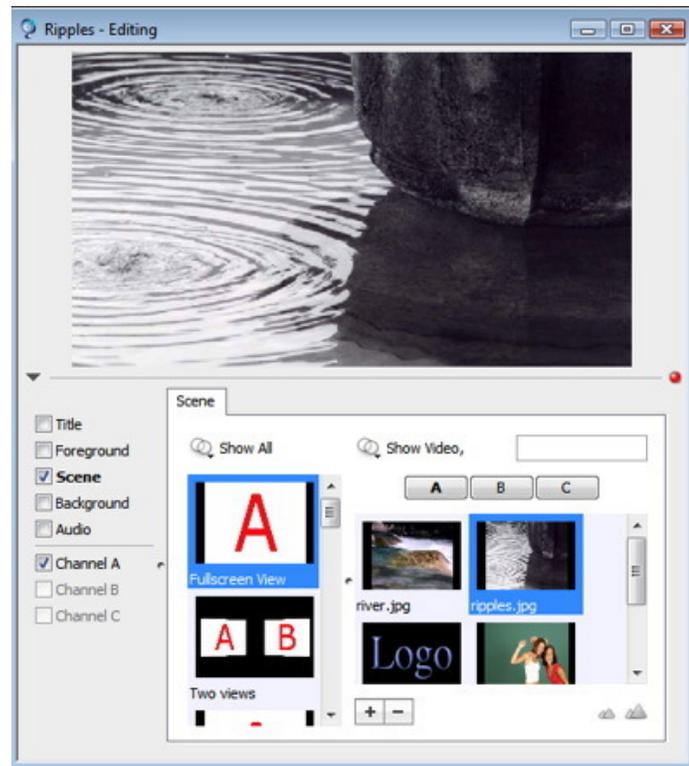
- the section called “Overview” -- The media for the shot element
- the section called “Overview” -- Position, crop, etc, of the the section called “Shot Elements” in the shot
- the section called “Overview” -- The playback and audio controls for the shot element
- the section called “Overview” -- The Build-In and Build-Out motion of the shot element
- the section called “Overview” -- Chroma Key settings for this media

Chapter 17. Edit: Scene

Overview

Accessing the Scene Panel.

The Scene panel is available when you are in the section called “Overview” and you have selected the Scene section called “Shot Elements”. It looks like this:



Scenes and Media.

- the section called “Scene Selection” is on the left of the Scene tab.

Changing the scene changes what the section called “Channels” are in the scene; and changes where those channels appear.

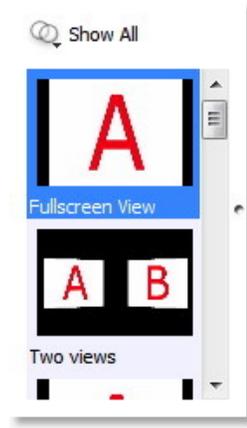
- the section called “Media Selection” is on the right of the Scene tab.

Here you select the media to be used in the scene.

Scene Selection

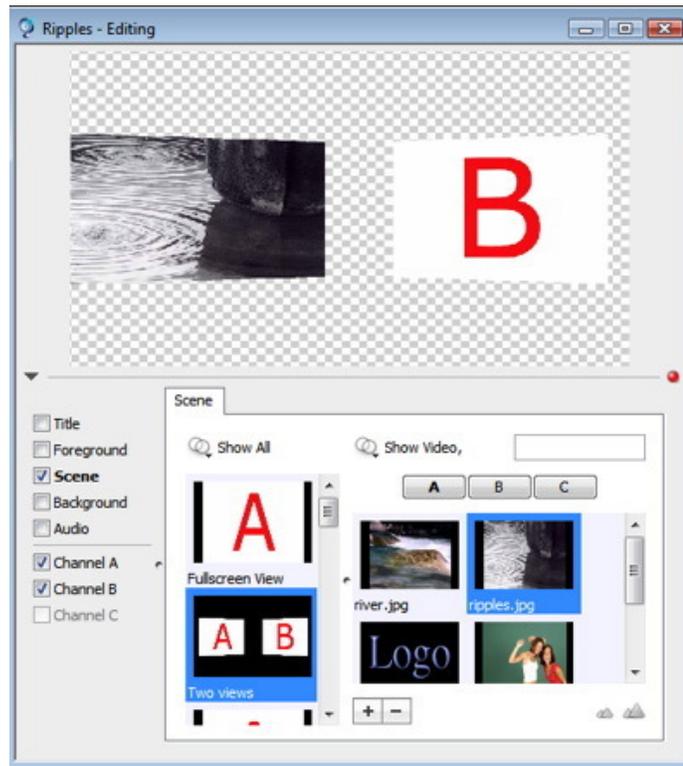
The Scene Selector.

The left side of the the section called “Overview” is shown below, and you click on a scene to use it. Here "Full-screen View" is selected:



How to change the Scene.

Simply click on another scene in the scene list. Here is what the window would look like if you clicked on "Two Views":



How do I change the B?

See the section called "Media Selection" for details on changing media in a scene.

Scene Filters.



The scene filter allows you to shown only scenes that accept a certain media count.

For example, if you only want to use two pieces of media, you can filter by "Two" and only those scenes which use 2 pieces of media will be shown.

Media Selection

The Media Selector.

The right side of the the section called "Overview" is shown below, and it is here that you select media for the scene.



Channels and Scenes.

Scenes can contain up to three the section called "Channels".

To assign media to a particular channel in a Scene, you must select the channel and then click on the media.

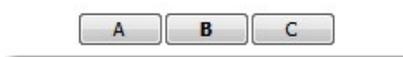
Channel Selector.

The channel selector looks like this (currently "A" is selected):



Changing Channel B.

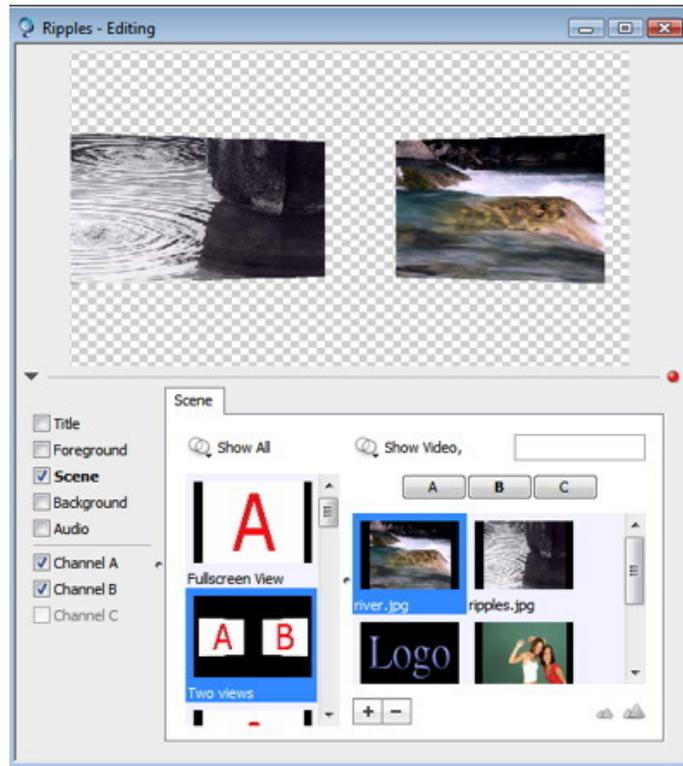
To change the media on Channel B, select Channel B, as shown below:



Then click on a piece of media (in our example, we clicked on "river"):



If you had selected "Two Views" as shown in the section called "Scene Selection", then your window would look like this:



Channels

Definition.

A channel is a place where media can exist in a the section called "Overview".

Think of them as place-holders in the scene for media.

How are channels used in Wirecast?

Today, channels are only used as place-holders in a Scene. In the future, this concept may be expanded.

Editing Channels.

At the bottom area of the the section called “Shot Elements” area, you will find three elements "Channel A", "Channel B" and "Channel C".

When you select these shot elements, you are able to control the channel by using these panels:

- the section called “Overview” -- the media on the channel (yes, another way to select the media)
- the section called “Overview” -- Some of the effects settings (not all of them)
- the section called “Overview” -- Playback settings
- the section called “Overview” -- How the channel moves
- the section called “Overview” -- Chroma Key settings for the channel

Editing Restrictions.

As of version 2 of Wirecast, it is not possible to edit some settings on the Effects panel.

Chapter 18. Edit: Title

See Titling Capabilities

the section called “Overview”

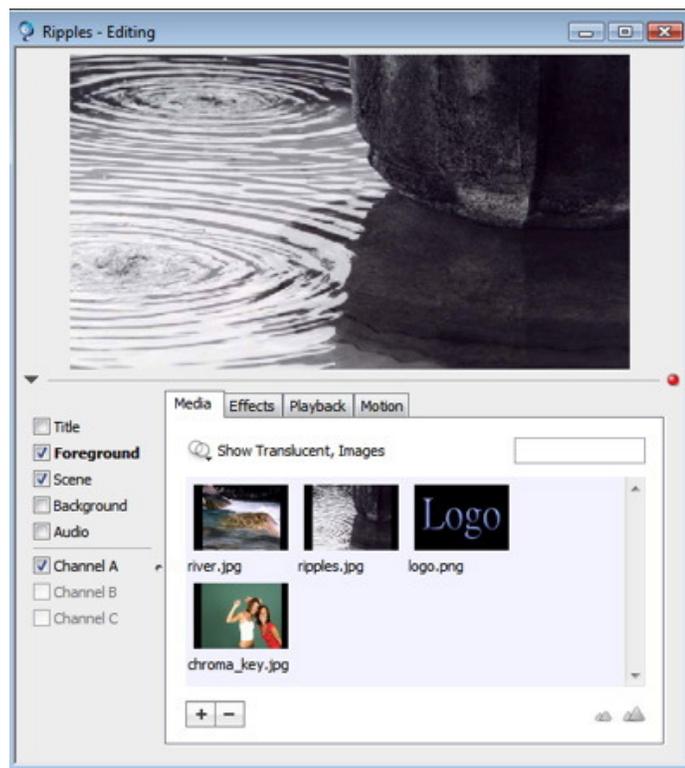
Chapter 19. Edit: Media

Overview

Accessing the Media Panel.

The Media panel is available when you are in the section called “Overview” and you have selected one of the following sections called “Shot Elements”: Foreground, Background, Audio, or Channel A,B,C.

In the example shown below, we are editing the "Ripples" shot and have selected the Foreground element. There is no media selected in this example.



More information.

- the section called “Selecting Media” -- how to change the media
- the section called “Add / Remove media” -- how to add and remove media

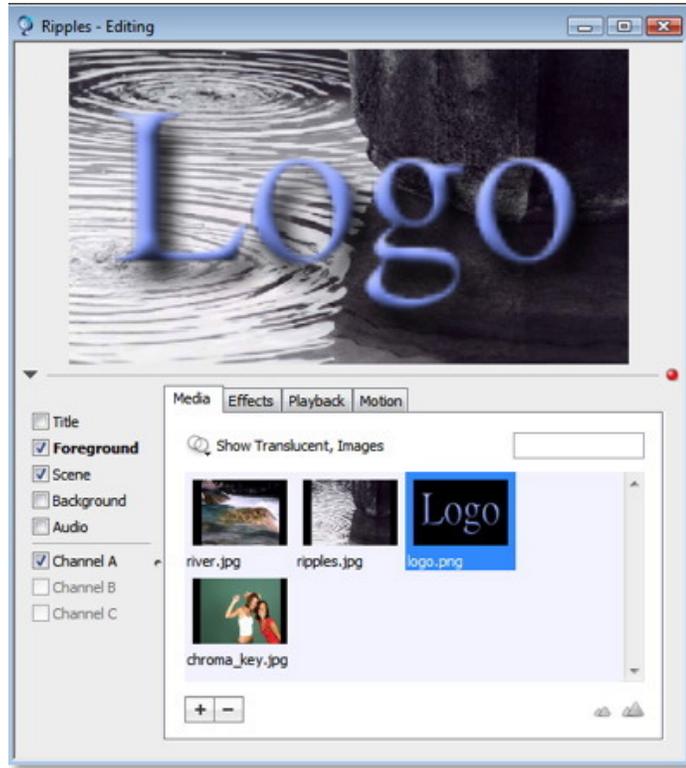
Selecting Media

Selecting Media.

You simply click on the media shown in the list to select it.

In the example below, we have selected the "logo.png" image.

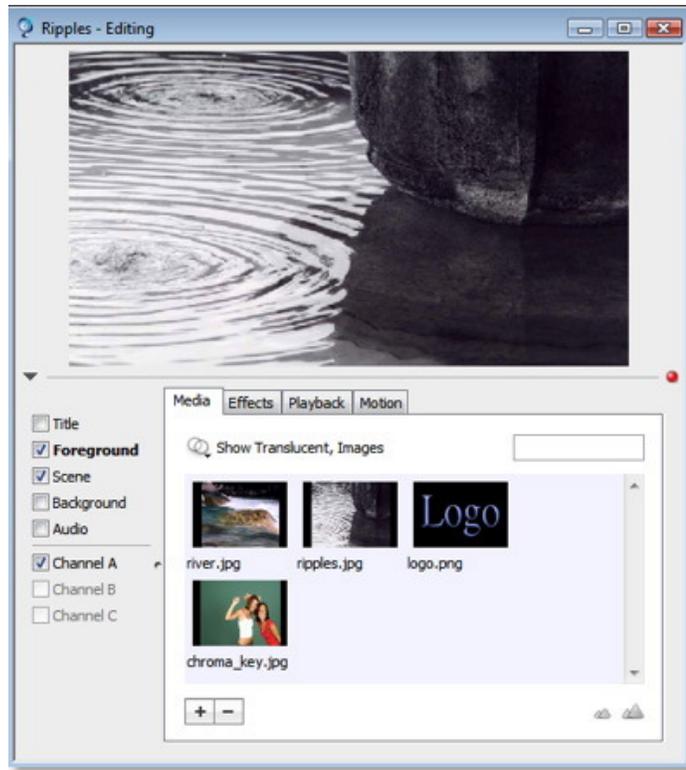
Notice that the logo appears in the middle of the preview.



Add / Remove media

The Media Panel.

This is what the media panel looks like:



Add using Drag and Drop.

You can drag and drop media on to the media list (the light blue area as seen above).

Add using Add button.

The



button can be used to add media.

Remove using Remove button.

The



button can be used to remove media.

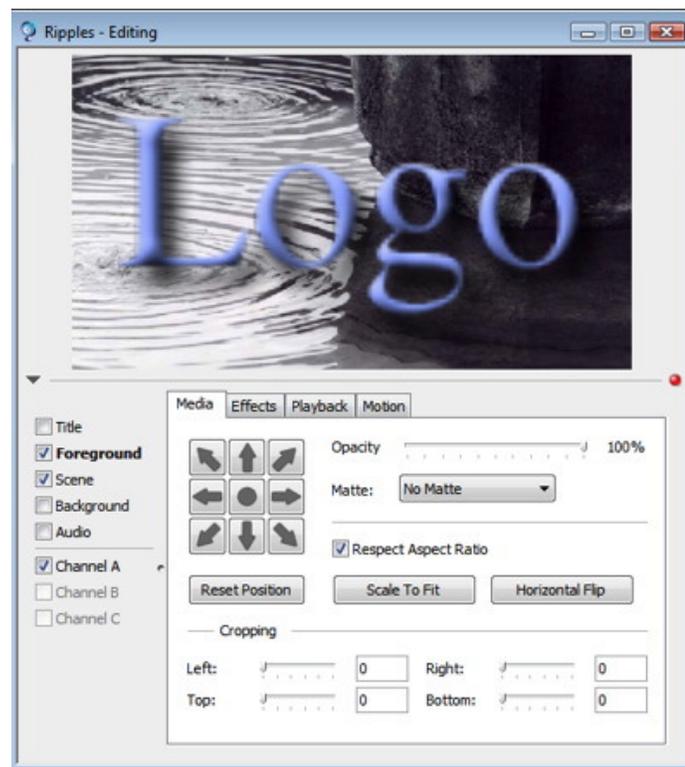
Chapter 20. Edit: Effects

Overview

Accessing the Effects panel.

The Effects panel is available when you are in the section called "Overview" and you have selected one of the following in the section called "Shot Elements": Title, Foreground, Background, or Channel A,B,C.

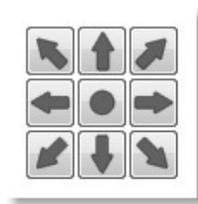
In the example shown below, we are editing the "Ripples" shot and have selected the Foreground element.



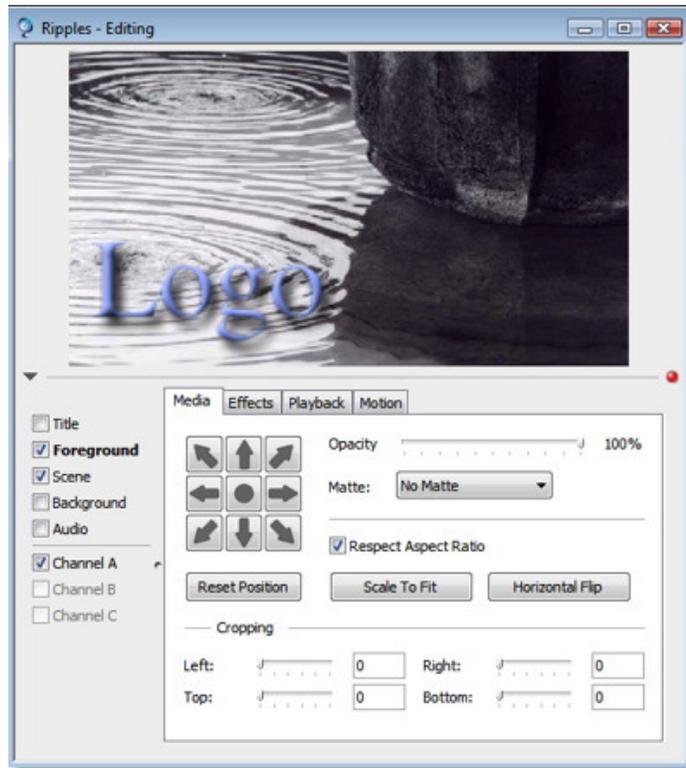
Position

Position.

Pressing the Position buttons (arrows) allows you to quickly control the position of the media inside of the broadcast boundary.



In the example below, Position has been applied to the "logo.png" image.



Using the mouse.

In addition, you can move, scale, and rotate the image using the mouse:

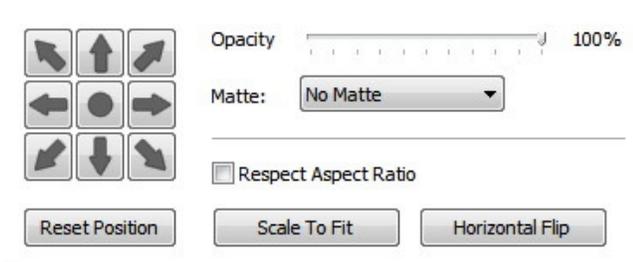
- *Move Media* -- Use the mouse in the Preview area.
- *Resize Respect Aspect* -- Hold the command key while moving the mouse in the Preview area.
- *Resize Media* -- Turn off the section called “Respect Aspect Ratio”. Hold the shift-command key while moving the mouse in the Preview area.
- *Rotate Media* -- Hold the option key while moving the mouse in the Preview area.

Opacity

Changing the Opacity.

The opacity control can be found on the right side of the the section called “Overview”.

It is the first slider shown here:



What is Opacity?

Opacity controls how much you can "see through" the media.

Note

If you want to turn off the media altogether, don't set Opacity to zero, as this still uses CPU. You should turn off the visibility of the the section called "Shot Elements".

Isn't that Transparency?

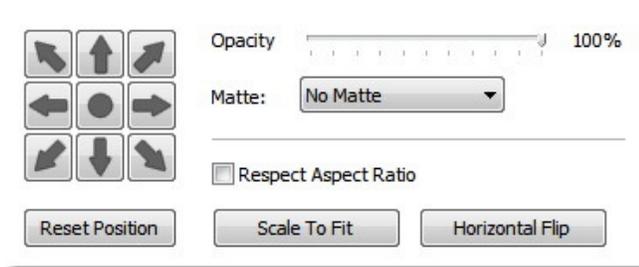
Strictly speaking transparency means to completely see through an object. In this case, we can partially see through the object, so it's called Opacity (or how Opaque the object is).

Matte

What is a Matte?

A matte is an image that is used to define the opacity of another piece of media.

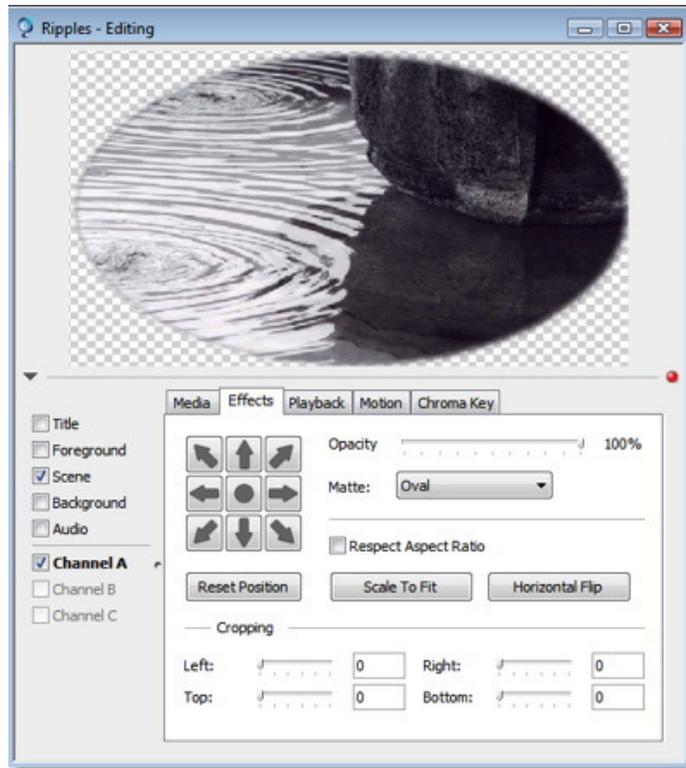
Wirecast comes with several mattes, which are in the matte popup, shown here:



Using a Matte.

Choose the desired matte from the popup.

Below is an example of the "Oval" matte:



Using your own Matte.

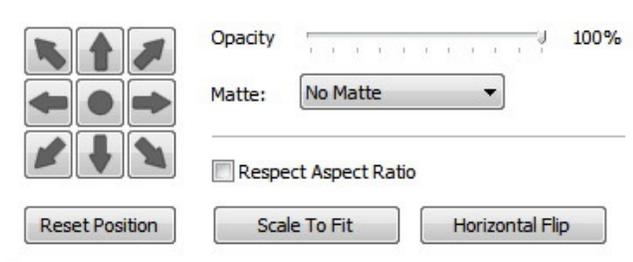
Any image which has an "alpha" channel will also show up in the Matte Popup.

Respect Aspect Ratio

Respecting the Aspect Ratio.

The Respect Aspect Ratio control can be found on the right side of the the section called “Overview”.

It is the checkbox shown on the bottom right:



What elements allow turning off Respect Aspect Ratio.

Only some the section called “Shot Elements” allow you to set this option.

Reset / Scale To Fit / Flip

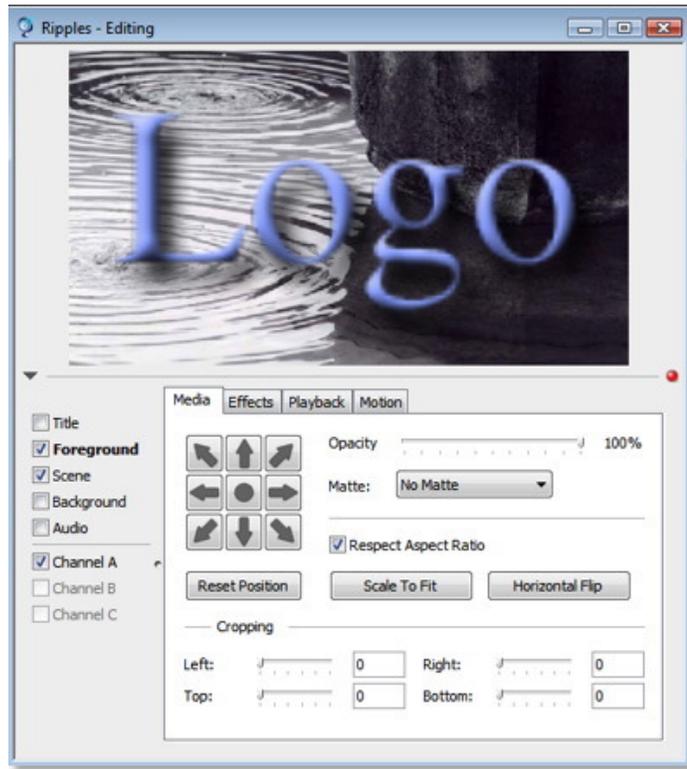
Reset Position.

Pressing the Reset Position button forces the media to be reset to its original position, size, rotation.

Scale to Fit.

Pressing the Scale to Fit button forces the media to be scaled to fit inside of the broadcast boundary.

In the example below, Scale To Fit has been applied to the "logo.png" image.



Horizontal Flip.

Pressing the Scale to Fit button will flip the media horizontally.

This is equivalent to rotating the image by 180 degrees horizontally.

Cropping

Cropping media.

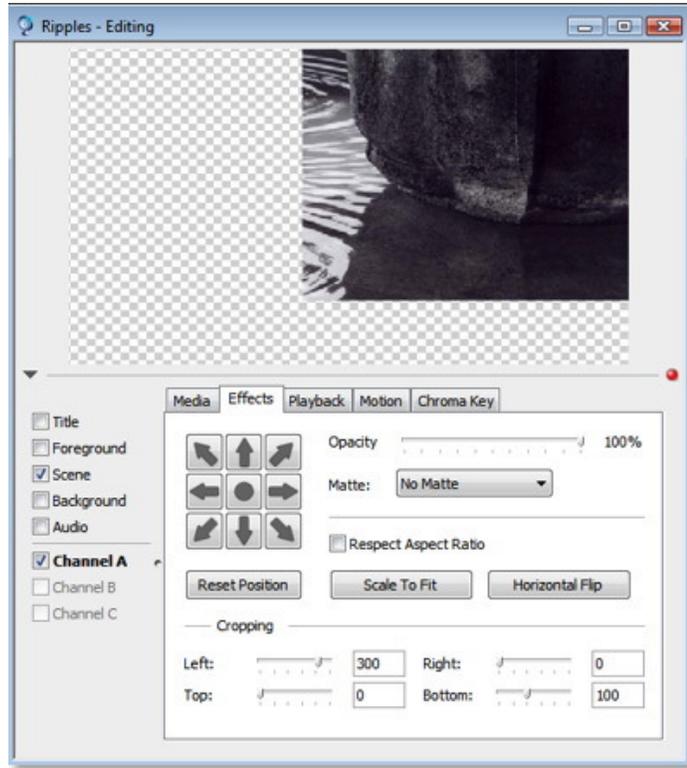
The cropping controls can be found at the bottom of the the section called "Overview".

There are four sliders/text boxes that control cropping, shown here:



An example.

Below is an example with the left cropped by 300 pixels and the bottom cropped by 100 pixels



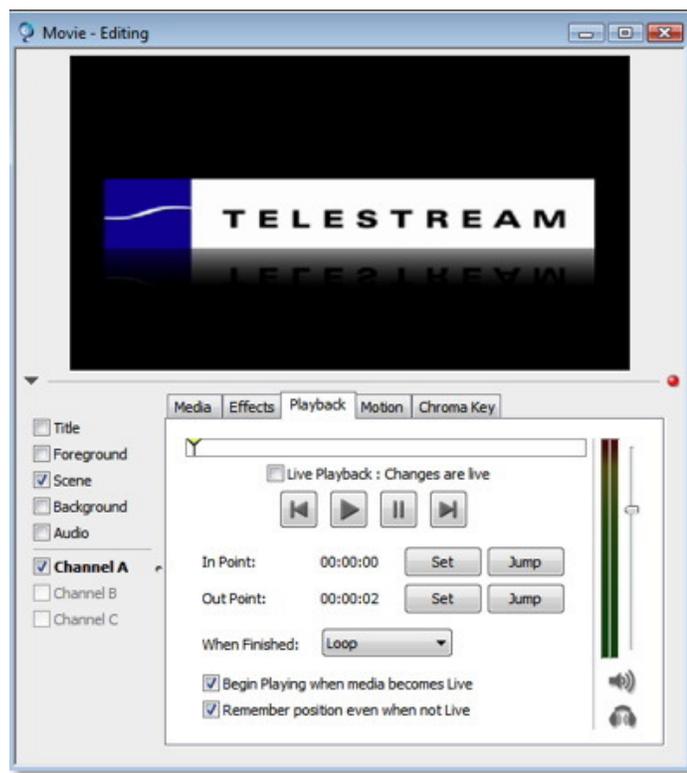
Chapter 21. Edit: Playback

Overview

Accessing the Playback Panel.

The Playback panel is available when you are in the section called “Overview” and you have selected one of the following sections called “Shot Elements”: Foreground, Background, Audio, or Channel A,B,C.

In the example shown below, we are editing the "Movie" shot and have selected the Channel A shot element.



Movies and Music.

This panel allows you to control how movies and music play in Wirecast.

You can control, for example, where in the movie or music Wirecast should the section called “In / Out Points”, whether the movie should the section called “When Finished”, when it is done playing, etc.

Here is more information on the different parts of the Playback Panel:

- the section called “Live Playback” -- controls whether your changes affect the Live Broadcast
- the section called “Playing / Scrubbing” -- controlling the start and stop
- the section called “In / Out Points” -- controls where in the media to start and stop playing
- the section called “When Finished” -- what to do when the media is finished (loop/hold/remove)

- the section called “Begin Playing” -- does the media automatically starts playing when it becomes live
- the section called “Remember Position” -- does the media remember its position when it is not live
- the section called “Audio” -- Volume, Mute, etc

Media which has Playback.

The playback panel will only allow modification of parameters on media for which the options are possible.

For example, if your media has no audio, then the audio controls will not be active.

A more common example is if your media is not temporal (has no time). For example, if you have a still image, you won't be able to set the In point or Output or "play" the image.

Scope.

The Playback panel information is stored in the Shot itself.

This means that when you, say, the section called “In / Out Points” you are only setting the in point in the shot you are editing.

If that media exists in a different shot, or even exists in the same shot but in a different the section called “Shot Elements” your changes will not be applied there.

Live Playback

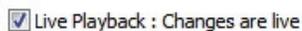
Live Playback is a part of the the section called “Overview” settings.

The affect of changes in the Playback Panel.

By default, changes in the Playback panel are like any other changes in the Shot Editor -- they do not take affect until you press the the section called “Transitions / Time / Go ”.

However, there are times when you may want to the section called “Playing / Scrubbing” and see the scrubbing in the Live broadcast.

Making your changes Live.



By checking the "Live Playback" checkbox as shown above, the changes you make in the Playback panel become live.

This gives you fine tune control over the movie or audio in the Live broadcast.

Note

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

Playing / Scrubbing

Playing / Scrubbing is a part of the the section called “Overview” settings.

It is important to understand the the section called “Live Playback” option as it is directly related to what the transport controls affect.

Scrubbing.

The above slider allows you "scrub" back and forth through your media.

The part you can move is called the "playhead".

To use this control, click inside the control and, while holding the mouse button down, move the mouse left and right.

If the section called "Live Playback" is on, and the shot you are editing is live, then the scrubbing will also be shown in your Live broadcast.

Setting the In Point and Out Point.

The primary usage of being able to move the Playhead is to set the the section called "In / Out Points".

Playing / Transport controls.

The buttons shown above allow you to Rewind, Play, Pause, and Fast Forward, respectively.

If the section called "Live Playback" is on, then pressing the Pause button will pause the media in your broadcast, and so forth.

In / Out Points

The In / Out Point controls are a part of the the section called "Overview" settings.

**What is the In Point.**

The In Point is the position in the media where playback will start from.

For example, if you set the In Point of a movie to 2 seconds, then whenever the movie starts to play (or loops back to the "start"), it will start from 2 seconds into the movie.

What is the Out Point.

The Out Point is the position in the media where playback will end.

For example, if you set the Out Point of a movie to 2 minutes, then whenever the movie gets to the 2 minute mark, it will loop or stop playing (depending on the the section called "When Finished" options you have set).

An Example.

Imagine you have set the In Point to 5 Minutes and the Out Point to 7 Minutes and set the section called "When Finished" to "Loop".

In this case, then when the movie first becomes Live, it will start playing from the 5 minute mark in the movie.

It will continue to play until it hits the 7 minute mark (it will have played for 2 minutes).

Then it will perform the Loop action, and return back to the 5 minute mark and start playing again.

You would move the playhead to a place you want the media to start, and then press the "Set" button to set the In point to that point. See the section called "In / Out Points" for more information.

Setting the In Point.

To set the In Point, you have to the section called "Playing / Scrubbing" to the point in the media you wish the In Point to be.

Then you press the first Set button, as shown above.

Setting the Out Point.

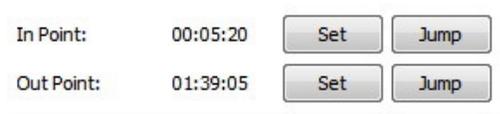
To set the Out Point, you have to the section called "Playing / Scrubbing" to the point in the media you wish the Out Point to be.

Then you press the second Set button, as shown above.

Jump.

Pressing the Jump button will move the playhead to the In Point or Out Point.

Time Strings.



Both the In Point and Out Point show the time which the point represents.

In the example shown above, the In Point is at 5 minutes and 20 seconds into the movie. The Out Point is at 1 hour, 39 minutes and 5 seconds.

When Finished

The When Finished options are a part of the the section called "Overview" settings.



When Finished.

You can control what happens when the media finishes playing (when it reaches the the section called "In / Out Points")

You have 3 options:

- **Loop** -- the media will loop back to the the section called "In / Out Points"
- **Hold** -- the media will simply stop and show the last frame

- **Remove** -- the media is removed from Live

Audio-only media.

For media with no video, the Hold and Remove are effectively the same option.

Begin Playing

The Begin Playing checkbox is a part of the the section called “Overview” settings.



Definition.

Controls whether the media should start playing when the shot becomes Live.

When Begin Playing is on (checked).

When this checkbox is checked, when the shot becomes live it will start playing this media.

When Begin Playing is off (un-checked).

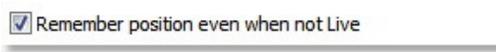
When this checkbox is not checked, when the shot becomes live it will not start playing this media.

Default.

This checkbox is on by default, meaning that media will start playing when the shot becomes live.

Remember Position

The Remember Position checkbox is a part of the the section called “Overview” settings.



Definition.

This option only controls what happens when a shot has been playing in Live and you transition to another shot which does not contain the same media.

Controls whether the shot remembers the last position it was played the media.

When Remember Position is on (checked)...

When Remember Position is on, the last position is remembered. When the shot becomes live again, it will start playing from that position.

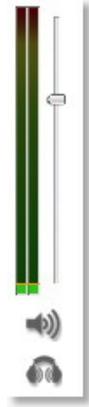
When Remember Position is off (un-checked)...

When Remember Position is off, the position is not remembered. When the shot becomes live again, the media will start playing from the the section called “In / Out Points”.

Default.

This checkbox is on by default; the position will be remembered when the shot is no longer live.

Audio



Controlling Audio of your media.

If a piece of media has audio in it, then the above control will be activated.

Each piece of media can have the audio independently controlled.

The slider bar to the right of the audio meter allows you to control the volume of the media.

Muting the media for your viewers.

If you want the media to not play any audio for your viewers ("mute"), then click on this button:



Muting the media for you, the operator.

If you want your users to continue hearing the media, but you want to mute it for your headphones (or your speakers), then press this button:



Chapter 22. Edit: Motion

Overview

Accessing the Motion Panel.

The Motion panel is available when you are in the section called “Overview” and you have selected one of the following sections called “Shot Elements”: Title, Foreground, Background, or Channel A,B,C.

In the example shown below, we are editing the "Ripples" shot and have selected Motion for the Foreground element.



Motion only occurs for Smooth transition.

Wirecast only ever performs motion when you are performing a "Smooth" transition in the section called “Transitions / Time / Go”.

If you are performing another transition, the Motion settings are ignored.

Build In and Build Out.

There are two types of motion:

- the section called “Build In” -- occurs when the element is entering the Live broadcast
- the section called “Build Out” -- occurs when the element is leaving the Live broadcast

Motion only occurs when the object needs to enter or leave the Live Broadcast.

If you have two shots which have a Foreground, and the media in the Foreground is the same, then a "Smooth" operation is performed between the foregrounds. The Motion is not performed.

For example, if the logo.png is the section called "Overview" in the top left in the old shot, and it's in the bottom right in the new shot, then when you make the new shot Live, the logo.png will actually smooth from the top-left corner to the bottom-right corner. The Build-In and Build-Out are ignored.

However, if you have two shots which have a Foreground, but the media is different, then the Build-Out will be run for the old shot, and the Built-In will be run for the New shot.

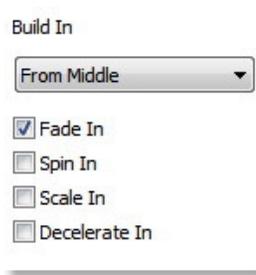
Build In

Build In.

Build In is a part of the the section called "Overview" settings.

The Build In motion occurs when the shot element is not in Live and will become Live. It only occurs when the Smooth the section called "Transitions / Time / Go " is active.

Here is what the Build In controls look like:



From

The Popup controls where the motion begins.

For example, if you select "From Left" then the motion will begin from just to the left of the visible area of the broadcast.

Fade In.

Controls whether the shot element should fade in.

If Fade In is unchecked, the element will "pop" into the Live, much like a Cut.

Spin In.

The shot element is spun into position.

Scale In.

The shot element is scaled in.

Decelerate In.

All of the above actions are done performed in a way that makes them appear to slow down.

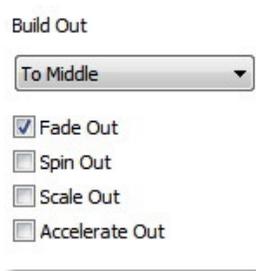
Build Out

Build Out.

Build Out is a part of the the section called “Overview” settings.

The Build Out motion occurs when the shot element is in Live and after the transition will not be. It only occurs when the Smooth the section called “Transitions / Time / Go ” is active.

Here is what the Build Out controls look like:



To

The Popup controls where the motion ends.

For example, if you select "To Left" then the motion will begin wherever the object happens to be and end just off to the left of the visible area of the broadcast.

Fade Out.

Controls whether the shot element should fade out.

If Fade Out is unchecked, the element will "pop" out of Live, much like a Cut.

Spin Out.

The shot element is spun out of position.

Scale Out.

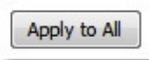
The shot element is scaled out.

Accelerate Out.

All of the above actions are done performed in a way that makes them appear to speed up.

Apply to All

Apply To All is a part of the the section called “Overview” settings.



Apply to All.

Makes the Motion Settings the same for **all** shot elements in this shot.

This is useful if you want to make all of your motion the same for all of the elements in the shot.

Chapter 23. Edit: Chroma Key

Overview

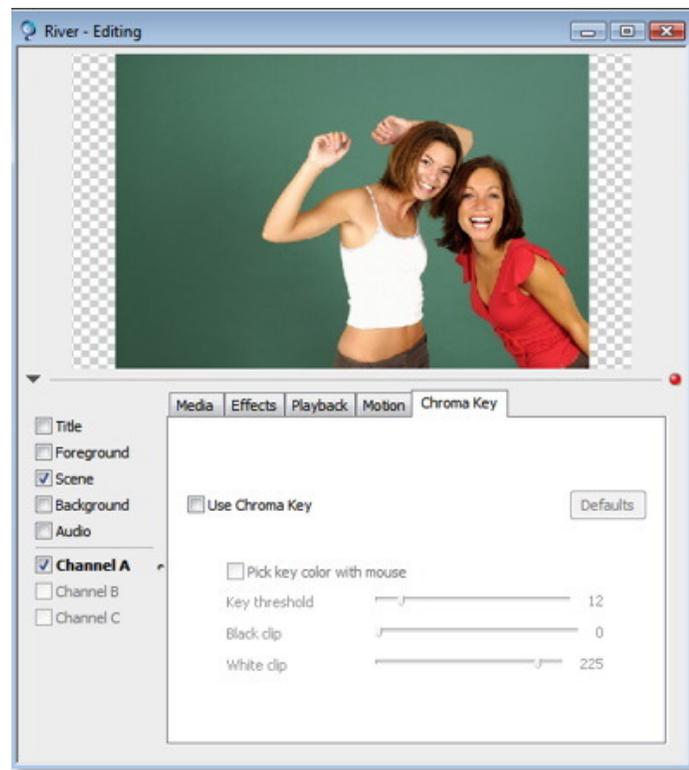
Overview.

Wirecast can now do real-time Chroma Key on your source.

You can use this feature only on a channel of a shot.

In the example below, we have edited a shot and selected the sample image "chroma_key.jpg" from the media list.

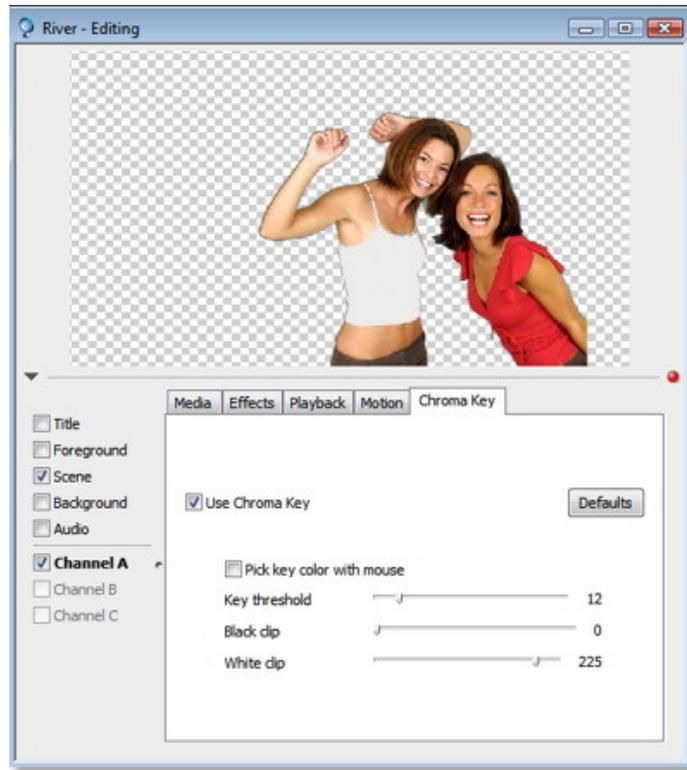
See the section called "Media Selection" for information on how to select media.



Configuration

Turning on Chroma Key.

The first thing to do is turn on the Chroma Key (a frame of your image is processed and defaults are applied):



Working top down.

The Chroma Key configuration panel is designed to for you to work from top to bottom, fine tuning your key as you go.

They biggest trick is to not "over-do it" on any one option. Getting a good key is about finding the right balance.

Selecting a key color.

So the very first thing you should do is select "Pick key color with mouse"

The "key color" is the color of the background you wish to "drop out" of the resulting media.

Make sure you get the best key possible by just selecting the key color before doing anything else.

Usually, clicking near the corners of the media gets the best key, but sometimes clicking near the subject gets the best key.

Key Threshold.

Once you have the best key by just picking the color, try adjusting the key threshold to drop out the background.

This parameter tells Wirecast how "close of a color" to the color you've chosen as the "key color" to allow to be "keyed" as well.

Black clip.

Oftentimes, dark areas are keyed out when they should not be (this has to do with how digital cameras work)

This parameter controls how close to "black" to **not** key out.

If you have black hair, you'll most likely want o move this up a little bit.

White clip.

Oftentimes, white areas are keyed out when they should not be (this has to do with how digital cameras work)

This parameter controls how close to "white" to **not** key out.

If you have a white shirt on, you'll most likely want o move this up a little bit.

Getting a good key

In General.

Probably the most important part of getting a good key is getting good source material.

Poor source material will generate poor keys; no algorithm can make up for this fact.

The better source material you have the easiest time you'll have dealing with any chroma key system.

Lighting.

Assuming a reasonable camera, the most important part of getting a good key is good lighting.

If you buy anything else, buy some good lights and learn to set them up properly.

Here are some basics:

- The background green/blue screen needs to be independently lit from the talent.
- Evenly light the green-screen (no shadows). The more evenly lit, the better.
- Light the talent evenly (no shadows). A fill light is very important (use a white board in an office)

Good Camera.

You should be able to get reasonable quality out of most reasonable cameras out there.

We have purposely purchased and tested with a low end DV camera to verify the quality of the key, but of course the better camera you have the better.

A cheap USB Web-cam will not give you enough source quality to get a reasonable key.

If you have excellent lighting, an iSight will work well.

3 CCD is better than 1 CCD, web cams will have poorer quality keying (some are just not usable, others passable, depending on your needs).

If you have the choice, a PAL camera is better than NTSC, due to how data is, internally, captured.

Capture Device Size.

In the the section called "Advanced", try changing the Capture Device size to "Native"

This gives much more data to the chroma key and allows for a better key, in general.

The trade-off is performance (more data means more to do when keying). But it's generally worth the tradeoff.

Note

If you use "Native" you must use Blend for deinterlacing.

High Quality Video.

if you are keying video (from disk, not capturing live), you should make sure that this option is checked in the the section called "Advanced" panel.

This tells Wirecast to decode the video from disk in the best quality possible thus giving the Chroma Key the best data possible to key from.

Wirecast will warn you if High Quality Video is off and you attempt to turn on Chroma Key.

Chapter 24. Acknowledgments

Overview

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

- the section called “Darwin Streaming Server”
- the section called “FFmpeg Project”

Darwin Streaming Server

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Version 2.0 - August 6, 2003

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