Wirecast Studio & Pro
User Guide



User Guide for Mac 16.3

telestream

September 10, 2024 | 1009241041

Contacting Telestream

To obtain product information, technical support, or provide comments on this guide, contact us using our web site, email, or phone number as listed below.

Resource	Contact Information
Wirecast Technical Support	Email: support@telestream.net URL: http://www.telestream.net/telestream-support Support Portal: https://support.telestream.net/
Telestream, LLC	Web Site: www.telestream.net Sales and Marketing Email: info@telestream.net Telestream, LLC 848 Gold Flat Road, Suite 1 Nevada City, CA USA 95959
International Distributor Support	Web Site: www.telestream.net See the Telestream Web site for your regional authorized Telestream distributor.
Telestream Technical Writers	Email: techwriter@telestream.net Share comments about this or other Telestream documents.

Copyrights and Trademark Notices

Copyright © 2024 Telestream, LLC and its Affiliates. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, altered, or translated into any languages without written permission of Telestream, LLC. Information and specifications in this document are subject to change without notice and do not represent a commitment on the part of Telestream. Specifications subject to change without notice.

Telestream, Aurora, CaptionMaker, CaptureVU, Cerify, Content Manager, ContentCentral, Cricket, DIVA, DIVAdirector, DIVADocs, DIVAGrid, DIVANet, DIVAProtect, DIVASolutions, Episode, Encoding Intelligence, Episode, FLEXVU, Flip4Mac, FlipFactory, Flip Player, Geminus, Glim, GraphicsFactory, Inspector, IQ & Design, Kumulate, Lightspeed, MassStore, MassTech, MetaFlip, Post Producer, Prism, ScreenFlow, Sentry, Singulus, Split-and-Stitch, Stay Genlock, Surveyor, Tempo, TrafficManager, Vantage, Vantage Cloud Port, VOD Producer, and Wirecast are registered trademarks of Telestream, LLC and its Affiliates and its Affiliates.

Argus, ContentAgent, Cricket, e-Captioning, Inspector, iQ, iVMS, iVMS ASM, MacCaption, Pipeline, Switch, and Vidchecker are trademarks of Telestream, LLC and its Affiliates. All other trademarks are the property of their respective owners.

Adobe. Adobe® HTTP Dynamic Streaming Copyright © 2014 Adobe Systems. All rights reserved.

Apple. QuickTime, MacOS X, and Safari are trademarks of Apple, Inc. Bonjour, the Bonjour logo, and the Bonjour symbol are trademarks of Apple, Inc.

Avid. Portions of this product Copyright 2012 Avid Technology, Inc.

CoreOS. Developers of ETCD.

Dolby. Dolby and the double-D symbol are registered trademarks of Dolby Laboratories Licensing Corporation.

Fraunhofer IIS and Thomson Multimedia. MPEG Layer-3 audio coding technology licensed from Fraunhofer IIS and Thomson Multimedia.

Google. VP6 and VP8 Copyright Google Inc. 2014 All rights reserved.

MainConcept. MainConcept is a registered trademark of MainConcept LLC and MainConcept AG. Copyright 2004 MainConcept Multimedia Technologies.

Manzanita. Manzanita is a registered trademark of Manzanita Systems, Inc.

MCW. HEVC Decoding software licensed from MCW.

MediaInfo. Copyright © 2002-2013 MediaArea.net SARL. All rights reserved.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Microsoft. Microsoft, Windows NT|2000|XP|XP Professional|Server 2003|Server 2008 |Server 2012|Server 2016|Server 2019|Server 2022, Windows 7, Windows 8, Windows 10, Windows 11, Media Player, Media Encoder, .Net, Internet Explorer, SQL Server 2005|2008|2012|2016|2019, and Windows Media Technologies are trademarks of Microsoft Corporation.

NLOG, MIT, Apache, Google. NLog open source code used in this product under MIT License and Apache License is copyright © 2014-2016 by Google, Inc., © 2016 by Stabzs, © 2015 by Hiro, Sjoerd Tieleman, © 2016 by Denis Pushkarev, © 2015 by Dash Industry Forum. All rights reserved.

SharpSSH2. SharpSSH2 Copyright (c) 2008, Ryan Faircloth. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer:

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Diversified Sales and Service, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Swagger. Licensed from SmartBear.

Telerik. RadControls for ASP.NET AJAX copyright Telerik All rights reserved.

VoiceAge. This product is manufactured by Telestream under license from VoiceAge Corporation.

x264 LLC. The product is manufactured by Telestream under license from x264 LLC.

Xceed. The Software is Copyright ©1994-2012 Xceed Software Inc., all rights reserved.

ZLIB. Copyright (C) 1995-2013 Jean-loup Gailly and Mark Adler.

Other brands, product names, and company names are trademarks of their respective holders, and are used for identification purpose only.

MPEG Disclaimers

MPEGLA MPEG2 Patent

ANY USE OF THIS PRODUCT IN ANY MANNER OTHER THAN PERSONAL USE THAT COMPLIES WITH THE MPEG-2 STANDARD FOR ENCODING VIDEO INFORMATION FOR PACKAGED MEDIA IS EXPRESSLY PROHIBITED WITHOUT A LICENSE UNDER APPLICABLE PATENTS IN THE MPEG-2 PATENT PORTFOLIO, WHICH LICENSE IS AVAILABLE FROM MPEG LA, LLC, 4600 S. Ulster Street, Suite 400, Denver, Colorado 80237 U.S.A.

MPEGLA MPEG4 VISUAL

THIS PRODUCT IS LICENSED UNDER THE MPEG-4 VISUAL PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER FOR (i) ENCODING VIDEO IN COMPLIANCE WITH THE MPEG-4 VISUAL STANDARD ("MPEG-4 VIDEO") AND/OR (ii) DECODING MPEG-4 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION INCLUDING THAT RELATING TO PROMOTIONAL, INTERNAL AND COMMERCIAL USES AND LICENSING MAY BE OBTAINED FROM MPEG LA, LLC. SEE HTTP://WWW.MPEGLA.COM.

MPEGLA AVC

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE HTTP://WWW.MPEGLA.COM.

MPEG4 SYSTEMS

THIS PRODUCT IS LICENSED UNDER THE MPEG-4 SYSTEMS PATENT PORTFOLIO LICENSE FOR ENCODING IN COMPLIANCE WITH THE MPEG-4 SYSTEMS STANDARD, EXCEPT THAT AN ADDITIONAL LICENSE AND PAYMENT OF ROYALTIES ARE NECESSARY FOR ENCODING IN CONNECTION WITH (i) DATA STORED OR REPLICATED IN PHYSICAL MEDIA WHICH IS PAID FOR ON A TITLE BY TITLE BASIS AND/OR (ii) DATA WHICH IS PAID FOR ON A TITLE BY TITLE BASIS AND IS TRANSMITTED TO AN END USER FOR PERMANENT STORAGE AND/OR USE. SUCH ADDITIONAL LICENSE MAY BE OBTAINED FROM MPEG LA, LLC. SEE HTTP://WWW.MPEGLA.COM FOR ADDITIONAL DETAILS.

Limited Warranty and Disclaimers

Telestream, LLC (the Company) warrants to the original registered end user that the product will perform as stated below for a period of one (1) year from the date of shipment from factory:

Hardware and Media—The Product hardware components, if any, including equipment supplied but not manufactured by the Company but NOT including any third party equipment that has been substituted by the Distributor for such equipment (the "Hardware"), will be free from defects in materials and workmanship under normal operating conditions and use.

Warranty Remedies

Your sole remedies under this limited warranty are as follows:

Hardware and Media—The Company will either repair or replace (at its option) any defective Hardware component or part, or Software Media, with new or like new Hardware components or Software Media. Components may not be necessarily the same, but will be of equivalent operation and quality.

Software Updates

Except as may be provided in a separate agreement between Telestream and You, if any, Telestream is under no obligation to maintain or support the Software and Telestream has no obligation to furnish you with any further assistance, technical support, documentation, software, update, upgrades, or information of any nature or kind.

Restrictions and Conditions of Limited Warranty

This Limited Warranty will be void and of no force and effect if (i) Product Hardware or Software Media, or any part thereof, is damaged due to abuse, misuse, alteration, neglect, or shipping, or as a result of service or modification by a party other than the Company, or (ii) Software is modified without the written consent of the Company.

Limitations of Warranties

THE EXPRESS WARRANTIES SET FORTH IN THIS AGREEMENT ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No oral or written information or advice given by the Company, its distributors, dealers or agents, shall increase the scope of this Limited Warranty or create any new warranties.

Geographical Limitation of Warranty—This limited warranty is valid only within the country in which the Product is purchased/licensed.

Limitations on Remedies—YOUR EXCLUSIVE REMEDIES, AND THE ENTIRE LIABILITY OF TELESTREAM, LLC WITH RESPECT TO THE PRODUCT, SHALL BE AS STATED IN THIS LIMITED WARRANTY. Your sole and exclusive remedy for any and all breaches of any Limited Warranty by the Company shall be the recovery of reasonable damages which, in the aggregate, shall not exceed the total amount of the combined license fee and purchase price paid by you for the Product.

Damages

TELESTREAM, LLC SHALL NOT BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING ANY LOST PROFITS, LOST SAVINGS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF YOUR USE OR INABILITY TO USE THE PRODUCT, OR THE BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF THOSE DAMAGES, OR ANY REMEDY PROVIDED FAILS OF ITS ESSENTIAL PURPOSE.

Further information regarding this limited warranty may be obtained by writing:
Telestream, LLC
848 Gold Flat Road
Nevada City, CA 95959 USA

You can call Telestream during U. S. business hours via telephone at (530) 470-1300.

Regulatory Compliance

Electromagnetic Emissions: FCC Class A, EN 55022 Class A, EN 61000-3-2/-3-3, CISPR 22 Class A

Electromagnetic Immunity: EN 55024/CISPR 24, (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11)

Safety: CSA/EN/IEC/UL 60950-1 Compliant, UL or CSA Listed (USA and Canada), CE Marking (Europe)

California Best Management Practices Regulations for Perchlorate Materials:
This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

Contents

Introduction 19

Introducing Wirecast 19
- Insider Access Support 19
- Wirecast *Studio* Features 19
- Wirecast Pro Features 20

Wirecast Workflow 21
- Two Ways to Use this Application 21
  - Presenter Is Operator 22
  - Presenter With Operator 22

Wirecast Resources 22
- Tutorials, Webinars, and Demos 22
- Wirecast Help, Guides, Knowledge Base, and Literature 23
  - Wirecast Virtual Assistant Help 23
  - Wirecast Literature and Documentation 23
  - Wirecast Knowledge Base 23
  - Wirecast User Group on Facebook 23
- The User Interface 23

Installation 25

General System Requirements 25
- Operating System 25
- Processor 25
- Memory 25
- Hard Drive 25
- Graphics Card 26
- Internet Bandwidth 26
- Network Ports 26

Rendezvous Requirements 26
- ISO Recording Requirements 27
- Recommended Hardware 27
- Hardware Accelerated Encoding Requirements 27

Installation and Removal 27
- Uninstalling Wirecast 28

Purchasing, Activating, and Deactivating Wirecast 28
Activating Wirecast Offline 29
Deactivating Wirecast 29
Resetting Your License 30
Logging In, Signing Up, or Running in Demo Mode 30
Support Subscriptions and Upgrades 30
Checking for Wirecast Updates 31
Demonstration Mode 31
Installing a Hardware Controller 31
Preventing Dropped Frames from Short Latency 32
The Wirecast Capture Folder 32

Customization 33

Launching Wirecast 33
The Wirecast Layout 34
Customizing Wirecast with Preferences 34
Resetting Preferences 34
Choosing the Wirecast Language 34
Document Hotkeys and Application Shortcuts 35
Changing a Keyboard Shortcut 36
Creating a Document Hotkey 36
Creating a Document Hotkey for a Shot 36
Creating a Document Hotkey for Multiple Shots 37
Displaying Either Hotkey Name or Key Combination on Shots 37
Setting the Primary Device for Audio Monitoring 37
Choosing a Video Adapter 37
Disabling Sleep Mode 38
Assigning CPU Usage 38
Keeping the Wirecast Window on Top 38
Selecting and Customizing Encoder Presets 38
External Display Outputs 38
Adding VST Plugins to the Available Audio Plugins 39
Adding a Custom LUT Filter 39

Document Creation and Input Configuration 41

Creating a Document 41
Adding Media to a Document 42
Configuring the Wirecast Layout 42
Resizing a Layer 42
The Preview Area 43
Viewing the Preview Area 43
Viewing a Shot in the Preview Area 43
Magnifying the Preview Scrub-Bar Scale 43
Setting Preview Playback Speed 43
Application Shortcuts and Document Hotkeys 44
Finding an Application Shortcut 44

Finding a Document Hotkey 44
Standard Shots 45
Creating a Shot from a Shot Template 45
Adding Media Files from a Local Drive to a Shot 45
Adding a Network Source to a Shot 46
Adding Media Files from the Stock Media Library to a Shot 46
Adding Video Sources to a Shot 46
Adding an NDI™ Source to a Shot 47
Adding an SRT Source to a Shot 47
Adding Audio Sources to a Shot 48
Creating a Consolidated Shot 48
Adding a Title to a Shot 48
Adding a Virtual Set to a Shot 48
Opening a Shot for Editing 49
Adding, Deleting, or Rearranging Layers in a Shot 49
Resizing or Rotating a Shot 49
Positioning an Image Within a Shot 50
Moving a Shot to Another Layer 50
Playlist Shots 50
Adding Clips to a Playlist Shot 51
Adding Clips to a Playlist from the Shots Menu 51
Editing Playlist Shots 51
Setting Playlist Shot Attributes 52
Changing the Duration of a Playlist Shot 52
Adding a Live Source to a Playlist Shot 52
Replay Shots 52
Creating a Replay Shot from a Selected Clip 52
Creating a Replay Shot from a Layer 53
Trimming a Replay Shot 53
Looping, Holding, or Removing a Clip After Playback 54
Social Media Shots 54
Displaying Social Media Comments 54
Configuring X (formerly Twitter) Comments 54
Configuring Facebook Live or YouTube Live Comments 55
Configuring Wirecast to Show Facebook User Name and Photo 55
Choosing a Social Media Title for Displaying Comments 56
Creating a Facebook Poll in Wirecast 56
Selecting a Facebook Poll 57
Editing or Deleting a Facebook Poll 57
Showing or Hiding a Poll or Results when Streaming to Facebook 57
Placeholder Shots 58
Adding and Modifying Template Placeholders 58
Assigning Media to Placeholders 58
Resetting Placeholders 59
Viewing Placeholders 59
Adding a Placeholder Shot 59
Deleting a Placeholder 59
Creating a Custom Shot Template 60

Deleting a Custom Shot Template 60
Add Shot Dialog 60
PTZ Cameras and Controls 61
Setting Up PTZOptics Camera with a Static IP Address 61
Configuring The PTZ Controller 62
Setting Up a PTZ Camera Shot 62
Opening the PTZ Controller Panel 63
Enabling Preset Recall for a PTZ Camera 63
Rendezvous 63
Starting a Rendezvous Session 64
Joining a Rendezvous Session as a Guest 65
Improving Rendezvous Audio with Music Mode 65
Opening the Advanced Rendezvous Audio Mixer 66
Adding a Guest to Rendezvous Dashboard 66
Adding a Guest to Wirecast Main or Shot Layer 66
Rendezvous Chat Features 66
Reconnecting to a Rendezvous Session 67
Sharing Screen, Camera, or Both as Rendezvous Guest 67
Ending a Rendezvous Session 68
Zoom 69
Joining a Zoom Session 69
Adding a Zoom Shot 69
Transitions 70
Setting Transition Speed 70
Specifying the Transitions for the Transition Buttons 70
Importing Stinger Transitions 70
Executing a Stinger Transition 71
Deleting Stinger Transitions 71
Supported File Types 71
Still-Image Types and Opacity 71
GIF and Transparency 71
Supported Codecs 72
Remapping Media Locations 72

Output Configuration 75

Destinations 75
Creating an SDP File for Your Viewers 75
Selecting a Destination 76
Adding a Destination 77
Removing a Destination 77
Creating a Multistream Output 77
> Modifying RTMP Server Destination Settings 78
Modifying SRT (Secure Reliable Transport) Destination Settings 78
Modifying CDN Partners Destination Settings 79
Configuring Most Common CDN Configurations 79
Modifying Azure Media Services and Sermon.net Destination Settings 80
Modifying Brightcove and Limelight Destination Settings 80

Modifying Akamai Destination Settings 81
Modifying LinkedIn Live Destination Settings 81
Modifying LiveArena Destination Settings 82
Modifying X (Twitter) Broadcast Destination Settings 83
Modifying Twitch Destination Settings 83
Modifying Vimeo Destination Settings 84
Modifying Wowza Streaming Engine Destination Settings 85
Modifying Zixi Destination Settings 85
Modifying Facebook Live Destination Settings 86
Modifying Microsoft Stream Destination Settings 87
Modifying YouTube Destination Settings 87
Encoder Presets 88
Selecting an Encoder Preset 89
Creating an Encoder Preset 89
Modifying the MainConcept H.264 Preset 90
Modifying the x264 Preset 91
Mapping Audio Tracks to Output Audio Channels 93
Mapping Audio Mixes to Playback Devices 93
Modifying the ProRes Preset 94
Streaming 94
Streaming Status Colors 95
Buffer Utilization 95
Colors 96
Troubleshooting Connectivity for Streaming 97
Limiting Reconnection Attempts 97
Configuring Replay + ISO 97
Activating Replay 99
Configuring ISO Recording 99
Capture Source ISO 100
Shot ISO 100
ISO Recording Formats 100
Quality 101
Filename 101
File Options 101
Recommended Minimum System for ISO Recording 102
Recording To Disk 102

Live Broadcast Production 103

Launching Wirecast 103
Switching 103
Switching with Preview 103
Switching to a Playlist 104
Single-Click Switching with AutoLive 104
Locking Layers, Preview, or the Shot Editor 104
Broadcasting 104
Applying a Video Filter to a Source 105
Applying a Video Filter to a Shot 105

Removing a Background from a Shot 106
Viewing the Countdown Timer for a Shot 106
Taking a Snapshot of the Live Broadcast Area 106
Final Mix Audio 107
Displaying the Audio Mixer 107
Displaying or Hiding the Final Mix Audio Panel 107
Controlling or Muting the Final Mix Audio Level 107
Adding a Filter to an Audio Channel 107
Adding a Filter to the Final Audio Mix 108
Viewing a Layer in a Layer Window 108
Social Media Comments 108
Sorting Social Media Comments 109
Moderating Social Media Comments 109
Moderating Facebook or YouTube Comments for a Streaming Computer or RTMP Server 109
Creating a Border 110
Controlling a PTZ Camera 111
Tracking a Face with Virtual PTZ 111
Starting your ISO Recording 111
ISO Error Reporting 112
Configuration Errors and Warnings 112

Windows, Controls, and Menus 113

Control/Status Bar 114
Transition Buttons 116
Changing Transitions 116
Go Button 116
Mode Selection Buttons 116
Playlist Controls 117
Replay Controls 118
Playlist Countdown Timer Display 119
Touch Bar (MacBook Pro only) 119
Preview Area 120
Live Broadcast Area 120
Snapshot Button 120
Final Mix Audio Panel 121
The Preview Monitor Audio Button 121
The Final Mix Monitor Audio button 122
The Final Mix Mute Button 122
Layers 123
Add Shot Window 123
Video Capture 124
Audio Capture 124
Media Files 124
Stock Media Library 126
Network 127
Web Page Properties 127

Web Stream Properties 128
Screen Capture 129
Remote Desktop Presenter Properties 130
Screen Capture Properties 130
Overlays 131
Text Shot Properties 132
Titles (Animated) Properties 134
Title (legacy) Properties 135
Twitter Feed (legacy) Properties 137
Scoreboard Properties 138
Clock Properties 140
Image Carousel Properties 142
QR Code Generator Properties 142
Backgrounds 142
Solid Color Properties 143
Templates 143
Shot Template 143
The Shot Editor Window 144
Shot Layers Tab 144
Shot Layer Sizing Buttons 145
Replay Layer 145
Shot Layers Properties Tab 145
PTZ Control in the Shot Layer Properties Tab 148
NDI Devices in the Shot Layer Properties Tab 148
Audio Properties Tab 149
Video Filters Tab 150
Chroma Key 151
Luma Key 152
Color Key 152
Blur 153
Virtual PTZ 153
Background Removal 153
Smooth Transition Properties Tab 153
Source Properties Tab 154
Playlist Properties Tab 157
The Shot Menu 158
The Preferences Dialog Box 160
General Preferences 160
Canvas Preferences 161
Shot Display Preferences 161
Shot Selection Icons 162
Licenses Preferences 162
Update Preferences 163
Shortcuts Preferences 163
Controllers Preferences 164
MIDI Control Assignments 164
MIDI Control Descriptions 165
X-keys Control Assignments 167

General Key Operations 167
Key Descriptions 167
Advanced Preferences 169
The Audio Mixer Window 171
The Add FX (+) Drop-Down Menu 172
The Output Settings Window 173
Multicast and Unicast Destination Settings 175
Facebook Live Destination Settings 175
The Multi-Track Input Mapper 175
The Encoder Presets Window 176
The Comment Moderation Window 177
The PTZ Controller Panel 179
Menus and Application Keyboard Shortcuts 182
Wirecast Menu 182
Edit Menu 183
Switch Menu 186
Media Menu 188
Output Menu 189
Layout Menu 192
Replay + ISO Menu 193
Social Menu 195
Facebook 195
Comments 195
Zoom 195
Window Menu 195
The Rendezvous Dashboard 197
The Rendezvous Guest Window 199
Help Menu 200

Tutorials 203

Tutorial 1: Basic Concepts 203
Tutorial Prep 203
The Wirecast Default Layout 204
What Is a Shot? 204
Switching Between Shots 204
Transitions 205
Transition Speed 205
Layers 205
Auto Live 206
Turning AutoLive Off 206
Multiple Changes 206
Preview 207
Tutorial 2: Editing Shots 207
Tutorial 3: Broadcasting 208
Streaming 208

Making Great Broadcasts 209

High Quality Audio 209
Good Lighting 210
    Triangular Lighting 210
Optimal Broadcast Settings 211
    Bandwidth 211
    Motion 211
    Encoder Settings 211

Acknowledgments 213

Steinberg VST Plug-In SDK Licensing Agreement
        (Version 3.6.6- 17.06.2016) 213
MIT 213
TurboJPEG 214

Introduction

Wirecast is professional software for live Internet broadcasting.

Topics

- Introducing Wirecast 19
- Wirecast Workflow 21
- Wirecast Resources 22

Introducing Wirecast

Wirecast has tools for each step of a broadcast: capture, switching, and streaming. Wirecast is available in two versions: *Studio* and *Pro*.

Note: A *broadcast* in this guide means an audio-video stream, with related data, sent typically over the Internet.

Insider Access Support

Both *Studio* and *Pro* include one year of Insider Access Support. This includes:

- Free updates
- Access to the Stock Media library
- Access to the Knowledgebase
- On-demand video training
- Email support

Insider Access Support responds within eight business hours.

Wirecast *Studio* Features

- Capture
  - Unlimited inputs
- Conferencing
  - Two remote guests
  - Rendezvous

- Production
  - 4096 x 3072 maximum resolution
  - Five composite layers
  - Lower-third animated titles
  - Titling
  - Chroma key
  - Transitions
  - Playlists
  - Audio mixer
  - Social-media comment moderation
- Outputs
  - Multiple simultaneous record-to-disk locations
  - Virtual camera
  - Mic
  - 1-4 slot unlimited multi-viewer

Wirecast Pro Features

Wirecast Pro includes all the features of Wirecast Studio, plus the following:

- Advanced capture
- Advanced conferencing
  - Rendezvous for seven remote guests
- Advanced production
  - PTZ camera control
  - Pro audio FX
  - Virtual sets and backgrounds
- Sports production
  - Instant replay
  - Scoreboards
- Advanced outputs
  - Baseband SDI/HDMI
  - NDI program
  - Secondary display
  - 1-17 slot multi-viewer
- ISO recording of sources
- Multi-track audio recording

Features available only in Wirecast *Pro* are indicated by this *Pro* icon:

PRO

Wirecast Workflow

Wirecast fits well at the center of a broadcasting workflow. Wirecast replaces *T-bar* switchers, graphics generators, and title generators. Alternatively, use Wirecast simply as the back-end encoder for a switcher.

Wirecast workflows usually follow four-steps:

1. Connect inputs such as cameras, computer outputs, and web feeds.
2. Capture content.
3. Produce the program.
4. Stream the program live, or record it to a local drive.



Two Ways to Use this Application

There are two different ways you can use Wirecast:

Presenter Is Operator

In this mode, the presenter also operates Wirecast.

When you are both the presenter and the operator:

- **Keep it simple** Use few shots so it's easy to select shots.
- **Turn on AutoLive** This lets you take each shot live with a single click. To turn AutoLive on or off, select *AutoLive* from the *Switch* menu.
- **Pre-configure your shots** Create all shots prior to the broadcast. Set up the logo and titles ahead of time. Don't create or modify shots while presenting.
- **Use hot-keys for switching shots** Assign hotkeys to your shots with the Wirecast hotkey editor.

Presenter With Operator

In this mode, one person runs Wirecast, while another makes the presentation.

When you are the operator for a separate presenter:

- **Turn AutoLive off** This lets you make several changes before taking a shot live. To take a shot live quickly, press Command+and click the shot. To turn AutoLive on or off, select *AutoLive* from the *Switch* menu.
- **Open the Preview Area** Use Preview mode to examine each shot before taking it live. To turn Preview display on or off, select *Preview* from the *Layout* menu.
- **Open Layer Windows** Layer windows let you quickly switch between shots on several layers. To open a layer window, select *Window* > *New Layer Window*.

Wirecast Resources

For information about Wirecast, visit these Telestream resources.

Tutorials, Webinars, and Demos

To learn Wirecast basics quickly, work through the *Tutorials* in the *Wirecast User Guide*. The project built into Wirecast supports these tutorials. The three tutorials take about thirty minutes, total.

Find tutorials, webinars, and product demos on the Wirecast Training Resources page: https://telestream.net/telestream-support/wire-cast/training.htm

Find more tutorials, webinars, and product demos on Vimeo at these locations:

Wirecast Webinars

Wirecast Tutorial Series: Part I

Wirecast Tutorial Series: Part II

For tips to improve your broadcasts, see *Making Great Broadcasts*.

Wirecast Help, Guides, Knowledge Base, and Literature

Find Wirecast literature, user guides, and customer case studies on the Wirecast Literature and Documentation page. Find Wirecast technical articles on the Wirecast Knowledge Base.

Wirecast Virtual Assistant Help

To get instructions on using Wirecast from the Wirecast Virtual Assistant, do the following:

1. Select *Help* > *Wirecast Virtual Assistant*.

   Wirecast opens the *Wirecast Virtual Assistant* dialog.

2. Type your question into the field labeled, *Please enter your question*, and press Enter.

See *Wirecast Virtual Assistant*.

Wirecast Literature and Documentation

https://telestream.net/wirecast/resources.htm#docs

Wirecast Knowledge Base

Wirecast Knowledge Base

https://telestream.net/wirecast/resources.htm#docs

Wirecast User Group on Facebook

https://www.facebook.com/groups/wirecastusers/about

The User Interface

For descriptions of the Wirecast menu items, tools and windows, see *Windows, Controls, and Menus*.

Installation

You can install Wirecast on any Mac or Windows computer that meets the minimum system requirements.

Topics

- General System Requirements 25
- Installation and Removal 27
- Purchasing, Activating, and Deactivating Wirecast 28
- Support Subscriptions and Upgrades 30
- Checking for Wirecast Updates 31
- Demonstration Mode 31
- Installing a Hardware Controller 31
- Preventing Dropped Frames from Short Latency 32
- The Wirecast Capture Folder 32

General System Requirements

Operating System

- Minimum: macOS 10.15 Catalina or higher
- Recommended: macOS Monterey 12

Processor

- Minimum: Apple M1
- Recommended: Apple Silicon M1 or newer

Memory

- Minimum: 8GB RAM
- Recommended: Apple Silicon 16 GB unified memory

Hard Drive

- Minimum: 7200 RPM Hard Drive (HDD) for recording to disk

- Recommended: Solid State Drive (SSD)

Graphics Card

- Minimum: Apple Silicon 8 GB unified memory
- Recommended: Apple Silicon 16 GB unified memory

Internet Bandwidth

Recommended: Total bitrate needed x 2 = required upload bandwidth

Network Ports

Make sure the following ports are open for traffic on your network:

- 80 (HTTP/HTTPS)
- 443 (SSL)
- 1935 (RTMP)
- 2935 (RTMPS)
- 3478 (STUN/Rendezvous)
- 5349 (STUN/Rendezvous)
- 5353 (mDNS for NDI sources)
- 5960-59xx NDI port range (one port for each NDI source in use)
- 7272 (Remote Desktop Presenter)
- 49152-65535 (WebRTC Media/Rendezvous, selected at random)

If you're behind a firewall, ask your streaming destination for any sites you should whitelist.

Rendezvous Requirements

Rendezvous uses WebRTC technology, requiring speed and power. These are the minimum bandwidth and CPU power for good Rendezvous performance:

Rendezvous Bandwidth Requirements	**Studio (2 guests + 1 host)**	**Pro (7 guests + 1 host)**
Bandwidth[1]	Add 4 Mbps	Add 5+ Mbps[2]
Processor[1]	5 quad-core[3]	7 quad-core[3]

Based on a single simultaneous stream of 720p 30 x264 @ 4.0 Mbps.

[1] As you add guests, Wirecast reduces the bandwidth per guest. This maintains reliability.

[2] Minimum recommended processor with example stream4.

[3] Demanding workflows might require a more capable CPU.

ISO Recording Requirements

- Solid State Drive or fast RAID array recommended
- Data rates vary depending on the recording, resolution, and frame rate selected.
  - For Mac ProRes recording, refer to the Apple ProRes data-rate specifications.
- Keep total expected data rate within available disk write speed.

Note: If the highest total data rate exceeds the disk-write speed, Wirecast might drop frames.

Recommended Hardware

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

Note: 60 FPS streaming increases CPU usage and bit rate. Add 4Mbps or higher for good quality.

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

Hardware Accelerated Encoding Requirements

- Intel Quick Sync Video encoding requires an Intel CPU with an Intel® QuickSync Video core.
- NVIDIA NVENC encoding requires an NVidia GPU with Kepler architecture or newer.
- Apple Hardware Accelerated H.264 encoding requires a Mac with an integrated Intel GPU.

  Currently, Wirecast supports Quick Sync only via an Intel CPU.

Installation and Removal

You can install Wirecast on any Windows or Mac computer that meets the Wirecast basic system requirements.

Installing Wirecast

To install Wirecast, do the following:

1. Download the installer from the Telestream website:

   https://dynamic.telestream.net/downloads/download--wirecast.asp?prodid=wirecast.

2. Run the installer (DMG) program.

   If you have an older version of Wirecast already installed, the installer upgrades to the newer version.

3. (Optional) The installer asks whether you want to install the Virtual Microphone. If you do, check the box for this feature. You must have administrative rights to install Virtual Microphone.

4. Open the Wirecast installer in your downloads folder. Click and drag the Wirecast icon into the *Applications* folder. If a version of Wirecast already exists, the installer asks whether you want to replace the previous version.

Uninstalling Wirecast

1. To uninstall Wirecast, Choose the Wirecast program icon in *Finder Applications*, or on your desktop.
2. Place the Wirecast program in the *Trash* folder.

Purchasing, Activating, and Deactivating Wirecast

You can purchase and activate Wirecast on a computer that is either online or offline.

See:

Production & Streaming: Renewal & Licensing Questions.

https://support.telestream.net/s/article/Licensing-Questions

Wirecast Activation Guide for Mac

https://vimeo.com/172647029

Wirecast Activation Guide for Windows

https://vimeo.com/172647032

Purchasing and Activating Wirecast Online

To purchase and activate Wirecast, do the following:

1. Launch Wirecast.
2. Select *File* > *Preferences* > *Licenses*, and click *Purchase*. Purchase Wirecast.

   Telestream sends you a Wirecast serial number.

3. Close and relaunch Wirecast.

   Wirecast opens the *Welcome* dialog.
4. Click *Enter existing serial number*.

   Wirecast opens the *Enter serial number* field.
5. Enter your serial number into the *Enter serial number* field.
6. Click *Continue*.

   Telestream validates the serial number and activates Wirecast.

Note: You can also purchase a serial number at *telestream.net*.

See *Preferences*.

Activating Wirecast Offline

If the Wirecast computer is not on the Internet, activate your license and unlock Wirecast on another computer that is online. To activate your license from another computer, do the following:

1. Follow the steps in the *Offline Activation Guide* at:

   https://telestream.net/telestream-support/wire-cast/training.htm.

   Telestream sends you a serial number for Wirecast.
2. On the offline machine, launch Wirecast.

   Wirecast opens the *No Internet Connection* dialog.
3. Click *Enter existing serial number (offline activation)* button.

   Wirecast opens the *Enter serial number* field.
4. Enter your serial number into the *Enter serial number* field.
5. Click *Continue*.

   Telestream activates Wirecast.

See also Wirecast Offline Activation Guide.

Deactivating Wirecast

Deactivating a serial number on one computer allows you to re-activate it on another computer. Without an activated license, Wirecast reverts to demonstration mode.

See *Demonstration Mode*.

Note: You can always reactivate a serial number by re-entering it into the *License Key* field and clicking *Activate*.

To deactivate Wirecast, do the following:

1. Select Wirecast > *Preferences* > *Licenses*.

2. Click *Deactivate*.

   Wirecast deactivates the serial number and removes it from the *License Key* field.

Note: Access the *License Reset Tool* at:
https://telestream.net/telestream-support/deactivate-software.htm

See *Preferences*, and *Resetting Your License*.

Resetting Your License

At times you might need to reset your Wirecast license with a new serial number. For example, if you try to log in several times with incorrect serial numbers, Telestream might prevent you from logging in without a new serial number. In such cases, you can use the Telestream *License Reset Tool* to acquire a new serial number for your license. To reset your Wirecast license, do the following:

1. Go to, License Reset Tool.
2. Follow the instructions on the License Reset Tool page.

See *Deactivating Wirecast*.

Logging In, Signing Up, or Running in Demo Mode

To log into Wirecast, sign up for Wirecast, or run Wirecast in Demonstration mode, do the following:

1. Launch Wirecast.

   Wirecast opens the *Welcome* dialog.
2. Click one of the following buttons on the *Welcome* dialog, as desired:
   - Log in
   - Sign up
   - Demonstration

Support Subscriptions and Upgrades

With each purchase of Wirecast, you receive a one-year subscription to *Insider Access Support*. *Insider Access Support comes with* upgrades as well as with full licenses. You can renew this subscription annually.

For an additional fee, you can upgrade from an *Insider Access Support* subscription to a *Premium Access Support* subscription.

You can upgrade to the latest version of Wirecast for free as long as your license and support subscription are active. To upgrade, download and install the latest version of Wirecast.

If your support subscription has expired, or you haven't entered your license key into the software, Wirecast reverts to demonstration mode. In demonstration mode, you can't upgrade. In demonstration mode, you can continue to use the last version of Wirecast released while you had an active support subscription.

See *Demonstration Mode*.

Before your support subscription expires, Wirecast prompts you to renew it. If you don't renew before the subscription expires, you can re-subscribe at any time for an additional fee.

See also *Support Subscriptions and Upgrades*.

Checking for Wirecast Updates

To check for Wirecast software updates, do the following:

1. Select Wirecast > *Preferences* > *Software Update*.
2. Click *Check Now*.

   Wirecast checks for updates without transmitting personal data to Telestream.

See *Preferences*.

Demonstration Mode

With no active serial number, Wirecast enters demonstration mode. In demonstration mode, Wirecast watermarks all outputs, both to disk and to networks. The video watermark is a periodic overlay of the Wirecast logo. The audio watermark is a periodic voice-over. If you use a Wirecast Studio serial number with a Wirecast Pro feature, Wirecast watermarks the outputs from the Pro feature.

Installing a Hardware Controller

You can control many Wirecast functions with some hardware controllers, also called Human Interface Devices (HIDs). Wirecast provides control to these MIDI controllers:

- APC MINI
- APC40mk2
- Launchpad MK2

Wirecastprovides control to this X-keys controller:

- XKeys 128

To install a hardware controller for Wirecast, do the following:

1. Select *Wirecast* > *Preferences* > *Controllers*.
2. Select a controller from the drop-down menu.

3. To close the *Preferences* dialog box, click the "x."

   See *Preferences*.

Preventing Dropped Frames from Short Latency

You can prevent Wirecast from dropping frames, and optimize Wirecast performance, by lengthening latency.

Wirecast adds latency to all incoming sources. Latency is the period between receiving video and processing it. This gives Wirecast time to store the incoming data properly. *Application Source Latency* lets you set the length of the latency. The lower this value, the less time Wirecast takes between receiving data and using it. If the latency is too brief or the bitrate too slow, Wirecast drops frames or introduces audio blips. You can set the value for *Application Source Latency* from a minimum of 50 ms to a maximum of 330 ms. The default is 300 ms.

To prevent dropping frames from short latency, do the following:

1. Select *FileWirecast* > *Preferences* > *Advanced*.
2. Enter a value, in milliseconds, into the *Application Source Latency* field.
3. To close the *Preferences* dialog box, click the "x."

See *Preferences*.

The Wirecast Capture Folder

If your computer has a drive for capturing media, Wirecast detects the drive on first launch. Wirecast creates the folder, *Wirecast Recordings*, on the media capture drive.

Customization

You can customize Wirecast to your needs through Wirecast preferences.

Topics

- Launching Wirecast 33
- The Wirecast Layout 34
- Customizing Wirecast with Preferences 34
- Choosing the Wirecast Language 34
- Document Hotkeys and Application Shortcuts 35
- Setting the Primary Device for Audio Monitoring 37
- Choosing a Video Adapter 37
- Disabling Sleep Mode 38
- Assigning CPU Usage 38
- Keeping the Wirecast Window on Top 38
- Selecting and Customizing Encoder Presets 38
- External Display Outputs 38
- Adding VST Plugins to the Available Audio Plugins 39
- Adding a Custom LUT Filter 39

You can select most preferences directly from a Wirecast document or from the *Shot Editor*. You can also manage your licenses, update your software, and select advanced video preferences through the *Preferences* window.

Launching Wirecast

To start Wirecast, double-click the Wirecast icon that was placed on your desktop during installation.

Note: You can determine whether Wirecast displays the landing page, and whether Wirecast opens the last document you worked on, at startup.
See *Show landing page on startup* and *Open last document on startup*.

The Wirecast Layout

Before customizing the Wirecast layout, familiarize yourself with the default layout, and with the main Wirecast windows, controls, and menus.
See *The Default Layout*.

Customizing Wirecast with Preferences

You can customize Wirecast to meet your particular production needs, and types of equipment, by choosing preferences.

See *The Preferences Dialog Box*.

To customize Wirecast, do the following:

1. Select *Wirecast* > *Preferences*.
2. In the *Preferences* dialog, click one of these headings to view and change its associated preferences:
   - General
   - Canvas
   - Shot Display
   - Licenses
   - Update
   - Shortcuts
   - Controllers
   - Advanced

Wirecast applies your preferences immediately, and saves them automatically, every time you change a preference.

Resetting Preferences

To reset your preferences, use *Support Assistant*.

See *Send Support Information* and *Preferences*.

Choosing the Wirecast Language

You can choose the language for the Wirecast user interface from among any of the languages supported. To set the language for Wirecast, do the following:

1. Select *Wirecast* > *Preferences*.

   Wirecast opens the *Preferences* dialog.
2. In the *Preferences* dialog, click *Advanced*.

3. To open the *Language* drop-down menu, click the downward-pointing arrow next to the Language field.

   Wirecast opens the *Language* drop-down menu.
4. Select the desired language from the drop-down menu.

   Wirecast displays a *Shutdown* dialog.
5. Click the *Shutdown* button.
6. Re-launch Wirecast.

   Wirecast displays the selected language in the user interface.

   See *Language*.

Document Hotkeys and Application Shortcuts

You can control most of the standard Wirecast commands with pre-set application keyboard shortcuts. Also, you can create document hotkeys for document commands you use often.

Creating a Keyboard Shortcut Set

You can create new keyboard shortcut sets, including both application keyboard shortcuts and document hotkeys, through the *Shortcuts* tab on the *Preferences* dialog. You create a new keyboard shortcut set by copying an existing keyboard shortcut set and modifying it.

To create a keyboard shortcut set, do the following:

1. Select *Wirecast* > *Preferences* > *Shortcuts*.
2. Select the keyboard shortcut set you want to copy from the *Keyboard Shortcut Set* drop-down menu.
3. Click *Configure* > *Duplicate Set*.

   Wirecast copies the selected keyboard shortcut set and adds it to the *Keyboard Shortcut Set* drop-down menu.
4. Select the new keyboard shortcut set from the *Keyboard Shortcut Set* drop-down menu.
5. Click *Configure* > *Rename*.

   Wirecast opens a renaming dialog box.
6. Enter a name for the keyboard shortcut set in the field under *Please enter a new name for the Set*, and click *OK*.

   Wirecast renames the keyboard shortcut set, and closes the *Preferences* dialog box.

See also *Shortcuts Preferences*.

Changing a Keyboard Shortcut

You can't change any of the default application shortcuts in the *Default* keyboard shortcut set. However, you can copy the *Default* keyboard shortcut set, and edit the application shortcuts in the copied keyboard shortcut set. Also, you can change the document hotkeys.

To change a keyboard shortcut (either an application shortcut or a document hotkey), do the following:

1. Create a keyboard shortcut set by copying the *Default* keyboard shortcut set.

   See *Creating a Keyboard Shortcut Set*.

2. Select the keyboard shortcut you want to change.

   See *Finding an Application Shortcut* and *Finding a Document Hotkey*.

   Wirecast opens the *Click to record shortcut* field towards the bottom of the *Preferences* dialog.

3. Enter the key desired in the *Click to record shortcut* field.

   Wirecast saves the new keyboard shortcut.

Creating a Document Hotkey

To create a document hotkey, do the following:

1. Select *Wirecast* > *Preferences* > *Shortcuts* > *Document Hotkeys*.
2. Select a hotkey in the list.

   Wirecast opens the *Click to record shortcut* field.

3. Enter a key in the *Click to record shortcut* field.

   Wirecast binds the key to the command.

4. (Optional) To make your hotkey active even when the Wirecast window is not in focus, check *Global*. If *Global* is not checked, you must select the Wirecast window for the document hotkey to work.

   See also *Shortcuts Preferences*.

Note: If your hotkey combination already is assigned to a command, Wirecast displays a warning icon in the *Conflict* column. The *Conflicted* sub-tab of the *Application Shortcuts* tab displays conflicted application shortcuts.

Creating a Document Hotkey for a Shot

On a shot in the layers pane, click the gear icon, select *Assign Hotkey*, and select a hotkey from the menu.

Wirecast assigns the hotkey to the shot, and displays the keyboard shortcut in the shot icon.

See *Layers*, *Creating a Document Hotkey*, and *Shortcuts Preferences*.

Creating a Document Hotkey for Multiple Shots

You can assign the same document hotkey to multiple shots. This is useful when you want to activate different shots on different layers at the same time, using a single hotkey. To create a document hotkey for multiple shots, do the following:

1. Assign a keyboard shortcut to one shot.

   See *Creating a Document Hotkey for a Shot*.

2. Assign the same keyboard shortcut to a second shot on another layer.

   Wirecast displays the keyboard shortcut in both shot icons.

See also *Shortcuts Preferences*.

Displaying Either Hotkey Name or Key Combination on Shots

To determine whether Wirecast displays the hotkey name or the key combination itself on shots, do the following:

1. Open *Preferences*, and select the *Shot Display* tab.

   See *Customizing Wirecast with Preferences*.

2. Click the arrows for the *Display hotkeys using drop-down menu*.

   Wirecast displays the options *Key Combination* and *Hotkey Name*.

3. Select the type of hotkey display desired.

See also *Shot Display Preferences* and *Shortcuts Preferences*.

Setting the Primary Device for Audio Monitoring

To select the device Wirecast uses for audio monitoring, do the following:

1. In MacOS, right-click the speaker icon in the menu bar. >
2. Under Output, select the desired default audio-monitoring device.

Wirecast uses the device chosen as the device for audio-monitoring. You can select a different device through the *Audio Playback* preference.

See *Audio Playback*.

Choosing a Video Adapter

If your computer has multiple video adapters, such as NVIDIA, AMD, or Intel graphics cards, you can determine which video adapter Wirecast uses. Generally, use this option only for troubleshooting.

To select a video adapter, do the following:

1. Select *Wirecast* > *Preferences* > *Advanced*.

2. From the *Video Adapter* drop-down menu, select the video adapter desired. Choose *Select a video adapter*.
3. To close the *Preferences* dialog box, click the "x."

See *The Preferences Dialog Box*.

Disabling Sleep Mode

Wirecast does not prevent your computer from entering sleep mode. To ensure uninterrupted streaming, disable sleep mode on your computer while using Wirecast.

Assigning CPU Usage

To avoid a decrease in video quality, don't set Wirecast CPU usage above 80%. See the Telestream Website for suggested configurations.

Keeping the Wirecast Window on Top

To keep the Wirecast window active as the topmost open window on your system, select *File* > *Always On Top*.

See *Wirecast Menu*.

Selecting and Customizing Encoder Presets

To select one of the default encoder presets, or to customize encoder presets for your outputs, do the following:

1. Select *Window* > *Encoder Presets*.
2. Select an encoder preset from the *Encoder Preset* drop-down menu, and click *Close*.
3. (Optional) Alternatively, check *Video Encoding*, *Audio Encoding*, or both. Choose the video and audio settings desired. Click *Save As*, give the custom preset a name, and click *OK*.

See *The Encoder Presets Window*.

External Display Outputs

You can use either the Secondary Display Monitor output or the Multiviewer output for external output. Secondary Display lets you send a frame-accurate program feed out via the software. You can feed this into a recorder or use it as a source for another program, such as Zoom. There is 1/4-second of latency in the Secondary Display output. This latency improves A/V sync and reduces dropped frames.

The Multiviewer output, on the other hand, lets you monitor up to 17 sources or windows, including the *Preview Area*, the *Live Broadcast Area*, or any source you have in

your document. Because the Multiviewer output is meant for monitoring rather than for frame-accurate recording, Multiviewer has no intrinsic latency. Multiviewer outputs usually have less latency than Secondary Display outputs.

See *Multi-Viewer Output* and *Secondary Display Live Output*.

Adding VST Plugins to the Available Audio Plugins

To add VST plugins to the plugins available to the Wirecast audio mixer, do the following:

1. Select *Window* > *Audio Plugin Explorer*.

   See *Window Menu*.

   Wirecast opens the *Audio Plugin Explorer* dialog box, listing the Telestream plugins installed by default.
2. Click the "+" button.

   Wirecast opens a file browser.
3. Browse to a folder of VST plugins, select a VST file, and click *Open*.

   Wirecast adds the VST plugin to the list of audio plugins.

Adding a Custom LUT Filter

You can add custom LUT (Look Up Table) filters to the set provided by default. To add a custom LUT filters to Wirecast, do the following:

1. Save your LUTS filter file to this folder:

   `\<User>\Library\Preferences\Wirecast\LUTS`
2. Launch Wirecast.

   Wirecast displays the custom LUTS filter in the list of video filters in the *Video Filters* tab and in the *Source Properties* pane of the *Shot Editor*.

   See *Video Filters Tab*.

Document Creation and Input Configuration

Wirecast enables you to broadcast media created outside of Wirecast, as well as live camera and live microphone sources.

Topics

- Creating a Document 41
- Configuring the Wirecast Layout 42
- Application Shortcuts and Document Hotkeys 44
- Standard Shots 45
- Playlist Shots 50
- Replay Shots 52
- Social Media Shots 54
- Placeholder Shots 58
- PTZ Cameras and Controls 61
- Rendezvous 63
- Zoom 69
- Transitions 70
- Supported File Types 71

Before broadcasting, create a document and configure the Wirecast inputs. Add shots to the document. Add sources to the shots. The document then contains the shots and sources for a particular broadcast.

Creating a Document

You keep all the resources for a particular broadcast in a Wirecast document. You can save the audio, video, file, and controller sources, as well as the output settings, for a broadcast in a document file. Wirecast Document files have the file extension, WCST.

To create a new document, do the following:

1. Select *Wirecast* > *New*.

   Wirecast opens a new document.

2. To save the document, select *Wirecast* > *Save*.
3. Enter a file name for the document, and click *Save*.

Note: Consider establishing a file-naming method for documents. For example, you could name documents for specific broadcasts, or for specific types of broadcasts.

Adding Media to a Document

To add media to a document, do the following:

1. Select *File* > *Import Media*.
2. Browse to the media file desired, select it, and click *Open*.

   Wirecast imports the file into the document.

Configuring the Wirecast Layout

To optimize the user interface for each document, you can configure the Wirecast layout. Wirecast saves the layout settings in the document file.

See *The Default Layout*.

To configure the Wirecast layout, do the following:

1. Select *Layout*.

   See *Layout Menu*.
2. Choose a desired option from the menu.

   Wirecast configures the layout accordingly, and closes the *Layout* menu.
3. To select whether Wirecast displays the *Preview Area*, the *Live Program Area*, or both, choose the appropriate *Mode Selection* button.

   See *Layers*.

Resizing a Layer

To change the height of any layer, and the size of the shot icons on the layer, do the following:

1. Click the lower edge of the layer desired.
2. To increase the layer height, drag the lower edge downward. To increase the height, drag it upward.

   See the screenshot of the Layers window in the topic *Layers*.

The Preview Area

You can preview media files in the *Preview Area*.

See *Preview Area*.

Viewing the Preview Area

To display the *Preview Area*, select *Layout* > *Show Live and Preview*, or *Layout* > *Show Preview Only.*

See *Preview Area*.

Viewing a Shot in the Preview Area

To view a shot in the *Preview Area,* click a shot in a layer.

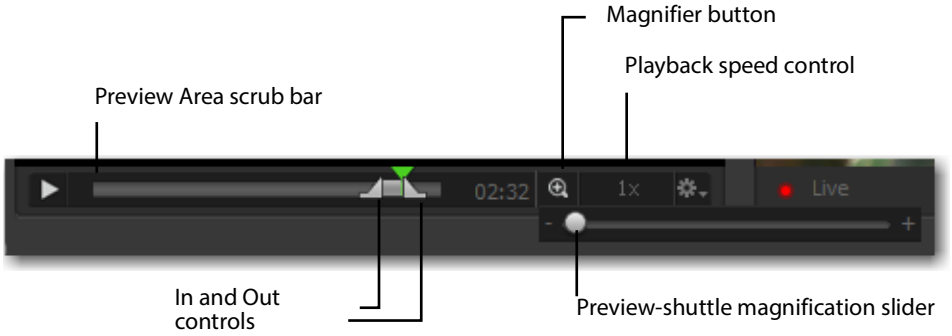
Wirecast displays the shot in the *Preview Area*.

See *The Default Layout*, *Viewing the Preview Area*, and *Preview Area*.

Magnifying the Preview Scrub-Bar Scale

To change the *Preview Area* scrub-bar scale, do the following:

1. To display the preview-shuttle magnification slider, click the magnifier (spyglass) button at the bottom of the *Preview Area*.
2. Drag the preview-shuttle magnification slider to the left to zoom out (increase) the time scale of the preview shuttle, and to the right to zoom in (decrease) the time scale of the preview shuttle.



For example, if you move the slider to the right, the In and Out controls move farther apart, increasing the magnification, so that you can more easily adjust the location of the In and Out controls. This is very helpful when you have long-duration shots. The magnification slider stops sliding when the scrub bar represents the full length of the shot.

Setting Preview Playback Speed

To set the speed of playback in the *Preview Area*, do the following:

1. Click the speed-control button (1x) at the bottom of the *Preview Area*.

   Wirecast opens the speed drop-down menu.

2. Select a speed from the drop-down menu. Your choices are 1x (normal speed), 2x (double speed), .5x (half speed), and .25x (one-fourth speed).

   Wirecast mutes the audio for any speed other than 1x.

Application Shortcuts and Document Hotkeys

You can use keyboard commands to execute most of the menu commands in Wirecast. These keyboard shortcuts are called *application shortcuts*. You can also execute many Wirecast document commands with keyboard shortcuts you create. These are called *document hotkeys*.

Note: You can view complete lists of application shortcuts and document hotkeys on the *Shortcuts* tab of the *Preferences* dialog.

Finding an Application Shortcut

You can find existing application shortcuts through the *Shortcuts* tab on the *Settings* dialog.

To find an application shortcut, do the following:

1. Select *Wirecast* > *Preferences* > *Shortcuts*.
2. Select the desired keyboard shortcut set from the *Keyboard Shortcut Set* drop-down menu.
3. Click the *Application Shortcuts* tab.
4. (Optional) To filter the shortcuts Wirecast lists, click the *All*, *Customized*, or *Conflicted* sub-tab.
5. To expand a menu item in the list, click the "+" next to the name of the menu item.
6. Do one of the following:
   - Scroll down to the desired menu item to find its assigned application shortcut.
   - Enter the name of the menu item into the *Search* field.

   Wirecast filters the list of menu items, displaying only those containing your search term.

See also *Shortcuts Preferences*.

Finding a Document Hotkey

You can find existing hotkeys for controlling documents through the *Shortcuts* tab on the *Settings* dialog.

To find a document hotkey, do the following:

1. Select *Wirecast* > *Preferences* > *Shortcuts*.
2. Select the desired keyboard shortcut set from the *Keyboard Shortcut Set* drop-down menu.
3. Click the *Document Hotkeys* tab.
4. Scroll down to the desired hotkey.

See also *Shortcuts Preferences*.

Standard Shots

You can create and edit shots for your broadcasts before you begin broadcasting.

Creating a Shot

1. To create a shot, click the "+" in any of the layers.

   See Layers in *The Default Layout*.

   Wirecast opens the *Add Shot* dialog box.
2. Select options for the shot as desired.

See *Add Shot Window*.

Creating a Shot from a Shot Template

1. To create a shot, click the "+" in any of the layers.

   See *Layers* in *The Default Layout*.

   Wirecast opens the *Add Shot* dialog box.
2. Select *Templates*.
3. Select *Shot Template*, and click the *Add* button.

   Wirecast opens the templates dialog.
4. Select the template desired, and click *Add*.

See *Add Shot Window* and *Creating a Custom Shot Template*.

Adding Media Files from a Local Drive to a Shot

1. To add media files from a local drive to a shot, click the "+" in any of the layers.

   See Layers in *The Default Layout*.

   Wirecast opens the *Add Shot* dialog box.
2. Click *Media Files*.
3. To select a media file from a local drive, double-click *Browse Disk...*. Select a file and click *Open*.
4. Click *Add*.

See *Add Shot Window*.

Adding a Network Source to a Shot

You can add network sources, such as Zoom feeds, to shots.

1. To add a network source from a local drive to a shot, click the "+" in any of the layers.

   See Layers in *The Default Layout*.

   Wirecast opens the *Add Shot* dialog box.
2. Click *Network*.
3. Select a network source from the list.
4. Click *Add*.

See *Add Shot Window*.

Adding Media Files from the Stock Media Library to a Shot

1. To add media files from the *Stock Media Library* to a shot, click the "+" in any of the layers.

   See Layers in *The Default Layout*.

   Wirecast opens the *Add Shot* dialog box.
2. Click *Media Files*.
3. Double-click *Stock Media Library*.
4. The first time you open a *Stock Media Library* file, Wirecast displays Terms and Conditions. Read the Terms and Conditions, check the *I Agree* checkbox, and click *Proceed*.

   Wirecast opens the *Stock Media Library*.

   See the screenshot of the *Stock Media Library* in *Stock Media Library*.
5. Use *Source Type* and *Left/Right* buttons to navigate to a media file, then click *Download* to include it as a shot.
6. Click *Add*.

See *Add Shot Window*.

Adding Video Sources to a Shot

1. To add media files to a shot, click the "+" in any of the layers.

   See Layers in *The Default Layout*.

   Wirecast opens the *Add Shot* dialog box.
2. Click *Video Capture*. Select video sources for the shot as desired.
3. Click *Add*.

See:

Add Shot Window

Wirecast: How to find the URI to add an IP Camera as a Web Stream source

Adding a Camera Shot

Adding an NDI™ Source to a Shot

Wirecast lists any NewTek NDI source on your local network under the *Network* option in the Add Source menu. To add an NDI source to a shot, do the following:

1. In a layer, click the "+" icon.

   Wirecast opens the *Add Shot* dialog box.
2. Select *Network*.
3. Select the NDI source from the list of sources in the right-side pane, and click *Add*.

   Wirecast creates a shot for the NDI source selected.

Note: When checked, *GPU Decoding* for incoming sources will use your GPU to process the incoming NDI source, reducing the processing demand on the CPU.

Select video source, audio source and audio output. You can also make a copy of the URL to send to guests by clicking *Copy*.

See *NDI Devices in the Shot Layer Properties Tab*.

See also How to setup a NDI Discovery Server to resolve NDI connectivity issues in Wirecast.

Adding an SRT Source to a Shot

You can use low-latency, secure SRT feeds in your Wirecast productions. Wirecast lists any SRT source on your local network under the *Network* option in the *Add Source* menu. To add an SRT source to a shot, do the following:

1. In a layer, click the "+" icon.

   Wirecast opens the *Add Shot* dialog box.
2. Select *Network*.
3. Select *SRT Stream* from the list of sources in the right-side pane, and click *Add*.

   Wirecast creates a shot for the SRT source selected, and opens the *SRT Stream Properties* tab.
4. (Optional) In the *SRT Stream Properties* tab, modify the SRT stream properties as desired. For example, you can adjust the protocol (SRT Caller or SRT Listener), add the address and pass-phrase if applicable, and enable encryption.

See *Setting Up a PTZ Camera Shot*.

Adding Audio Sources to a Shot

1. To add media files to a shot, click the "+" in any of the layers.

   See Layers in *The Default Layout*.

   Wirecast opens the *Add Shot* dialog box.
2. Click *Audio Capture*. Select audio sources for the shot as desired.
3. Click *Add*.

See *Add Shot Window* and Adding an Audio Shot.

Creating a Consolidated Shot

1. Select multiple sources in the *Shot Layers* tab of the *Shot Editor*.

   See *The Shot Editor Window*.
2. Select *Edit* > *Copy*.
3. Select *Edit* > *Paste as New Consolidated Shot* to create a new shot in the selected layer.

See *Edit Menu*.

Adding a Title to a Shot

To add a title to a shot, do the following:

1. In a layer, click the Add Shot "+" button.

   See *Layers* in *The Default Layout*.
2. Select *Overlays* > *Title*.
3. To add the title to your document, click the *Add* button.

See *Title*.

Adding a Virtual Set to a Shot

To add a virtual set to a shot, do the following:

1. In a layer, click the Add Shot  button.

   See *Layers* in *The Default Layout*.
2. Select *Templates* > *Shot Template*.
3. In the *Shot Template* dialog box, navigate to one of the built-in virtual sets, and select it.
4. Customize the set as desired.

See *Virtual Set Properties*.

Opening a Shot for Editing

To open a shot in the *Shot Editor* window, do one of the following:

- In a layer, double-click the shot desired.
- Single-click the shot to select it. Then click the double-arrow  on the left of the default layout to open the *Shot Editor* window.

See *The Default Layout* and *The Shot Editor Window*.

Adding, Deleting, or Rearranging Layers in a Shot

You can add, delete, or rearrange layers in a shot with the controls on the *Shot Layers* tab of the *Shot Editor*.

See *Shot Layers Tab*.

To add, delete, or rearrange layers in a shot, do the following:

1. In the *Shot Editor* window, select the *Shot Layers* tab.
2. Select a shot in a layer. Then select *Edit* > *Edit Shot*.
3. On the *Shot Layers* tab, edit the shot in one or more of the following ways, as desired:

- Add a layer by clicking the plus button .
- Delete a layer by selecting it and clicking the minus button .
- Reorder the layers by selecting a source and clicking the up-arrow  or down-arrow  to move it.
- To move a layer forward or back, replace a source in a layer with another source, add a layer to a shot, remove a layer from a shot, or display the original location of a media file, click the gear button .
- Toggle, on or off, the visibility of a video source by clicking the eye button .
- Toggle, on or off, the visibility of an audio source by clicking the speaker button .

See *Shot Layers Tab*.

Resizing or Rotating a Shot

To resize or rotate a shot, do the following:

1. Click a shot in a layer. Then, click the shot in the *Preview Area*.

   Wirecast places a control frame around the shot in the *Preview Area*. The control frame includes handles for resizing and rotation.

2. Click and drag any of these handles to resize or rotate your image.

See *Preview Area*.

Positioning an Image Within a Shot

You can also snap an image in the *Preview Area* to various alignments: *Snap to Center*, *Snap to Edge*, *Snap to Corner*, or *Snap to an Image*. The yellow guidelines appear when the image is ready to snap into place.

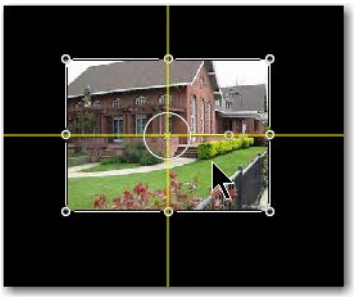
See *Preview Area*.

Moving a Shot to Another Layer

You can move a selected shot to another layer by selecting *Move to Layer* from the Edit menu, then selecting the target layer from the drop-down menu. You can also click and drag the shot icon to a different layer.

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

To temporarily disable the snap action, hold down the Command key while moving an image into place (the yellow snap lines will not appear). Additionally, after selecting an image, you can use the arrows keys to nudge it into correct placement.



Snap to Center



Snap to Corner



Snap to Edge



Snap to an Image

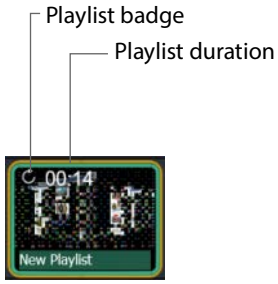
Playlist Shots

You can create and broadcast shots containing multiple preselected clips. First, create and edit the playlist shots.

Creating a Playlist Shot

To add a live source to a playlist, click the "+" in one of the layers, and select a live source from the list.

To create a new Playlist, click the "+" in one of the layers, and select *Shots*.
Select *New Playlist Shot*. Then click *Add*.
The playlist shot displays a playlist badge and the playlist duration.



Adding Clips to a Playlist Shot

To add clips to an existing playlist, do one of the following:

- Click and drag the desired clip from any layer onto the playlist shot.
- Click and drag the desired shot onto the playlist shot (you must click the bottom part of the shot icon to drag it).

Adding Clips to a Playlist from the Shots Menu

To add clips to an existing playlist shot from the *Shots* menu, do the following:

1. In a layer, double-click the desired playlist shot.
   Wirecast opens the ***Playlist*** tab.
2. Select *Shots* > *New Shot*, and select the clips desired.
   Wirecast adds the selected clips to the playlist.

Editing Playlist Shots

To edit a shot in a playlist, do one of the following:

- Double-click the shot in the playlist.
- Right-click the shot and select an item from the *Shot Menu*.
  See *The Shot Menu*.

Note: Do not delete shots from a playlist while the playlist is running.

Setting Playlist Shot Attributes

You can determine how Wirecast plays playlists. To select playlist options, do the following:

1. In the *Main Shot List* tab in the *Layers* window, select a playlist shot, and click the button for the *Source Properties* tab.

   See the *Source Properties* tab on *The Shot Editor Window*.

   Wirecast opens the *Playlist Properties* tab.
2. In the *Playlist Properties* tab, set the options for the playlist as desired.

   See *Playlist Properties Tab*.

Changing the Duration of a Playlist Shot

The *Change Shot* menu for playlist shots has a *Modify Duration* option. By default, live sources have an infinite duration (since they are not clips). For clips, you must assign a duration time.

To set or change the duration of a playlist shot, do the following:

1. Right-click the shot and select *Modify Duration* from the *Shot Menu*.
   See *The Shot Menu*.

   Wirecast displays the *Shot Duration* window.
2. Enter a new duration time value.
3. (Optional) Check *Apply to All* if you want this duration applied to all items in the playlist.
4. (Optional) Reset the duration to its original value by clicking *Reset*.
5. Click *OK* when finished.

Adding a Live Source to a Playlist Shot

To add a live source to a playlist, click the "+" in one of the layers, and select a live source from the list.

Note: Wirecast does not support nested playlists: playlists within playlists).

Replay Shots

You can create replay shots that you can broadcast at any time.

See *Configuring Replay + ISO*.

Creating a Replay Shot from a Selected Clip

To create a Replay shot, do the following:

1. Make sure you have activated Replay.

   See *Activating Replay*.

2. To play a clip, select the clip and click the *Go* button.
3. Select *Replay + ISO* > *Program Replay* > *Start*.
   Wirecast displays the Replay controls.
4. Click the *Create Replay Shot* button.

   Since the default replay duration is set at 30 seconds, Wirecast creates a Replay shot that starts 30 seconds before you clicked *Create Replay Shot*. Wirecast places the new Replay Shot in Layer 1 and displays the Replay controls next to the transition controls and *Go* button.

   See *The Default Layout*.

Creating a Replay Shot from a Layer

To create a replay shot from a layer, do the following:

1. In a layer, click the plus button . In the *Add Shot dialog box*, select *Shots* > *Replay Shot*. Click *Add*.
2. In the *Shot Layers* tab of the *Shot Editor*, add additional graphics, titles or other sources to the shot as needed.
3. Select *Replay+ISO* > *Configure*, then select *Replay Settings*. Select the Replay template from the *Replay Shot Template* drop-down menu, check *Program Replay*, and click *OK*.
4. Enable the Replay system by selecting *Replay+ ISO* > *Start All*.

   Wirecast displays the Replay controls.

5. Click the *Create/Update Replay Shot* button to create a Replay shot using the template.

   See the *Create/Update Replay Shot* button on the screenshot in *Replay Controls*.

See *Add Shot Window*, *The Shot Editor Window*, *Shot Layers Tab*, and *Replay Layer*.

Trimming a Replay Shot

To trim a Replay shot from its start, do the following:

1. Select a Replay shot in a layer.

   The Replay shot appears in the *Preview Area*.

2. Trim the shot by moving the In Point indicator and Out Point indicator to the desired start and end frames.

   See *In Point* and *Out Point* in *Media Files*.

3. Play the Replay shot to the frame you want to end the shot.
4. Click the *Create Replay Shot* button.

Your Replay Shot now contains only the content you wanted.

Looping, Holding, or Removing a Clip After Playback

You can determine what Wirecast does when it is finished playing a live clip. To set what Wirecast does when finished, do the following:

1. Select a shot in the *Shot Layers* pane.
2. Click the three-dot button to open the *Source Properties* tab.

   See the *Source Properties* tab on the screenshot of *The Shot Editor Window*.
3. Select the desired options for the clip on the *Source Properties* tab.

   See *Source Properties Tab*.

Social Media Shots

Wirecast lets you incorporate social-media feeds into your broadcasts. With the Social Comments feature, you can display, in overlays, Tweets from X (formerly Twitter), and posts from Facebook or from YouTube Live. Also, you can conduct and display Facebook polls.

Displaying Social Media Comments

The Social Comments feature lets you bring audience comments into your broadcast. You can bring in comments from X (formerly Twitter), Facebook Live (Profile, Page, Group), and YouTube Live broadcasts.

Setting up comment display is a two-step process:

1. Authenticate with the platforms from which you want to pull comments.
2. For Facebook and YouTube, begin streaming live to those platforms. This step is not necessary for X (formerly Twitter).
3. Choose a social media title where Wirecast displays the comments.

Once you start streaming, you can moderate incoming comments manually, or set them to rotate on-screen during your broadcast.

See *The Comment Moderation Window*, *Social Media Title*, and *Moderating Social Media Comments*.

Configuring X (formerly Twitter) Comments

To display posts from a X (formerly Twitter) feed in your broadcast, first configure Wirecast for X (formerly Twitter).

To configure your account with X (formerly Twitter), do the following:

1. Select *Social* > *Twitter* > *Settings*. Then click the *Authenticate* button.

   Alternatively, select *Social* > *Comments to* open the *Comment Moderation* window. Then, click the X (formerly Twitter) logo, and authorize your account on X (formerly Twitter).

2. Enter the user name and password for your X (formerly Twitter) account.

   Wirecast displays a PIN.

3. Copy the PIN and enter it into the PIN field.
4. Press *Enter* or *Authorize app*.
5. Select a feed type.

   If you select *Search*, the *Search String* field becomes active, and Wirecast displays X (formerly Twitter) feeds that contain a search string.

See *Moderating Social Media Comments* and *Moderating Facebook or YouTube Comments for a Streaming Computer or RTMP Server*.

Configuring Facebook Live or YouTube Live Comments

To display posts from a Facebook Live or YouTube Live feed in your broadcast, first configure Wirecast for Facebook Live or YouTube Live.

To configure Facebook Live or YouTube Live social comments, do one of the following:

- (Facebook only) Set your Facebook stream to *public* so that Wirecast can display Facebook comments in the *Comment Moderation* window.
- Click *Output* > *Output Settings*, and set up a streaming destination.

  See *Adding a Destination* and *The Output Settings Window*.
- Click *Social* > *Comments*, and click either the Facebook or the YouTube logo.

  Wirecast opens the *Output Settings* window, where you set up your streaming destination.

See also *Configuring Wirecast to Show Facebook User Name and Photo*, *Moderating Social Media Comments*, and *Moderating Facebook or YouTube Comments for a Streaming Computer or RTMP Server*.

Configuring Wirecast to Show Facebook User Name and Photo

By default, Wirecast displays a generic Facebook User graphic to identify the source of a Facebook Live comment. To enable Wirecast to display the actual Facebook user name and photo, ask the Facebook user to grant permission to Wirecast. Do the following:

1. Make sure Wirecast is configured to show Facebook comments.

   See *Configuring Facebook Live or YouTube Live Comments*.

2. Let your viewers know you want to include their names and photos for their comments. Request their permission to let Wirecast access their names and pictures. Tell them they may grant permission through this website:

   https://telestream.net/facebook/permission.htm

3. Tell your users that, to grant permission, they should click the button, *Let Wirecast display your Facebook Live comments*.

Choosing a Social Media Title for Displaying Comments

To choose a title for displaying social media comments, do the following:

1. Click the "+" in one of the layers to create a new shot.
2. Click *Overlays* > *Social Media Title*.

   Alternatively, from the *Comment Moderation* window, click the *Create Title Shot* button in the lower left.
3. Specify what each of the types of title displays.
4. Add your title shot to one of the layers in your document.

   See *Adding a Title to a Shot*.

Note: You can adjust the settings for each social media title in the *Title Properties* panel.

When you start your live stream, Wirecast displays comments from Facebook and YouTube in the *Comment Moderation* window.

When you authorize X (formerly Twitter), Wirecast displays Tweets or comments from X (formerly Twitter) in the *Comment Moderation* window immediately.

See *The Comment Moderation Window*.

Creating a Facebook Poll in Wirecast

You can create and display Facebook polls in your broadcast. First, configure Wirecast for Facebook.

Note: Wirecast displays Facebook polls in the Facebook user interface only when a Facebook video is playing, and is fully open.

Note: Wirecast can use only Facebook Polls created within the Wirecast application itself. You can't import Facebook polls created within the Facebook Live user interface.

To create a Facebook poll, do the following:

1. Select *Social* > *Facebook* > *Create New Poll*.

   Wirecast opens a dialog box for specifying the poll options.
2. Enter a question.
3. Select whether there are two, three, or four answers, and enter each answer. Be sure to enter an answer for every option selected.
4. Check the boxes for any of the implementation options desired.
5. Click *OK*.

   Once you've created the poll, Wirecast lists the poll in the *Social* > *Facebook* menu.

See *Facebook*.

Selecting a Facebook Poll

To select an existing Facebook poll, do the following:

1. Select *Social* > *Facebook*.
2. Select a previously-created poll from the drop-down menu.

Note: Wirecast saves Facebook polls, like Wirecast preferences, with the Wirecast application, not with a specific document.

See *Facebook*.

Editing or Deleting a Facebook Poll

To edit or delete an existing Facebook poll, do the following:

1. Select *Social* > *Facebook*.
2. Select a previously-created poll from the drop-down menu.
3. Do one of the following:

- To edit the poll, select *Edit*.
- To delete the poll, select *Delete*.

Note: Facebook does not allow you to edit a poll that is being shown, so this option is not enabled while streaming to Facebook and using a poll.

See *Facebook*.

Showing or Hiding a Poll or Results when Streaming to Facebook

The options *Show Poll*, *Show Results*, and *Hide* are available when streaming to Facebook. Once you've activated the poll, you may display a poll or its results at any time while streaming to Facebook. When you start streaming, Wirecast makes the *Show Poll* option available, but by default, it is not selected.

There is a lag of 5 to 15 seconds between selecting a poll and having it appear in your stream. When Wirecast starts displaying the poll, it adds a check mark to the *Show Poll* option, and Wirecast enables the *Show Results* and *Hide* options.

To show or hide a Facebook poll or Facebook poll results, do one of the following:

- To show a Facebook poll, select *Social* > *Facebook* > *Show Poll*.
- To show the results for the Facebook poll, select *Social* > *Facebook* > *Show Results*.

Note: Showing a Facebook poll closes the poll to further responses.

Note: Facebook does not automatically display polls. The viewer must click on the video to see or vote on a poll.

- To hide the Facebook poll and results, select *Social* > *Facebook* > *Hide*.

Note: You may hide a poll only if it's the active poll. Showing a different poll, or showing the results for a different poll, hides any other polls being shown. This allows you to show a poll, or show the results of the poll, and then hide it.

Placeholder Shots

Wirecast comes with nine default placeholders, labeled *A* through *I*. If you need more, you can create your own. All existing placeholder letters appear in the list of available placeholders. Wirecast displays the current assignment of each placeholder next to the letter.

Adding and Modifying Template Placeholders

- To generate a new placeholder, select *New Placeholder* and click *Add*.

  Wirecast displays the new placeholder shot in the shot editor, and displays its *Placeholder [#]* in the list of placeholders.

Note: Wirecast saves new placeholders in the open document. These placeholders don't appear in other documents. You can't assign media to a placeholder with *New Placeholder* > *Add*. You can add an existing placeholder, or a new placeholder, to a shot.

Assigning Media to Placeholders

To assign media to a placeholder, do one of the following:

- Select *Media* > *Assign Placeholder*. Any placeholders that have been added to shots appear in the *Assign Placeholder* drop-down menu. Clicking on one of the available placeholders opens the *Assign Placeholder* dialog box.Select the type of placeholder desired in the left pane, select a source in the right pane, and click *Assign*. When you assign a source to a placeholder, Wirecast uses that source in every shot in which that placeholder is used
- In the *Shot Layers* tab, click on the gear menu of any placeholder and select *Assign Placeholder*. Wirecast opens a drop-down menu. Select a source for the placeholder.
- Right-click on a placeholder in the *Preview Area*. Wirecast opens a similar *Assign Placeholder* drop-down menu where you can select a source to replace your placeholder.

Note: You can assign media that isn't yet used in the document to a placeholder. However, you can't assign Rendezvous guests to a placeholder until they've joined the broadcast.

Resetting Placeholders

Select *Media* > *Reset Placeholder*, then select a placeholder to remove any media assignments.

Viewing Placeholders

To view the available placeholders, do one of the following:

- In a layer, click the "+" *Add Shot* button, and select *Templates*. Wirecast displays a list of available placeholders and their assignments in the *Add Shot* dialog box.
- Select *Media* > *Assign Placeholder*. Wirecast displays a partial list of available placeholders.

Adding a Placeholder Shot

You can add a placeholder shot in the same way you add other shots. To add a placeholder shot, do the following:

1. To create a shot, click the "+" in any of the layers.

   See *Layers* in *The Default Layout*.

   Wirecast opens the *Add Shot* dialog box.
2. Select *Templates*.
3. Select a placeholder, and click the *Add* button.

   Wirecast adds the placeholder shot to the layer.

Deleting a Placeholder

To delete a placeholder from a shot, do the following:

1. In a layer, click a shot that contains a placeholder.

   Wirecast opens the shot in the *Shot Layers* tab.
2. Select the placeholder in the *Shot Layers* tab.
3. Click the delete button (-).

   When you confirm, Wirecast deletes the placeholder from the shot.

Creating a Custom Shot Template

To configure any shot with a placeholder and save it as a template shot, do the following:

1. On any shot in a layer, click the gear button . Then, select *Save Shot as a Template*.

   Wirecast displays a *Request* dialog.

2. Enter a template name and click *OK*.

   Wirecast adds the shot template to the *Custom Templates* section of the templates dialog.

Wirecast saves custom templates in Global Preferences so that you can access your custom templates across different documents.

Note: Any placeholders in your custom template revert to an unassigned placeholder, even if that placeholder was assigned to a source when you saved the custom template.

See *Creating a Shot from a Shot Template*.

Deleting a Custom Shot Template

To delete a custom template, do the following:

1. To open the *Templates* window, click the "+" in a layer.

   Wirecast opens the *Add Shot* dialog.

2. Select *Templates* > *Shot Template*.

   Wirecast opens the *Shot Template* dialog.

3. Select the custom template to delete, then click *Delete Template*.

   Wirecast deletes the template from your Global Preferences. The custom template no longer appears in the *Shot Templates* window. However, Wirecast doesn't delete shots in any documents that are based on the deleted shot template.

Add Shot Dialog

All

Displays all sources in one list.

Favorites

Displays a list of shots that have been marked as a Favorite by clicking on the star on the right side of each shot in the *Add Shot* dialog.

Media Files

Creates a Media File shot (video clip or picture). When selected, a navigation widow displays. Navigate to a media file location, select a media file, and click *Open*.

Shots

Creates a new shot. Options are *New Playlist Shot*, which creates a new Playlist shot, and *New Shots From Clipboard*, which creates a new shot from a file that has been copied to the clipboard. This is how you duplicate a shot.

Select a shot and click the *Add* button.

See *Templates*.

PTZ Cameras and Controls

You can control cameras that allow remote control of pan, tilt, and zoom (PTZ) functions. First, configure Wirecast to support your PTZ cameras.

See *Adding an SRT Source to a Shot*.

Setting Up PTZOptics Camera with a Dynamic IP Address

PTZOptics cameras ship with a Static IP address set to 192.168.100.88. To communicate with your cameras on your network, you must change this address to one in range of your network.

To set up your PTZOptics camera IP address, follow these steps:

1. To obtain a usable IP address for your camera, ensure you can access the video feed of your camera over HDMI or SDI (not IP). Since you will change the IP address, you must use HDMI or SDI to access the video feed. Connect the HDMI port of the camera to a TV, or if you are already using a capture card with, add the source to your document and queue it up in the *Preview Area*.
2. To set your Camera to DHCP (Automatic)--making it addressable by your PC--on the camera remote control, enter "# * 4" sequentially. The camera displays a message in the video feed that says "DHCP OPEN." Then the camera reboots automatically.

Note: If your camera doesn't display "DHCP OPEN" or restart automatically, contact PTZOptics for assistance, or manually assign the IP address yourself.

3. When Wirecast displays the video feed, on the remote control, enter "# * 4" (sequentially) to view the new DHCP address. The camera now requests a new IP address whenever it is plugged into a new network. This means the IP address can change, which generally isn't desirable in a live environment.

Setting Up PTZOptics Camera with a Static IP Address

If you prefer to set a static IP address for a permanent installation, follow these steps:

1. To obtain a usable IP address for your camera, ensure you can access the video feed of your camera over HDMI or SDI (not IP). Since you will change the IP address, you must use HDMI or SDI to access the video feed. Connect the HDMI port of the

camera to a TV, or if you are already using a capture card with, add the source to your document and queue it up in the *Preview Area*.

2. To set your Camera to DHCP (Automatic)--making it addressable by your PC--on the camera remote control, enter "# * 4" sequentially. The camera displays a message in the video feed that says "DHCP OPEN." Then the camera reboots automatically.
3. Open a web browser, and enter the IP address obtained in the previous steps. You can view that IP address by entering "# * 4" (sequentially) using the remote control.
4. Enter *admin* for both the username and password.
5. Select *Network* in the navigation options, located at the top-left part of the web page.
6. Find the DHCP/STATIC setting.
7. Set *IP Configuration Type* to *Fixed IP Address*.
8. When Wirecast displays the confirmation dialog window, click *Apply*, then click *OK*.
9. Recycle to power on the camera to reboot it.

Note: If you have trouble setting the IP address on your camera, contact PTZOptics for assistance.

Configuring The PTZ Controller

1. Get the IP address of your camera.

   See *Setting Up PTZOptics Camera with a Dynamic IP Address* and *Setting Up PTZOptics Camera with a Static IP Address*
2. To display the PTZ Controller panel, select *Window* > *PTZ Controller*.
3. Select the video ingestion method from the *Camera* menu. This will be an HDMI or SDI capture device, or NDI if your device supports it.
4. Enter the IP address for your camera.
5. Port and VISCA Address are set automatically to the default values for PTZOptics camera. You don't need to change these.
6. Click the *Connection* button to the far right of *Status*. Wirecast displays *connected* when a connection is made.

Setting Up a PTZ Camera Shot

To set up a Wirecast shot using a camera setup, do the following:

1. To display the PTZ Controller panel, select *Window* > *PTZ Controller*.
2. Select *D-Pad* from the Pan/Tilt menu and move the camera to a desired position. Pan the camera by clicking the left and right arrows, and tilt the camera by clicking the up and down arrows.
3. Enter a preset number (0 to 255) and click the *Save* button to save this camera position.

4. To create a camera shot, click a "+" in one of the Wirecast layers.

   Wirecast opens the *Add Shot* dialog box.

5. Select *Video Capture*, select your camera from the device pane, and click the *Add* button.

   Wirecast places your PTZ camera shot in the layer.

6. To open the *Shot Editor*, double-click your camera shot. Click the *Shot Layer Properties* tab.
7. Click the *PTZ* triangle to display the PTZ controls. Check the *Preset* check box, enter a preset number and click the *Go* arrow.

You can now move your camera by changing shots.

Opening the PTZ Controller Panel

To open the PTZ Controller panel, select *Window* > *PTZ Controller*.

See *The PTZ Controller Panel*.

Enabling Preset Recall for a PTZ Camera

Once you have configured a shot layer with a PTZ preset, sending that shot to preview recalls the preset for the camera. If multiple shots share the same video source with different PTZ presets configured, the shot which is currently live takes precedence over subsequent PTZ preset recall actions, until you drop the shot from the live feed.

To enable preset recall, do the following:

1. In the *Shot Editor*, select the *Shot Layer Properties* tab. Click the *PTZ* triangle towards the bottom of *Shot Layer Properties*.
2. Check the *Enable* box. To select a preset, enter a preset number or click the up or down arrow buttons. Click the *Go* button to cause the associated PTZ camera to go live with the recalled preset.

When you enable *Preset*, clicking *Show PTZ Controller* opens the *PTZ Controller* panel.

See *Shot Layers Properties Tab* and *The PTZ Controller Panel*.

Rendezvous

Rendezvous provides an easy way to organize a video conference with up to two guests in Wirecast *Studio*, and up to seven guests in Wirecast *Pro*. You can bring in live video feeds from a computer or smart device running a supported web browser, or from iOS devices running the Wirecast Go app.

Creating a Rendezvous Session

To create a Rendezvous session, do the following:

1. To open the *Create Rendezvous Session* dialog, do one of the following:
   - In a layer, click the Add Shot (+) icon. When Wirecast opens the *Add Shot* dialogue, select *Network* > *Create Rendezvous Session*.
   - Select *Window* > *Rendezvous Dashboard*. Click the *Start Session* button.

   Wirecast opens the *Create Rendezvous Session* dialogue.
2. In the *Create Rendezvous Session* window, optionally select *Enable chat for session*, *Share chat history*, or both. Then click *Create Session*.

   The *Enable chat for session* option enables a chat dialog between you and your guests.

   If you select *Share chat history with new session guests*, guests that arrive at any time in the session see the full chat history. If you don't select this option, new guests see only chat messages that occur after they've joined the session.

   See *Rendezvous Chat Features*.
3. In the *Created Session* window click the *Click to Copy* button to copy the Rendezvous URL to the clipboard. Send this URL to the guests that you want to invite to the broadcast.
4. When finished, click *OK*.

   Wirecast opens the *Rendezvous Dashboard*. If you enabled Rendezvous Chat, Wirecast displays the *Rendezvous Dashboard* with the Rendezvous Chat panel on the right. You can open and close the Rendezvous Chat panel by clicking on the ">>" button to the left of the Rendezvous Chat panel.

   See *The Rendezvous Dashboard*.

Note: You can also show the live output in the Rendezvous display (instead of your local camera). To do this, click the camera button and select *Live Output from [document title]*. You can add live output audio by clicking the mic button.

Note: From the *Rendezvous Dashboard* you can mute audio or hide the camera of your local sources, or the sources of those who have joined. To do this, click the camera or mic button of the source to mute. You can disconnect at any time by clicking the *Disconnect* button.

See also Rendezvous Essentials.

Starting a Rendezvous Session

To start a new session, do the following:

1. Click *Window* > *Rendezvous Dashboard* > *Start Session*.

   See *The Rendezvous Dashboard*.
2. Copy and email the session URL to all potential guests.

Joining a Rendezvous Session as a Guest

To join a Rendezvous session on a remote computer or smart device, do the following:

1. To initiate a connection with Wirecast, paste the URL you received in the Rendezvous invitation email into a browser. Press *Enter*.

   The browser opens a Rendezvous guest window.

   See *The Rendezvous Guest Window*.

Note: The only browsers supported by Wirecast for joining a Rendezvous session are Chrome, Safari, and Firefox.

2. (Optional) To open live chat, click the live chat button.
3. (Optional) Turn off the camera by clicking the camera button.
4. (Optional) Mute the mic by clicking the microphone button.
5. (Optional) To share a screen, click the share screen button.

   If you select *Share Screen*, Wirecast opens the *Choose what to share* dialog.

   Select the screen you want to share and click *Share*.
6. In the *Rendezvous* window, click the settings button.

   Wirecast opens the Microphone-Camera-Options dialog.
7. In the Camera-Microphone-Options dialog, select a microphone, camera, and options.
8. Enter an identification in the *Your name* field and click *Join*.

Note: Wirecast *Go*, running on iOS devices, can join a Rendezvous session by opening the URL. Android devices can join a session by opening a Session URL (sent to them) in the Chrome browser.

The *Rendezvous* window displays a *Waiting to join* message until the Wirecast host has added you as a guest.

Improving Rendezvous Audio with Music Mode

Only Rendezvous guests can turn on *Music Mode*. This greatly improves the audio quality for musical instruments played over Rendezvous.

Rendezvous guests can turn on *Music Mode* in the Rendezvous web app. This does the following:

- Changes the audio channel from the default monaural to stereo
- Increases the audio bit-rate from the default 32kbps to 256kbps, 128kbps for each stereo track

Note: Wirecast Music Mode improves audio quality only for Rendezvous guests sending audio to Wirecast. To conserve bandwidth, Wirecast doesn't send the higher quality audio to other guests in a session.

- Disables audio processing (echo cancellation and noise reduction)

Note: Disabling audio processing for speech through normal microphones can result in poor quality audio. Disable audio processing only for music.

Opening the Advanced Rendezvous Audio Mixer

To open the *Advanced Rendezvous Audio Mixer*, do the following:

1. Select *Window* > *Rendezvous Audio Mixer*.

   Wirecast opens the *Advanced Rendezvous Audio Mixer*.

   See *Rendezvous Audio Mixer*.

Adding a Guest to Rendezvous Dashboard

When a guest is waiting to join the Rendezvous session, Wirecast displays a guest icon in both the Wirecast default layout and in the Rendezvous Dashboard. To add a guest to a Rendezvous session, do the following:

1. In the Rendezvous Dashboard, click the guest icon and select a guest to add to the session.

   See *The Rendezvous Dashboard*.

Adding a Guest to Wirecast Main or Shot Layer

1. In a layer, click the Add Shot (+) icon.
2. In the *Add Shot* dialog, select *Network*.
3. Under *Rendezvous Session*, select the name of the guest to add.

   Wirecast displays your new Rendezvous shot on the shot layer from which it was selected.
4. Select the shot to display it in the *Preview Area* where you can place it and size it as needed.

Rendezvous Chat Features

There are times in a live interview when you need to communicate privately with your guests. That is the purpose of the Rendezvous Chat feature in Wirecast.

Wirecast displays a panel on the right side of the *Rendezvous Dashboard* that, when clicked, slides out to reveal the *Rendezvous Live Chat* panel.

You receive a notification when a guest types a message, even if you have the *Live Chat* panel closed or if the *Rendezvous Dashboard* is not in focus.

Host and guests can type into the message window to communicate. Wirecast doesn't display this chat panel on the live broadcast, so you can type private messages.

Guests' names appear above messages they send. If you have several guests, each has a chat bubble window with a unique color, for easy identification.

As the host, you can select *Clear Chat* at the top right corner of your *Live Chat* panel. This clears all the messages from the *Live Chat* panels of you and the guests.

Guests connecting through a browser see the *Live Chat* panel. They can close their *Live Chat* panels by clicking on the X in the top of the panel.

If a message arrives for guests with the *Live Chat* panel closed, Rendezvous displays a green dot on the chat icon. Guests click this to open the chat panel.

If guests disconnect and reconnect to the same session, they still see the chat history, if chat history is enabled.

As host, disconnecting your session forces guests to disconnect, and deletes the chat history.

See *Creating a Rendezvous Session* and Wirecast: Rendezvous Chat Guide.

Reconnecting to a Rendezvous Session

To reconnect to the previous session, in the *Rendezvous Dashboard*, click *Reconnect to previous session*.

Wirecast restores all settings from the previous session, so long as the remote browsers are still open. If a guest has closed a remote browser, the guest can reconnect using the URL for the previous session.

Sharing Screen, Camera, or Both as Rendezvous Guest

Rendezvous guests can share their screens and cameras during a broadcast.

Note: You, as guest, might need to enable security or privacy permissions in your browser to allow screen sharing.

Note: Only one person can share screen and camera at any one time. However, multiple people at the same time can share screens with their cameras disabled.

To share your desktop, camera, or both as a Rendezvous guest, do the following:

1. Select *Window* > *Rendezvous Dashboard*.

   Wirecast opens the *Rendezvous Dashboard* with a *Share Screen* button in the top-right corner. The camera-share and screen-share buttons indicate whether camera- or screen-sharing are active.

   See *The Rendezvous Dashboard*.

2. Click the *Share Screen* button.

   Wirecast opens a drop-down menu.

3. Select one of the following options, as desired:

   – *Share screen & camera*

     If no-one else is sharing screen and camera, Wirecast asks which screen or window to share. Choose one.

     If you, as guest, choose *Share screen & camera*, Wirecast displays only the *Share Screen* button for the Wirecast host.

     When you, as guest, select *Share screen & camera*, the host sees two separate feeds in the *Rendezvous Dashboard*: one for the camera and one for the shared screen. The Wirecast host then can add one or both of these feeds, as separate shots, into the broadcast. Alternatively, the host can display the guest camera and the guest screen picture-in-picture.

   – *Share screen (disable camera)*

   When you, as guest, select *Share screen (disable camera)*, the Wirecast host sees your shared guest screen.

Note: If a second guest selects *Share screen & camera* while a guest already is sharing both, Wirecast notifies the second guest that only one guest can share both screen and camera at a time. Wirecast offers the second guest the *Share screen (disable camera)* option.

---

4. (Optional) To stop sharing, you, as guest, can either click the *Share Screen* button at the top of the *Rendezvous Dashboard*, or click the *Stop Sharing* button displayed as a notification at the bottom of the screen.

Ending a Rendezvous Session

To close your session, in the *Rendezvous Dashboard*, click *Stop Session*.

When you disconnect from a Rendezvous session, Wirecast removes your camera from the guests' browsers, and removes the guests' cameras from your local session window.

Zoom

You can use Zoom feeds in your Wirecast productions.

Joining a Zoom Session

To join a Zoom session, do the following:

1. Click *Zoom* > *Join Zoom Meeting*.

   Wirecast opens the *Join Zoom Meeting* dialog.

2. Do one of the following:

- Click *Login*.

  Wirecast opens your default browser to the Zoom Meeting sign-in page.

  a. Sign in to your Zoom account via the Zoom Meeting sign-in page.

  Wirecast closes the *Authentication initiated with Zoom Meeting* dialog.

- Select *Invite Link*, enter the URL into the *Link* field, click *Join*, and enter the Zoom user and password information.
- Select *Meeting Info*, enter the Meeting ID and Passcode, click *Join*, and enter the Zoom user and password information.

  See *Zoom*.

Adding a Zoom Shot

To add a Zoom shot, do the following:

1. Join a Zoom session.

   See *Joining a Zoom Session*.

2. Add a Zoom shot from the Network sources listed in the *Add Shot* dialog.

   See *Adding a Network Source to a Shot*.

3. Ask the host of the Zoom meeting to allow Wirecast to record the Zoom meeting.
4. Click *Zoom* > *Join Zoom Meeting*.

   Wirecast opens the *Join Zoom Meeting*. dialog.

5. Do one of the following:
   - Click *Login*.
   - Select *Invite Link*, and enter the URL into the Link field
   - Select *Meeting Info* and enter the Meeting ID and Passcode.
6. Click *Join*.
7. Enter the Zoom user and password information.
8. (Optional) If you want to display the Zoom feed at a higher resolution than usual, select *HD* under *Camera* in *Video* settings.
9. In a layer, select a Zoom shot.

10. Select the *Source Properties* tab.

    Wirecast displays properties for the Zoom shot.

11. (Optional) Select the desired resolution from the *Preferred Resolution* drop-down menu.

Transitions

There are three transition buttons: the *Transition* button, the *Transition Controls* button, and the *Go* button. You can configure the *Transition* button and the *Transition Controls* button.

See *Transition Buttons*.

Setting Transition Speed

To set the transition speed, select *Switch* > *Transition Speed*. Choose one of the five settings: *Slowest*, *Slow*, *Normal*, *Faster*, and *Fastest*.

Specifying the Transitions for the Transition Buttons

To assign a type of transition to a transition button, do the following:

1. Click the down-arrow on the right side of the transition button.
2. From the drop-down menu, select a new transition to assign to that button.

See *Final Mix Audio Panel*, and *Selecting and Customizing Encoder Presets*.

Importing Stinger Transitions

Stinger transitions are custom transitions that employ alpha-channel transparent backgrounds. These transitions typically are created using applications such as Adobe After Effects, Apple Motion or Telestream ScreenFlow.

To import a stinger transition, do the following:

1. Select *Switch* > *Manage Stinger Transitions*.

   Wirecast displays the *Stinger Transition Manager*.

2. To import a transition file, click the plus button , navigate to the desired stinger transition file, and select it.

   Wirecast imports the stinger transition file, and adds it to the list of transitions available through the *Transition Control* button.

Note: Stinger transitions are stored in Wirecast preferences with the paths to media files. This allows the you to re-use stinger transitions in other Wirecast documents. When Wirecast can't find a media file associated with a stinger transition, Wirecast

removes the transition from the transition list. Also, Wirecast highlights the file name in red in the *Stinger Transition Manager.*

See *The Default Layout* and *Manage Stinger Transitions*.

Executing a Stinger Transition

To execute a stinger transition, do the following:

1. To execute a stinger transition, click and drag the *Transition Control* button to open the drop-down menu.
2. Select the stinger transition.
3. To set the location where the shot will change from A to B, slide the scrubber to a location in the transition, then click the *A/B* button.
4. Click the *Go* button to execute the stinger transition.

See *The Default Layout*, *Importing Stinger Transitions*, and *Manage Stinger Transitions*.

Deleting Stinger Transitions

To delete a stinger transition, do the following:

1. Select *Switch* > *Manage Stinger Transitions*.

   Wirecast displays the *Stinger Transition Manager*.
2. To delete a transition, select it and click the minus (-) button.
3. Click *Close* to exit the *Stinger Transition Manager*.

See *Manage Stinger Transitions*.

Supported File Types

Still-Image Types and Opacity

Wirecast supports a wide variety of still images types, for example TIFF, GIF, JPEG, and PNG. Some of these formats offer control of opacity, or transparency, by way of an alpha channel. Wirecast works seamlessly with these formats. TIFF, GIF, JPEG, and PNG are the preferred formats for graphics which have transparency.

GIF and Transparency

GIF files offer transparency but not a true alpha channel. You can define part of a GIF image as completely transparent, but not partially transparent. Some GIF images use transparency for much of the image. However, you can't use transparency near the edges of the visible data in a GIF file. A GIF file that was created on a white background with transparency at the edges might show the white background at the edges in place of the transparency.

Tip: Avoid using GIFs with areas of transparency. When possible, use the image, without transparency, from which the GIF was generated. To add transparency to the image, save it in TIFF, GIF, JPEG, or PNG format; then define the transparency settings of the alpha channel.

Supported Codecs

Wirecast supports media on a variety of platforms such as AVFoundation, a variety of file types such as MOV and AVI, and a variety of codecs such as AVC or H.264. Shown below is a list of file types and codecs that Wirecast supports.

Video Codec	**MOV (M4V)**	**MP3**	**MPEG-4 ISO (MP4)**	**WAV**	**AIFF (AIFF, AIF)**	**ASF (WMV)**	**WEBM**
AVC	YES	NO	YES	NO	NO	NO	
H264	YES	NO	YES	NO	NO	NO	
DVC25	YES	NO	NO	NO	NO	NO	NO
DVCPRO50	YES	NO	NO	NO	NO	NO	NO
DVCPRO100	YES	NO	NO	NO	NO	NO	NO
MJPEG	YES	NO	NO	NO	NO	NO	NO
ProRes	YES (mac only)	NO	NO	NO	NO	NO	NO
QuickTime Animation	YES	NO	NO	NO	NO	NO	NO
VP8	NO	NO	NO	NO	NO	NO	YES
VP9	NO	NO	NO	NO	NO	NO	YES
Windows Media Video	NO	NO	NO	NO	NO	YES (windows)	NO
Audio Codec							
AAC	YES	NO	YES	NO	NO	NO	NO
MP3	YES	YES	NO	NO	NO	NO	NO
Opus	NO	NO	NO	NO	NO	NO	YES
PCM	YES	NO	NO	YES	YES	NO	NO
Vorbis	NO	NO	NO	NO	NO	NO	YES
Windows Media Audio	NO	NO	NO	NO	NO	YES (windows)	NO

Remapping Media Locations

Wirecast stores paths to your media in the Wirecast document. If you move the media files for a document, use *Asset Manager* to update the document paths to the new media locations.

Tip: Keep the document WCST file in the same folder where you keep media files for the document. When you need to move the files to a new location, move this whole folder. When you open the document in the new location, Wirecast finds the associated media automatically.

To update paths to media locations, do the following:

1. Select *Media* > *Show Asset Manager*.
2. Select the path to a media file you want to change.
3. (Optional) Some media sources, such as cameras, enable you to set the aspect ratio by displaying a *Device Aspect Ratio* menu. You can select an aspect ratio from this menu.
4. Select the desired media file from the *Assign To m*enu; or click *Browse*, locate the desired media file, and then select the desired media file.

Note: When *Remote Desktop Presenter* (RDP) is selected as the media file, you can enter the IP address for the RDP. This enables you to build a Wirecast presentation with place-holders. You can reconfigure the placeholders later for a new source Remote Desktop Presenter.

5. Click *Apply* to save the new path to the media file, then close the *Asset Manager*.

Note: You can select a path from the list and click *Delete* to remove it. Also, you can click *Delete All* to clear the list.

Output Configuration

Before broadcasting with Wirecast, configure the output settings.

Topics

- Destinations 75
- Encoder Presets 88
- Mapping Audio Tracks to Output Audio Channels 93
- Mapping Audio Mixes to Playback Devices 93
- Streaming 94
- Configuring Replay + ISO 97
- Recording To Disk 102

Wirecast enables you to specify many output settings for your presentation. You can configure Wirecast to broadcast multiple data rates simultaneously, broadcast with different encoders at the same time, or use Windows Media Encoder to record your broadcast to disk.

Destinations

To broadcast with Wirecast, you must define at least one destination. A destination can be a broadcast server, content distribution network, or local disk recording.

See *The Output Settings Window*.

processing See *The Output Settings Window*.

Creating an SDP File for Your Viewers

To view your screencasts, your viewers might need an SDP file from you. The SDP file contains multicast or unicast addresses, encoding format, and other important information.

You must create and distribute an SDP file when you change multicast or unicast *Destination* settings, including the encoder preset. To create and distribute an SDP file, do the following:

1. Select *Output* > *Output Settings*.

   Wirecast opens the *Output Settings* dialog.

2. In the *Output Settings* dialog, click the down-arrow to the right of the *Destination* field..

   Wirecast opens a drop-down menu of possible destinations.

3. Select a destination.

   Wirecast displays the presets for the destination you selected. Each output setting has an unique set of controls and a way to authenticate your connection.

4. (Optional) To view more destinations in the *Destination* drop-down menu, click *More* in the *Select an Output Destination* dialog. Check the box for each destination you want to include in the destination menu list. Uncheck the box for any destination you want removed from the list of destinations for the broadcast.

5. In the *Output Settings* dialog, click the gear button  to the right of the *Destination* field.

   Wirecast opens a drop-down menu of possible actions for the destination selected.

6. Select *Save SDP File*.

   Wirecast opens the *Save File* dialog.

7. Navigate to the desired location, and click *Save*.

8. Send the SDP file to viewers, and inform them they must save the SDP file on the computers they use to receive your broadcast.

See *The Output Settings Window*.

Selecting a Destination

To select a destination for a broadcast, do the following:

1. Select *Output* > *Output Settings*.

   Wirecast opens the *Output Settings* dialog.

2. In the *Select an Output Destination* dialog, open the drop-down menu.

   Wirecast opens a drop-down menu of possible destinations.

3. Select a destination.

Note: For a multistream output, select *Wirecast Multistream*.

   Wirecast displays the presets for the destination you selected. Each output setting has an unique set of controls and a way to authenticate your connection.

4. (Optional) To view more destinations in the *Destination* drop-down menu, click *More* in the *Select an Output Destination* dialog. Check the box for each destination you want to include in the destination menu list. Uncheck the box for any destination you want removed from the list of destinations for the broadcast.

5. In the *Output Settings* dialog, click the gear button .

   Wirecast opens a drop-down menu of possible actions for the destination selected.

6. , Select the option desired.

7. Enter values into the required fields.
8. Click *OK*.

See *The Output Settings Window*.

Adding a Destination

To add a destination for a broadcast, do the following:

1. Select *Output* > *Output Settings*.

   Wirecast opens the *Output Settings* dialog.
2. In the left-side pane, click *Add*.

   Wirecast displays the *Select an Output Destination* dialog.
3. Choose a destination from the *Destination* drop-down menu.
4. (Optional) To view more destinations in the *Destination* drop-down menu, click *More* in the *Select an Output Destination* dialog. Check the box for each destination you want to include in the destination menu list.
5. Click *OK*.

Note: You can add as many destinations as you need, but keep in mind that each additional destination requires additional system resources.

See *The Output Settings Window*.

Removing a Destination

To remove a destination from a broadcast, do the following:

1. Select *Output* > *Output Settings*. Select a destination from the *Destination* drop-down menu, and click *OK*.

   Wirecast displays the *Output Settings* dialog with presets for the destination you selected.
2. In the left-side pane, select the destination you want to remove.
3. Click *Remove*.
4. Click *OK*.

See *The Output Settings Window*.

Creating a Multistream Output

To stream from Wirecast to multiple destinations with the *Wirecast Multistream* Destination setting, do the following:

1. Create an *Output Setting* with *Wirecast Multistream* selected as the *Name* of the output.

   See *Selecting a Destination*.

2. Before clicking *OK*, in the left pane of the *Output Settings* dialog, click *Add*.

   Wirecast opens the Select an Output Destination dialog.
3. Select a destination from the drop-down menu, and click *OK*.
4. Enter a name for the output into the *Name* field.
5. Click *OK*.
6. To start streaming, click the *Output Settings* button.

   See *Output Settings Button*.

   Wirecast streams the program to the Wirecast Multistream server, and from there to the destination you selected.

> Modifying RTMP Server Destination Settings

Wirecast can stream to an RTMP/H.264-compatible streaming server such as RTMP Server Media Server or Wowza Media Server.

To configure RTMP Server Streaming, follow these steps:

1. Select *Destination* > *RTMP Server*.
2. Select an encoder.
3. Enter the Address to the RTMP server. The default RTMP port is 1935, but you may need to configure your firewall to allow connections on this port.
4. Wirecast can import a RTMP Server Encoder configuration file (XML file). Click *Open FMLE XML File*, and navigate to the configuration file and select either version 2.5 or version 3.0.

   Wirecast reads the Address and Stream information from that file. Many online streaming services offer FMLE configuration files which Wirecast can use.

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

5. Click *OK* to save your settings.

Modifying SRT (Secure Reliable Transport) Destination Settings

Wirecast can stream to SRT (Secure Reliable Transport), an open-source video transport protocol that enables the delivery of high-quality and secure, low-latency video across the public Internet. SRT Supports x264 and Apple H.264 encoding methods.

To configure SRT Streaming, follow these steps:

1. Select *Destination* > *SRT:Secure Reliable Transport*.
2. Select an encoder.
3. Enter the *Address*, *Port*, *Passphrase*, and *Stream ID* to the SRT.

4. Click *OK* to save your settings.

See *The Output Settings Window*.

Modifying CDN Partners Destination Settings

Listed below are the Content Distribution Network (CDN) partner destinations available in Wirecast. Most destinations share a common user interface and require only a user name and password. To configure these, see *Configuring Most Common CDN Configurations*.

To configure destinations that do not conform to this paradigm, or that require additional parameters, see the *Modifying* topic for the specific destination.

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

Configuring Most Common CDN Configurations

To stream to one of these CDN partners, do the following:

1. Select *Output* > *Output Settings*.

   Wirecast opens the Output Settings dialog box.
2. Select a CDN partner from the *Destination* drop-down menu.
3. (Optional) You can click the *Map* button to open the *Multi-Track Input Mapper*. Check the box for each Channel input desired.
4. Enter your username or email.
5. Click *Authenticate* to enter your password and generate the RTMP URL. You need to do this only once. Wirecast stores the channel information for future streams. The default RTMP port is 1935. You might need to configure your firewall to enable connections on this port.

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

---

6. Select your channel.
7. (Optional) Refresh the connection by clicking *Refresh*.
8. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

---

9. Click *OK* when finished.

Modifying Azure Media Services and Sermon.net Destination Settings

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

1. (Optional) Enter a name for your destination.
2. Select a CDN partner from the *Destination* menu.
3. Select an encoder.
4. (Optional) Click the *Map* button to open the *Multi-Track Input Mapper*. For each channel, check the box for one or more inputs.
5. Enter the domain name or IP address. Get this address from the CDN partner.
6. Enter the stream name of your broadcast. Get the stream name from the CDN partner.

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

7. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

8. Click *OK* when finished.

Modifying Brightcove and Limelight Destination Settings

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

1. (Optional) Enter a name for your destination.
2. Select a CDN partner from the *Destination* menu.
3. Select an encoder.
4. (Optional) You can click the *Map* button to open the *Multi-Track Input Mapper*. For each channel, check the box for one or more inputs.
5. Enter the domain name or IP address. Get this address from the CDN partner.
6. Enter the stream name of your broadcast. Get the stream name from the CDN partner.
7. Click *Set Credentials* to enter your Username and Password.

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

8. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

9. Click *OK* when finished.

Modifying Akamai Destination Settings

To stream to Akamai, follow these steps:

1. (Optional) Enter a name for your destination.
2. Select *Akamai* from the *Destination* menu.
3. Select an encoder.
4. (Optional) Click the *Map* button to open the *Multi-Track Input Mapper*. Check the box for each channel input desired.
5. Enter your Akamai Stream ID and Event Name.
6. Enter your Akamai Angle and Video Rate.
7. Enter your user name and click *Authenticate* to enter your log in information.

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

8. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

9. Click *OK*.

Modifying LinkedIn Live Destination Settings

To stream to LinkedIn Live, follow these steps:

1. Enter a name for your destination.
2. Select *LinkedIn Live* from the *Destination* drop-down menu.
3. Select an encoder from the *Encoding* drop-down menu.
4. (Optional) Click the *Map* button to open the *Multi-Track Input Mapper*. Check the box for each of the channel inputs desired.

5. Select *On Behalf of Organization* or *Member* and click *Login*.
6. When Wirecast displays the login window, enter email, phone, and password information.
7. Click *Sign In*.

Note: If you do not have a username and password, you can sign up with LinkedIn Live by clicking *Join Now*.

8. Select an Organization.
9. Select an Ingest Region.
10. Enter your Post information.
11. To create an event, check *Event,* enter a URL, and click *Verify URL*.

    Skip to the next step to create a targeted audience.
12. To create a targeted audience, check *Audience Targeting* and Click *Setup*.

    Skip ahead to the next step if you created an event.
13. When Wirecast displays the *Setup* window, select multiple regions.
14. Select *Languages* and click *OK*.

Note: Your target audience must include at least 300 members.

15. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

16. Click *OK*.

Modifying LiveArena Destination Settings

To stream to LiveArena, follow these steps:

1. (Optional) Enter a name for your destination.
2. Select *LiveArena* from the *Destination* menu.
3. Select an encoder.
4. (Optional) You can click the *Map* button to open the *Multi-Track Input Mapper*. Check the box for each channel input desired.
5. Enter your LiveArena Account ID, User Name, and Password.
6. Click *Apply*.

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

7. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

8. Click *OK*.

Modifying X (Twitter) Broadcast Destination Settings

To stream to X (Twitter) follow these steps:

1. (Optional) Enter a name for your destination.
2. Select *Twitter* from the *Destination* menu.
3. (Optional) Click the *Map* button to open the *Multi-Track Input Mapper*. Check the box for one or more channel inputs desired.
4. Click *Plus (+)* to enter your username and password.
5. Copy the Authorization Code and click on the URL below it.
6. When Wirecast displays the *Authorization Code* window, paste in the code and click *Authorize*.

Note: If Wirecast does not display the *Authorization Code* window, or if Wirecast displays an error window, clear your browser history or try using a different browser. Then, sign in again.

7. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the length of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

8. Click *OK*.

See also Wirecast: Streaming to Twitter using RTMP Output Destination.

Modifying Twitch Destination Settings

To stream to Twitch, follow these steps:

1. (Optional) Enter a name for your destination.
2. Select *Twitch* from the *Destination* menu.
3. Select an encoder.
4. (Optional) You can click the *Map* button to open the *Multi-Track Input Mapper*. Check the box for each channel input desired.
5. Enter your Twitch username.
6. Click *Authenticate* to open the Twitch Log In window.

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

7. When Wirecast displays the Twitch Login window, enter your username and password, and click *Log In*.
8. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.
9. Click *OK* when finished.

Modifying Vimeo Destination Settings

To stream to Vimeo, follow these steps:

1. (Optional) Enter a name for your destination.
2. Select *Vimeo* from the *Destination* menu.
3. Select an encoder.
4. (Optional) Click the *Map* button to open the *Multi-Track Input Mapper*. Click the box for each channel input desired.
5. Click *Authenticate* to enter your username and password.

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

6. When Wirecast displays the *Authorization* window, click *Allow*.
7. Click the plus (+) button to add a new event.
8. Enter your email and password, then press *Enter*.
9. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.
10. Click *OK* when finished.

Modifying Wowza Streaming Engine Destination Settings

To stream to Wowza Streaming Engine, follow these steps:

1. (Optional) Enter a name for your destination.
2. Select *Wowza* from the *Destination* menu.
3. Select an encoder.
4. (Optional) Click the *Map* button to open the *Multi-Track Input Mapper*. Check the box for each channel input desired.
5. Enter the domain name or IP address. Get the domain name or IP address from the CDN partner.
6. Enter the stream name of your broadcast. Get the stream name from the CDN partner.
7. Click *Import Wowza Config* to import a Wowza configuration to use.
8. Select *User Agent*. Default is Wirecast/FM1.0.
9. Click *Set Credentials* to enter your Username and Password.

Note: If you do not have a stream name and password, you can sign up Wowza.

---

10. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

---

11. Click *OK* when finished.

Modifying Zixi Destination Settings

To stream to Zixi, follow these steps:

1. Download and install Zixi Feeder.
   For instructions on downloading and installing Zixi Feeder, see Zixi Documentation Center.
2. (Optional) Enter a name for your destination.
3. Select *Zixi* from the *Destination* menu.
4. Select an encoder.
5. (Optional) You can click the *Map* button to open the *Multi-Track Input Mapper*. Check the box for each channel input desired.
6. Enter Zixi connection information.
7. Enter your Zixi channel name and password.

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

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

9. (Optional) Enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the broadcast. You can set the delay from 0 to 999 seconds. However, greater delays require greater memory use. Wirecast displays the amount of memory used when you enter the amount of delay.

Note: We recommend keeping stream delay as low as possible, ideally less than 30 seconds.

10. Click *OK*.

See also Setting up a Zixi Output Destination in Wirecast.

Modifying Facebook Live Destination Settings

To stream to Facebook, follow these steps:

1. (Optional) Enter a name for your destination.
2. Select *Facebook Live* from the *Destination* menu.

   See *Facebook Live Destination Settings*.
3. Select an encoder from the *Encoding* menu.
4. Choose the audio track to be used by selecting it from the *Audio Track Selection* menu.
5. (Optional) Map the audio tracks to the desired output audio channels.

   See *Mapping Audio Tracks to Output Audio Channels*.

Note: If you change the encoding settings while streaming to Facebook, an error will occur. The encoder settings are set by Facebook.

6. (Optional) Facebook Live tags make videos easier to find on Facebook. To add Facebook Live tags to the output video, enter tags into this field. As you type, Wirecast searches the list of authorized Facebook tags and displays tags matching your query. Select desired Facebook authorized tags from the search results.
7. To log into Facebook, do one of the following:
   - To log into Facebook with a user account, click *Authenticate* and log into Facebook. If you already are logged into Facebook, you can click the *Change* button to log into a different Facebook account.

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

- To log into Facebook with a one-time stream key instead of a user account, click *Pair Device*. Wirecast opens a dialog. Follow the instructions given in the dialog.

8. Select *Go Live Now* or *Schedule for Later* from the *Post To* menu.
9. If you selected *Schedule for Later,* select also a start date and a time.
10. Select *Pages, Profile, or Groups* from the *Post To destination* menu. Click *Refresh* to refresh the page list. If planning to use co-branded content, check the *Show verified pages only* checkbox to filter out all non-verified pages. Enter a Title and a Description. Click *Create* to refresh after changing any settings.
11. If you selected *Go Live Now,* select also *Pages*, *Profile*, or *Groups* and enter a Title and Description (as described above). Optionally, click *Advanced Options*.

    If you select *Pages*, you can also select *Crosspost*, if desired.
12. If you chose to post to a *Profile*, select also a level of Privacy: *Public*, *Friends*, or *Only Me*.
13. Click *Create* to start an event on Facebook. You can, optionally, optimize your connection by clicking *Optimize Connection*. When you do, a progress bar is displayed while optimization is performed. Click *Cancel Speed Test* at any time to cancel your optimization request.
14. Click *OK* when finished.

Modifying Microsoft Stream Destination Settings

In order to broadcast using Microsoft Stream, first configure streaming with Office 365. For a detailed procedure on how to do this see: Publish to Microsoft Stream

1. When Wirecast displays the *Output Settings* window, select *Microsoft Stream* as your Destination, and click *OK*.
2. When Wirecast displays the *Output* window, select an *Encoder* and *Audio Track* for the stream. Paste in the address copied from Office 365 where streaming was initiated.
3. (Optional) Enter a Stream Delay if needed. Click *Ok* when finished.
4. (Optional) Click the *Map* button to open the *Muti-Track Input Mapper*. Check the box for each channel input desired.

Click *OK* when finished.

Modifying YouTube Destination Settings

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

To stream to YouTube, follow these steps:

1. Log into your YouTube account using your browser.
2. (Optional) Enter a name for your destination.
3. Select *YouTube* from the *Destination* menu.
4. Select an encoder.
5. (Optional) You can click the *Map* button to open the *Multi-Track Input Mapper*. For each channel, check the box for one or more inputs.
6. Check *Use Backup Server* if you get an error when authenticating, or the application tries to connect and then crashes.

Note: At times the primary streaming servers at YouTube go down for maintenance or other reasons. When Wirecast users attempt to connect to these servers, especially when using YouTube's *Stream Now* feature, they are unable to connect.

7. Click the plus (+) button to add a new event.

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

8. Enter all of your event information and click *Save*.

Note: Click the *Details* button to get more information from Google.

9. Click *Authenticate*, enter your login information, and wait for your event to appear in the Event menu box. Click the minus icon (-) to remove a selected event. Optionally, enter a Stream Delay value. This provides a time buffer between your live stream from Wirecast and the actual broadcast itself. You can set the delay from 0 to 999 seconds. Click *OK* when finished.

Note: If you are not already signed in, Wirecast launches a window enabling you to sign into your YouTube account. Enter your account information and click *Sign In*.

See also Wirecast: Output Destination - Youtube (RTMP).

Encoder Presets

Without compression, the bandwidth of audio-video data can be too large to successfully broadcast across a network. An encoder is a program that compresses audio, video, or both, for broadcast. Wirecast supports a wide variety of encoders, also known as codecs.

The settings for encoders range from simple to very complex. Wirecast offers presets of the most common settings for encoders. This provides a starting point, reduces complexity, and enables you to experiment and adjust settings as you test your broadcast.

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

See *The Encoder Presets Window*.

Selecting an Encoder Preset

To use an encoder other than the default, select an encoder from the *Encoding* drop-down menu in the *Output Settings* dialog.

Note: Click *More* next to the *Destination* field to display a list of all available destinations. Check the box for each destination you want to include in the destination menu list.

Note: Click *Filter* from the gear menu next to the *Encoding* field to display a check list of encoder presets. Check the presets you want to display in the *Encoder Presets* menu. Click *Save* when finished.

Creating an Encoder Preset

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

To edit an encoder preset, do the following:

1. Select *Window* > *Encoder Presets*.
2. Select a preset to edit from the *Encoder Preset* drop-down menu.
3. Change the settings as desired.
4. Click *Save As*. Enter a name for the edited preset.
5. Click *OK*.

Note: Click *New Preset* from the Gear menu next to the Encoding field to create a new encoder preset. Enter a name for your new preset and click *OK*.

Note: Click *View Details* from the Gear menu next to the Encoding field to modify an encoder preset. One important option is Strict Constant Bitrate. When checked, the bitrate is strictly held at the bitrate entered in *Average bit rate*.

Modifying the MainConcept H.264 Preset

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

1. Select *Window* > *Encoder Presets*.
2. Select the MainConcept H.264 encoder preset from the *Encoder* drop-down menu.
3. To encode video, check the *Video Encoding* checkbox.

   When checked, Wirecast encodes the video for your broadcast. When *Video Encoding is* unchecked, the output contains a blank video screen.

Note: To create an audio-only broadcast, uncheck *Video Encoding* and check *Audio Encoding (AAC)*. To create a video-only broadcast, check *Video Encoding* and uncheck *Audio Encoding (AAC)*.

---

4. Enter the desired width, in pixels, into the *Width* field.
5. Enter the desired height, in pixels, into the *Height* field.
6. Select the desired framerate, into the *Frames per second* field. This value is a target value for the encoder. The exact value of the output is not guaranteed.
7. To encode your video at a target average bit rate (ABR), enter the target bit rate for your broadcast in Kbits (1000 bits) per second into the *Average bit rate* field. Higher numbers provide better quality, but you should limit the speed to the bandwidth available to your target audience. With ABR, the bitrate varies around this target. At a specific moment, the bitrate may be higher or lower than the target rate. Alternatively, consider encoding at a constant bit rate (CBR). See below.
8. Select an encoder profile from the *Profile* menu. Three profiles are provided: *Baseline*, *Main*, and *High*. The *Baseline* profile is commonly used in mobile applications and other applications operating with limited processing power, storage capacity, or bandwidth. The *Main* profile is appropriate for general-purpose applications of broadcast media and high-bandwidth Internet broadcasting. The *High* profile provides the highest broadcast-quality encoding.
9. (Optional) *Key frame every* allows you to enter the number of frames between the key frames Main Concept creates. The more often Main Concept creates a keyframe, the better the video quality, but, the greater the bandwidth required.
10. (Optional) To determine the number of frames between timecode stamps, check the *Timecode Every* checkbox and enter the number of frames. Main Concept embeds timecode stamps in the flash stream. If you enter the value of zero, Main Concept doesn't embed timecode.
11. (Optional) To encode your video at a constant bit rate (CBR) instead of at an average bit rate (ABR), check *Strict Constant Bitrate*. Disabling CBR can result in slightly improved quality and decrease file size, but at the cost of greater bit rate fluctuations. This could prove troublesome for certain streaming destinations. Selecting this option for recording is not recommended because it can result in decreased quality and larger files, with no real benefit. Alternatively, consider encoding at an average bit rate (ABR). See above.

12. (Optional) When checked, *Keyframe Aligned* facilitates adaptive bitrate streaming by ensuring that keyframes from multiple streams are in sync, along with the keyframes, timestamp, DTS and PTS values. This is true only if those other streams also have the option turned on and have the same keyframe interval. To accomplish this, Wirecast disables scene detection and manually inserts the keyframe at the exact keyframe interval specified. Therefore, to ensure quality and smooth switching in the player, the keyframe interval should be between one- to four-second range. When you enable *Keyframe Aligned*, absolute timestamp also is enabled.
13. (Optional) When you check the *Audio Encoding (AAC)* checkbox, Main Concept encodes the audio for your broadcast. When *Audio Encoding (AAC)* is unchecked, the output contains no audio track.
14. Select the type of audio channels: *Mono* or *Stereo*. *Mono* uses less bandwidth than *Stereo*.
15. Select the audio bit rate, in Kbits (1000 bits) per second, from the *Target Bit Rate* menu. This is the target bit rate for your audio. Higher numbers provide better quality, but you should limit the speed to the bandwidth available to your target audience. The encoder compresses the audio to approximate this target. However, at different times during your broadcast the bit rate may be higher or lower than the target rate. The total broadcast bit rate is a function of video bit rate plus audio bit rate.
16. Select the audio sample rate, in kHz (1000 Hz) per second, from the *Sample rate* menu. This value specifies how many thousands of times per second to sample the audio in the broadcast. Higher values provide better quality sound, but at greater bandwidth.
17. Click *Save* to save your settings.

See *The Encoder Presets Window*.

Modifying the x264 Preset

Note: The x264 implementation of the H.264 standard results in better quality and lower CPU usage for any given bitrate, but at the cost of higher memory usage. The default implementation is based on the MainConcept codec and uses less memory.

To modify an x264 preset, follow these steps:

1. Select *Window* > *Encoder Presets*.
2. Select an x264 from the Encoder menu.

Note: See *The Encoder Presets Window*.

3. Check the *Video Encoding* checkbox. When checked, the video for your broadcast is encoded. When unchecked, a blank video screen is provided. This is the preferred method of producing audio-only broadcasts.

4. Enter the Width of your broadcast video.
5. Enter the Height of your broadcast video.
6. Select the desired frames per second (fps) of your broadcast. This value is a target value for the encoder. The exact value is not guaranteed.
7. To encode your video at a target average bit rate (ABR), enter the target bit rate for your broadcast in Kbits (1000 bits) per second into the *Average bit rate* field. Higher numbers provide better quality, but you should limit the speed to the bandwidth available to your target audience. With ABR, the bitrate varies around this target. At a specific moment, the bitrate may be higher or lower than the target rate. Alternatively, consider encoding at a constant bit rate (CBR). See below.
8. Select encoding quality (*Ultra fast* to *Very slow* encoding). Slower encoding results in better quality.
9. In the *x264 command line options* edit box, enter any command line options you want included.
10. Select an encoder profile from the *Profile* menu. Three profiles are provided: *Baseline*, *Main*, and *High*. The *Baseline* profile is commonly used in mobile applications and other applications which operate with limited processing power, storage capacity, or bandwidth. The *Main* profile is appropriate for general-purpose applications of broadcast media, such as high-bandwidth Internet broadcasting. The *High* profile provides the highest broadcast-quality encoding.

    See *Profile*.
11. (Optional) *Key frame every* allows you to enter the number of frames between the key frames x264 creates. The more often x264 creates a keyframe, the better the video quality, but, the greater the bandwidth required.
12. (Optional) To encode your video at a constant bit rate (CBR) instead of at an average bit rate (ABR), check *Strict Constant Bitrate*. Disabling CBR can result in slightly improved quality and decrease file size, but at the cost of greater bit rate fluctuations. This could prove troublesome for certain streaming destinations. Selecting this option for recording is not recommended because it can result in decreased quality and larger files, with no real benefit. Alternatively, consider encoding at an average bit rate (ABR). See above.
13. (Optional) Check *Keyframe aligned*. When checked, it facilitates adaptive bitrate streaming by ensuring that keyframes from multiple streams are in sync, along with the keyframes timestamp, DTS and PTS values. But this is true only if those other streams also have the option turned on and have the same keyframe interval. To accomplish this, Wirecast disables scene detection and manually inserts the keyframe at the exact keyframe interval specified. Therefore, to ensure quality and smooth switching in the player, the keyframe interval should be in the 1 to 4 second range. When Keyframe Aligned is enabled, absolute timestamp is also enabled.
14. (Optional) To determine the number of frames between timecode stamps, check the *Timecode Every* checkbox and enter the number of frames. x264 embeds timecode stamps in the flash stream. If you enter the value of zero, x264 doesn't embed timecode.

15. (Optional) When you check the *Audio Encoding (AAC)* checkbox, x264 encodes the audio for your broadcast. When *Audio Encoding (AAC)* is unchecked, the output contains no audio track.
16. Select the number of channels: *Mono* or *Stereo*. *Mono* uses less bandwidth than *Stereo*.
17. Select the audio bit rate, in Kbits (1000 bits) per second, from the Target Bit Rate menu. This is the target bit rate of your audio. Higher numbers provide better quality. The connection speed of your audience is a significant factor in determining your target bit rate. The encoder compresses the audio to approximate this target. However, at different times during your broadcast the bit rate may be higher or lower than the target rate. The total broadcast bit rate is a function of video bit rate plus audio bit rate.
18. Select the audio sample rate, in kHz (1000 Hz) per second, from the *Sample rate* menu. This value specifies how many thousands of times per second to sample the audio in the broadcast. Higher values provide better quality sound, but at greater bandwidth.
19. To save your settings, click *Save*.

See *The Encoder Presets Window*.

Mapping Audio Tracks to Output Audio Channels

You can determine the output audio destination channels for each of the audio tracks available in a Wirecast document. To map audio tracks to output audio channels, do the following:

1. Click *Output* > *Output Settings*.

   Wirecast opens the *Output Settings* dialog.
2. Click the *Map* button.

   See *Map Button*.

   Wirecast opens the *Multi-Track Input Mapper* window.

   See *The Multi-Track Input Mapper*.
3. In each *Channel* row, click the checkbox for each track you want to send to that output audio channel.
4. To close the *Multi-Track Input Mapper* window, click the "x."

Mapping Audio Mixes to Playback Devices

PRO

There are times when you want to route different audio mixes to different destinations. For example, you might want to send a mix without microphone audio to your announcers, and a full mix, including mics, to the producer. In Wirecast, you can assign one playback device to announcers and another to the producer. Then, map the audio tracks desired to each playback device.

Note: You can route up to four output channels to audio devices.

To map an audio track to a playback device, do the following:

1. In the audio mixer, click *Add new audio output*.

   Wirecast opens a new *Audio Output* box to the right of the *Final Mix*.
2. In the *Audio Playback* drop-down menu, select the playback device desired.
3. In the *Audio Track Selection* drop-down menu, select the track required.

See *The Audio Mixer Window* and *The Multi-Track Input Mapper*.

Modifying the ProRes Preset

To modify a ProRes preset, follow these steps:

1. Select *Window Encoder Presets*.
2. Select the ProRes encoder preset from the Encoder menu.
3. Check the Video Encoding checkbox. When checked, the video for your broadcast is encoded. When unchecked, a blank video screen is provided. This is the preferred method of producing audio-only broadcasts.
4. Enter the Width of your broadcast video.
5. Enter the Height of your broadcast video.
6. Select the desired frames per second (fps) of your broadcast. This value is a target value for the encoder and the exact value is not guaranteed.
7. Set the quality of your encoding at high, medium, or low. Higher quality results with greater CPU usage.
8. (Optional) Check the *Audio Encoding* (AAC) checkbox. When checked, the audio for your broadcast is included. When unchecked, audio is absent. This is the preferred method of producing video-only broadcasts because the presence of silent audio uses bandwidth.
9. Select the type of audio channels: *Mono* or *Stereo*. *Mono* uses less bandwidth than *Stereo*.
10. Select the audio sample rate, in kHz (1000 Hz) per second, from the Sample Rate menu. This value specifies how many thousands of times per second to sample the audio in the broadcast. Higher values provide better quality sound, but at greater bandwidth.
11. To save your settings, click *Save*.

See *The Encoder Presets Window*.

Streaming

To start steaming, do the following:

1. Click the *Stream* button.

   See the *Stream* button on the screenshot in *Control/Status Bar*.

   The *Stream* button blinks green until a connection is made. Once you are connected, the *Stream* icon turns unblinking green. If you can't connect, Wirecast displays an error message.

   If you are streaming to Facebook, Wirecast displays additional statuses on the right side of the status bar.

   See *Streaming Status Colors*.



2. (Optional) To record your broadcast click *Record*.
3. To stop streaming, click *Stream* again.

Streaming Status Colors

Wirecast indicates connectivity strength by the number of bars displayed in the *Stream* icon. Fewer bars indicate lower speed or connection reliability issues. If packets aren't reaching the destination server, Wirecast buffers the packets. When this happens, the green streaming indicator turns yellow and Wirecast continues sending those packets in an attempt to reach the destination server.

If packets continue to fail to reach the server, Wirecast drops packets, and the streaming indicator turns red. When Wirecast stops attempting to send packets, Wirecast displays the red *Failed* icon .

When the connection is recovered, Wirecast replaces the red *Failed* icon with green bars.

Buffer Utilization

When streaming over RTMP, there is a buffer for the packets called the flash queue.

The buffer is utilized to handle scenarios where the Internet uplink to the RTMP endpoint (CDN) temporarily is unable to deliver at a fast enough rate. Any of the following can cause a slow-down:

- Your local LAN is saturated
- Your ISP uplink is saturated
- The route from your ISP to the end point is compromised or saturated
- The endpoint is saturated

- Any degradation in transmission speed from Wirecast to the CDN endpoint.

Colors

- Green will be shown when the flash queue is able to be emptied just as fast or faster than it is able to be filled.
- Yellow will be shown when the flash queue has grown, but is not yet approaching overload.
- Red will be shown when the flash queue is just about to be full, in which packets will be lost.

Example 1

- Encoding is set to 7Mbps
- ISP upload speed is 7Mbps
- Video content was fairly still, but a scene change or shot switch occurs that is fast motion.
- The encoder bursts to handle the more complex content, and momentarily requires 8Mbps to properly deliver the content.
- The flash queue is only able to output at 7Mbps, so it grows with more frames/ packets backed up.
- The Icon color turns Yellow, to alert this state.
- The encoder catches up, and settles back down to 5Mbps after the scene change.
- The Icon returns to green.

Example 2

- Encoding is set to 5Mbps
- ISP upload speed is 7Mbps
- Video content is running fine, with green Icon.
- Someone else on the network begins uploading at 4Mbps, perhaps an Aspera transfer if you remember those taking down Telestream's network...
- The available bandwidth to the stream is 3Mbps during this usage.
- The icon will turn yellow, then turn red.
- If the queue stays red for long enough, the stream disconnects.

Example 3

- Encoding is set to 5Mbps
- ISP upload speed is 7Mbps
- Video content is running fine, with green Icon.
- The ISP oversold their network, and some neighboring business or residents all hopped on the Internet at the same time.
- The available upload speed drops to 5Mbps

- The icon drops to yellow, then to red.
- The icon stays red, and the stream continues.
- Viewers are still seeing the stream despite the icon being red.
- The flash queue is able to unload the packets during downward bitrate fluctuations, and builds more packets in buffer during upward bitrate fluctuations, just enough that the queue stays in this almost-full-but-hasn't-burst state.

Troubleshooting Connectivity for Streaming

You can test for server-side issues by running a test stream to a test server. If you get a continuous green streaming indicator to the test destination, but poor streaming to your regular destination server, the problem probably lies with the destination server. Contact the CDN host and report the destination-server problem.

To test for Internet ISP problems, run a speed test. Note upload speed and packet loss. Your combined encoder settings to all destinations should total no more than half the tested upload speed. Streaming requires this headroom because both the sending data rate and the ISP upload bandwidth can vary from moment to moment. Actual upload speed often varies from the speed claimed by an ISP.

Keep packet loss at 0%. Any other number indicates packet loss. If you are losing packets, have the ISP run tests to your point-of-origin broadband connection.

While streaming from Wirecast, keep CPU use under 60% for optimal performance. If CPU usage exceeds 80% a variety of problems might occur, including disconnection.

Limiting Reconnection Attempts

When Wirecast loses an Internet connection, Wirecast attempts to reconnect. Each time Wirecast attempts reconnection, the *Stream* icon blinks.

To limit the number of reconnection tries, do the following:

1. Select *File* > *Preferences* > *General*.
2. Enter a value into the field, *Maximum Reconnect Attempts*.
3. To close the *Preferences* dialog box, click the "x."

Configuring Replay + ISO

PRO

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

ISO (or Isolated Output) recording allows users to record system devices (cameras, capture cards, or mics) not being broadcast. This enables you to broadcast one device while recording another. You also can set up ISO sources as replay sources. Wirecast

provides all replay functionality, such as keyboard shortcuts, mark-in, and mark-out, for ISO sources.

Replay and ISO share the same menu because you can set up ISO sources for replay. You can toggle this functionality in the *ISO Settings* window. If you set an ISO source for replay, Wirecast applies the replay settings configured in the *Replay+ISO* window to the ISO source.

Note: Wirecast doesn't render multiple replay clips captured during the same replay session when played at the same time on different main layers or on different shot layers.

To use the *Replay* feature, first set it up the way you want it to perform. To set up *Replay*, do the following:

1. Select *Replay+ISO* > *Configure*, or click the Replay+ISO Settings  button.
2. Check the *Program Replay* box.
3. Choose the settings desired. Descriptions of the settings follow.

Capture Audio in the Replay

Check the *Audio* box to capture audio in the replay you're creating. If unchecked, all audio is ignored.

Video Quality

Set the video quality for *Standard* or *High*. Depending on the quality you choose, Wirecast displays an estimate of the *write rate*.

Folder

Click *Browse* and navigate to the location where you want to store your replay shots.

Create Replay Keyboard Shortcut

Select a keyboard shortcut from the drop-down menu that will activate the *Create Replay* function.

Update Replay Keyboard Shortcut

Select a keyboard shortcut from the drop-down menu that will activate the *Update Replay* function.

Mark Replay Keyboard Shortcut

Select a keyboard shortcut from the drop-down menu that will activate the *Mark Replay* function.

Manage

Opens the *Preferences* > *Shortcuts* window so you can add, delete or change your application shortcuts and document hotkeys. Check the *Global* check box if you want that hotkey to be available in the drop-down menus above.

4. Click *OK*.

See *Replay + ISO Menu* and *Replay Shots*.

Activating Replay

Note: When *Replay* is activated, CPU usage increases.

To activate *Replay*, select *Replay* > *Start All*.

The *Start All* menu item becomes *Stop All* and Wirecast adds buttons to the Wirecast default layout: *Set Replay Mark In* and *Update Replay Shot*.

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

See *Replay Shots*.

Configuring ISO Recording

ISO (or Isolated Output) recording is a Wirecast Pro feature that allows you to create clean recordings of your system devices (cameras, capture cards, or mics) even when they are not being displayed in the *Live Broadcast Area*. This can be useful when creating a video-on-demand version of your live show. You can save full recordings of all your cameras even when they weren't live in your broadcast.

There are two ways to record ISO sources:

- *Capture Source ISO* allows you to choose one source to record, such as a webcam or a microphone. This makes an isolated source recording. If your source includes audio, you can capture that audio with *Capture Source ISO*. This option doesn't enable you to combine separate audio and video raw sources into one ISO recording.

  See *Capture Source ISO*.

- *Shot ISO* lets you record any shot that is on your *Main Shot Display*. You can mix two or more sources into a single shot. You can record ISO sources, such as WebRTC (Rendezvous and Wirecast Go), NDI, Webstream, or Elgato sources, that are not supported by the *Capture Source ISO* option.

  See *Shot ISO*.

1. To configure a source for ISO recording select *Configure* from the *Replay+ISO* menu.
2. Click *Add ISO*. Configure as desired.

Note: If you want to record audio that is coming from a separate source, such as from a separate microphone, you can set up ISO recording for the separate source via *Capture Source ISO*. Alternatively, you can place your chosen video and audio sources into a single shot on the *Main Shot Display* and use *Shot ISO* to record that multi-source shot.

Capture Source ISO

Capture Source ISO lets you record an individual ISO camera or audio source. For example, you can record a Facetime session from a phone, or video and audio from a camera plugged into a capture card.

Note: Certain sources, such as Rendezvous guests, Web Stream sources, IP Cameras sources, Web Page plugin sources, or Wirecast Go sources will not show up as available *Capture Source ISO* sources. To record these, you should use *Shot ISO*.

If your chosen source produces both video and audio, you have the option to include which media tracks are included from your single source.

Note: Wirecast splits pre-Wirecast 14.1 ISO-configured documents containing video and audio from two different sources into two separate source recordings: one for audio, one for video.

Shot ISO

Shot ISO lets you record any ISO shot on the *Main Shot* display. You can combine any audio and video sources into a shot. You can also record shots that contain sources that aren't available in *Capture Source ISO*, such as Rendezvous guests and IP camera sources.

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

Shot ISO recordings produce video at the canvas resolution and frame rate. You can adjust these in *Preferences* > *Canvas*. Audio settings match the Wirecast internal mixer settings: stereo, 32-bit float, 48 kHz.

Note: *Shot ISO* recording doesn't play animated graphics or media files contained in your source. If you don't want a static image to appear in place of the graphics or media, place that source in a different shot on a different layer.

Audio-Only Recordings You can make audio-only ISO recordings, using either *Capture Source* (if your source is audio) or *Shot ISO* (if your shot includes only audio).

The ISO configuration dialog displays the current video resolution and frame rate for the selected source, as well as the number of audio channels, bits per sample, and sample rate. When no source is selected or the source does not produce a certain type of media, *Wirecast displays None* next to the corresponding video and audio track checkboxes.

ISO Recording Formats

- QuickTime: ProRes Video + Uncompressed Audio: ProRes is better suited for NLE work. Also, color space information is less ambiguous.

- QuickTime: x264 Video + Uncompressed Audio:
  - x264 is a compressed video file that results in significantly smaller file sizes.
  - x264 recordings are still placed in QuickTime files and still paired with uncompressed audio. Uncompressed audio offers top quality and minimal CPU drain for archival purposes.
  - You can choose the bitrate and keyframe interval for recordings that use x264 encoding.The default values are 10 Mbps with 15 frames/second. The defaults were chosen for high quality full HD archival. We use the high-profile encoder setting and the "fast" x264 algorithm with variable bitrate encoding.

Quality

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

Filename

The filename for each new ISO recording includes the next number in a sequence that begins with 1. For example, Wirecast names the first ISO file "ISO 1", the second "ISO 2", the third "ISO 3", and so on. Name-sorted listings of recordings on disk remain in order beyond the ninth ISO configuration.

You can choose another name for an ISO file, but that will not affect the automatic sequential naming. If you rename "ISO 1" to "Names Don't Matter," Wirecast still names the next file "ISO 2" by default.

Folder Wirecast remembers the last folder you assigned to an ISO recording configuration and uses that folder as the default for the next configuration you create. Wirecast applies this setting to all projects.

Replay Check this to make your ISO recording available for instant replay within the broadcast. You can apply this setting for files created through *Capture Source ISO* as well as through *Shot ISO*.

See tutorials on Replay for information on configuring ISO replays.

File Options

Single File

This is best used if you have shorter broadcasts and have plenty of disk storage space. When you choose *Single File*, you're choosing a 12-hour maximum file duration.

New File Every

This ensures you don't generate files larger than available disk space. If you have a long broadcast or limited space, consider limiting your ISO file sizes. This option breaks long recordings into files at the duration you specify.

See *Starting your ISO Recording*.

Recommended Minimum System for ISO Recording

ISO recording is resource intensive. Recording individual cameras or shots alongside the actual production requires a powerful system.

For ISO recording, the minimum recommended system includes:

- An i7 processor
- A high-end dedicated graphics card
- An SSD for recording

Recording To Disk

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

To record to disk, do the following:

1. Click the *Record* button (or *ISO Record* button) at the top of the Wirecast default layout.

   Wirecast opens the *Output* window.
2. To add a recording destination, click the *Add* button at the bottom of the window.

   Wirecast displays a dialog box.
3. Select *Record to Disk* and click *OK*.
4. In the *Output Settings* window, select *Record To Disk* (MOV, MP4 or Windows Media).
5. Select an encoder.
6. Click *Browse* or enter the path to the location where you want your recording saved.
7. Select a recording mode: *Use Filename Only*, *Auto Increment Filenames*, or *Timestamp Filenames*. If you select *Auto Increment Filenames*, your filename will have an incremental number appended to the end of it. This causes a new file to be created every time you start recording to disk. If you select *Use Filename Only* your previous file is overwritten.
8. Click *OK*.

Note: When recording to disk on FAT32-formatted drives, single files can't be larger than 4GB in size. So, recording files larger than 4GB to a FAT32-formatted drive may result in files that do not close properly. We recommend you record to disk on a Mac OS X Extended formatted partition whenever possible.

Live Broadcast Production

Once you've created a document and have configured the inputs and outputs for your broadcast, you're ready to broadcast with Wirecast.

Topics

- Launching Wirecast 103
- Switching 103
- Broadcasting 104
- Viewing the Countdown Timer for a Shot 106
- Final Mix Audio 107
- Viewing a Layer in a Layer Window 108
- Social Media Comments 108
- Creating a Border 110
- Controlling a PTZ Camera 111
- Tracking a Face with Virtual PTZ 111
- Starting your ISO Recording 111

Launching Wirecast

To start Wirecast, double-click the Wirecast icon that was placed on your desktop during installation.

Switching

You can view shots in the *Preview Area* before taking them live, with *AutoLive* disabled. Alternatively, you can take shots live with one click, without previewing, with *AutoLive* enabled.

Switching with Preview

Do the following to switch shots when *AutoLive* is disabled:

1. Click a shot in a layer, or several shots in different layers.

   Wirecast displays the shots in the *Preview Area*.

2. Click a *Transition Controls* button. Alternatively, press the keyboard shortcut Command+1 to select the first *Transition Controls* button or Command+2 to select the second *Transition Controls* button.

   See the *Transition Controls* button on the screenshot in *The Default Layout*.

3. Click the *Go* button.

   Wirecast places the shots in the *Preview Area* into the *Live Broadcast Area*, and broadcasts the shot.

See *AutoLive*, *The Default Layout*, *Final Mix Audio Panel*, and *Go Button*.

Switching to a Playlist

Switching to a playlist is the same as switching to any other shot. To switch to a playlist, when *AutoLive* is disabled, do the following:

1. Select the playlist shot.

   Wirecast displays the shot in the *Preview Area*.

2. Click the *Go* button.

   Wirecast displays the shot in the *Live Broadcast Area*, and broadcasts the shot.

See *AutoLive*, *The Default Layout*, and *Go Button*.

Single-Click Switching with AutoLive

To switch shots when *AutoLive* is enabled, click a shot in a layer.

Wirecast places the shot in the *Live Broadcast Area*, and broadcasts the shot.

Note: When you select multiple shots on multiple layers, Wirecast displays all of them in the *Live Broadcast Area*, with layer 1 on top and layer 5 at the bottom.

See *AutoLive*, *The Default Layout*, and *Go Button*.

Locking Layers, Preview, or the Shot Editor

You can lock Wirecast layers, Preview window, or the Shot Editor, to prevent unintentional changes during live screencasts. To lock layers, the Preview Window, or the Shot Editor, do the following:

1. Select *Edit* > *Lock*, and choose the option desired.

See *Lock*.

Broadcasting

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

See *Selecting a Destination*.

To start broadcasting, select *Output* > *Start/Stop Broadcasting* > *Start All*.

Note: If you try to broadcast without first configuring an output, Wirecast opens the *Output Settings* window for you. See *The Output Settings Window*.

Applying a Video Filter to a Source

You can apply video filters to a video source or to a shot on a layer. If you apply a video filter to a source, the filter remains on the source wherever the source is used in the Wirecast document. If you apply the video filter to a shot, the filter remains only on the specific shot and layer where the filter is applied, not on the source.

To apply a video filter to a source, do the following:

1. In a layer, select a shot.
2. In the *Shot Editor*, select the *Source Properties* tab.

   See *Source Properties Tab*.
3. Click the plus (+) button to the right of the heading, *Video Filters*.

   Wirecast opens a drop-down menu of available video filters.

   For descriptions of the video filters, see *Video Filters Tab*.
4. Select the filter desired.

   Wirecast applies the video filter to the source selected.
5. (Optional) To add another filter, click the plus (+) button and make another selection. You can apply multiple filters to a source.

Applying a Video Filter to a Shot

You can apply video filters to a video source or to a shot on a layer. If you apply a video filter to a source, the filter remains on the source wherever the source is used in the Wirecast document. If you apply the video filter to a shot, the filter remains only on the specific shot and layer where the filter is applied, not on the source.

To apply a video filter to a shot on a layer, do the following:

1. In a layer, select a shot.
2. In the *Shot Editor*, select the *Video Filters* tab.

   See *Video Filters Tab*.
3. Click the plus (+) button to the right of the heading, *Video Filters*.

   Wirecast opens a drop-down menu of available video filters.
4. Select the filter desired.

   Wirecast applies the video filter to the source selected.

5. (Optional) To add another filter, click the plus (+) button and make another selection. You can apply multiple filters to a shot.

Removing a Background from a Shot

You can remove an existing background from a shot by applying the Background Removal filter.

To remove a background, do the following:

1. In a layer, select a shot.
2. In the *Shot Editor*, select the *Video Filters* tab.

   See *Video Filters Tab*.
3. Click the plus (+) button to the right of the heading, *Video Filters*.

   Wirecast opens a drop-down menu of available video filters.
4. Select *Background Removal*.

   Wirecast opens the *Background Removal* control panel in the Source Video Filter tab, and applies the Background Removal filter to the source selected.
5. Select the mode of removal from the *Mode* drop-down menu.

See *Background Removal*.

Viewing the Countdown Timer for a Shot

The countdown timer under the *Live Broadcast Area* can show the countdown for any of the shots, including playlist shots, displayed in the *Live Broadcast Area*.

To select a shot for the countdown timer, take one or more shots to the *Live Broadcast Area*. Then, do the following:

1. To open the counter display mode menu, click the gear icon under the *Live Broadcast Area*.
2. Do one of the following:

- Select the top item (the name of the currently playing shot) to display its count-down time alone.
- For a playlist, select the bottom item (*New Playlist - Completion*) to display the countdown time of the current shot and of the playlist.

See *Playlist Countdown Timer Display*.

Taking a Snapshot of the Live Broadcast Area

You can take snapshots of the *Live Broadcast Area* on-the-fly. Wirecast saves the snapshots as PNG files in the folder designated for snapshots. To take a snapshot of the *Live Broadcast Area*, do the following:

1. Make sure the snapshots are kept in a folder convenient for you.

   See *Live Snapshots Folder*.

2. Start broadcasting.

   See *Broadcasting*.

3. When the desired frame appears in the *Live Broadcast Area*, click the *Snapshot* button.

   See *Snapshot Button*.

Final Mix Audio

With the *Final Mix Audio* panels, you can set the volume level, or you can mute the final mix audio level, for the *Preview Area* or the *Live Broadcast Area*. There are separate *Final Mix Audio* panels for the *Preview Area* and for the *Live Broadcast Area*. The controls for both *Final Mix Audio* panels work the same way.

See *Final Mix Audio Panel*.

Displaying the Audio Mixer

To display the Wirecast audio mixer, select *Window* > *Audio Mixer*.

See *Window Menu*.

Displaying or Hiding the Final Mix Audio Panel

To display *Final Mix Audio* for preview and live displays, select *Layout* > *Final Mix*.

To hide *Final Mix Audio* select *Layout* > *Final Mix* again.

See *Final Mix Audio Panel*.

Controlling or Muting the Final Mix Audio Level

To control the volume for either the *Preview Area* or for the *Live Broadcast Area*, select the respective *Final Mix Audio* panel, and do one of the following:

- To set the volume, click and drag the slider control up or down.

  The decibel scale next to the slider indicates the audio level. When you take a preview shot live, the live audio levels match the levels set in preview.

- To mute the audio output, click the *Mute* button.

See *Final Mix Audio Panel*.

Adding a Filter to an Audio Channel

To add a filter to an audio channel, do the following:

1. Open the audio mixer.

   See *Displaying the Audio Mixer*.

2. In the *Live Sources* pane, click the *Add New FX* button.

   Wirecast opens a drop-down menu of available effects.

3. Select an effect.

   Wirecast adds the name of the selected effect to the *Live Sources* pane of the audio mixer.

See also *Adding VST Plugins to the Available Audio Plugins*.

Adding a Filter to the Final Audio Mix

To add a filter to the final audio mix, do the following:

1. Open the audio mixer.

   See *Displaying the Audio Mixer*.

2. In the *Final Mix* pane, click the *Add New FX* button.

   Wirecast opens a drop-down menu of available effects.

3. Select an effect.

   Wirecast adds the name of the selected effect to the *Final Mix* pane of the audio mixer.

See also *Adding VST Plugins to the Available Audio Plugins*.

Viewing a Layer in a Layer Window

To open any layer in its own window, do the following:

1. Select *Window* > *New Layer Window*.

   Wirecast displays a list of the layer windows you can open (*Main Layer 1* through *Main Layer 5*).

2. Select the layer you want to open.

   Wirecast displays the layer in a separate layer window.

This separate layer window works exactly like the layers in the default display, but you can move layer windows independently of one another.

See also *Layers*.

Social Media Comments

You can include comments made by viewers on various social-media platforms in your broadcasts, through the *Comment Moderation* window.

See *Social Media Shots* and *The Comment Moderation Window*.

Sorting Social Media Comments

To sort social media comments by super-chat comments, then favorite comments, then all other comments, click the *Favorite* header in the *Comment Moderation* window.

See *The Comment Moderation Window*.

Moderating Social Media Comments

Once you have a social media title in your document, and comments coming into the *Comment Moderation* window, select a comment in the *Comment Moderation* window, and select your social media title in the main shot display.

To moderate comments, do the following.

1. Select one of the following:
   - *Create Title Shot* from the lower-left corner of the *Comment Moderation* window *View comments* pane.
   - (+) *Choose Overlays* > *Social Media Title*.

     Wirecast opens the *Social Media Title* window.
2. Select a social media title, and adjust any settings in the *Social Media Title Properties* window.
3. Select *Social* > *Comments*.

   Wirecast opens the *Comment Moderation* dialog box.
4. Once you have comments coming in, and a social media title in your document, click the *Live* radio button for one or more comments in the *Comment Moderation* window.

   The selected comment appears in the *Social Media Title* in the *Preview* window.
5. Click *Go Live* to send the social media title to your live broadcast.

- Once your social media title is live, you can select any other comment in the *Comment Moderation* window. Wirecast transitions the first comment out and the next comment in.
- If you have *Rotate Selected.*. checked, simply leave your social media title live. Wirecast automatically rotates the selected comments into your broadcast.

See *Social Media Shots* and *The Comment Moderation Window*.

Moderating Facebook or YouTube Comments for a Streaming Computer or RTMP Server

You can moderate Facebook or YouTube comments from a computer that is broadcasting your program from Wirecast, while you stream the broadcast to Facebook or YouTube via a second computer, streaming server, or RTMP server.

These are two typical scenarios for this method:

- You produce a show using Wirecast on one computer, and transmit the feed to another computer or streaming service. The second computer or service streams the broadcast to Facebook or YouTube. Some producers use this method to balance resources between two computers.
- You produce a show using Wirecast, and stream to Facebook or YouTube from the same computer. In this scenario, you use a generic RTMP server, not the built-in Facebook or YouTube destinations in Wirecast.

Do the following:

1. Make sure you have authenticated Wirecast with the desired social media platform. See *Social Media Shots*.
2. To open the *Comment Moderation* dialog select *Social* > *Comments*.

   Wirecast opens the *Comment Moderation* dialog box to the *Active Accounts* pane.
3. Click the *Add Facebook or YouTube Feed* (+) button.

   See *View Active Accounts*.

   Wirecast opens the *Select Destination* dialog box.
4. Log in using credentials that have rights for the page, group or channel you want to access.

   Do one of the following:

   – Click the name of the social media platform to which you are streaming and from which you want to grab comments. Log in with your user account credentials.

   – Check the box for *Login as new user*, create a user account, and log in.

   In the *Comment Moderation* window, Wirecast displays the posts in your feed for the platform selected.

   Wirecast displays a drop-down menu of events.
5. Choose the name of the event or live stream desired.

   Once your stream has started, you should see the comments come through to your moderation panel, as you would if you were streaming directly from that computer.
6. Select comments for display as you would when moderating comments on a Wirecast computer which is broadcasting.

   See *Moderating Social Media Comments*.

See *Social Media Shots* and *The Comment Moderation Window*.

See also How to bring social media comments from a live stream that is not coming from your Wirecast system.

Creating a Border

You can add a border around a video layer, and control the parameters of the border. To create a border, do the following:

1. Open the *Shot Layer Properties* tab.

   See *The Shot Editor Window*.

2. To open the border controls, click the triangle next to *Border*.
3. Adjust the border controls as desired.

   See *Border*.

Controlling a PTZ Camera

To control a remotely-controlled pan-tilt-zoom (PTZ) camera, do the following:

1. Configure Wirecast for the PTZ camera.

   See *Setting Up PTZOptics Camera with a Dynamic IP Address* and *Setting Up PTZOptics Camera with a Static IP Address*.
2. Select a PTZ camera shot in a layer.
3. In the *Shot Layer Properties* tab of the *Shot Editor*, click the triangle next to *PTZ*, and click the *PTZ Controller* button.

   Wirecast opens the PTZ controller panel.
4. Control the camera with the controls in the *PTZ Controller*.

See *The PTZ Controller Panel*, *PTZ Control in the Shot Layer Properties Tab*, and *Tracking a Face with Virtual PTZ*.

Tracking a Face with Virtual PTZ

To have Wirecast keep a face in a video clip centered in the frame automatically, do the following:

1. Select a shot, or a source video.
2. Apply the Virtual PTZ filter to the selected source or shot, as you would any other video filter.

   See *Applying a Video Filter to a Source* and *Applying a Video Filter to a Shot*.
3. In the Virtual PTZ control in the Video Filters tab, adjust the amount of tracking by dragging the slider.

See also *Controlling a PTZ Camera*.

Starting your ISO Recording

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

1. Click *Replay+ISO* to open the drop-down menu. Select either *Start All* or another ISO that you have set up.
2. Alternatively, click the ISO-REC button at the top of the default layout. This starts all your configured ISO recordings.

See *Configuring ISO Recording*.

ISO Error Reporting

When starting ISO recordings, Wirecast might display the error message, *Av recording failed to start. View the user log for details and edit the Replay+ISO configuration to resolve issues*. Also, Wirecast posts specific error messages to the user log. The dialog contains an *Edit* button which opens the ISO configuration dialog.

Many types of ISO recording errors occur after you start recording; some occur soon after. Wirecast reports these asynchronous errors only in the *Notifications* window not in separate error messages.

Configuration Errors and Warnings

While you interact with the ISO configuration dialog, Wirecast searches for a number of configuration errors and potential problems. Warning icons appear in the dialog next to the configuration fields. If you hover the cursor over a warning icon, Wirecast displays a tool tip detailing the problem. Also, Wirecast displays the topmost warning message in red text at the bottom of the dialog until you clear all warnings for the selected configuration.

A warning icon appears near each ISO configuration that has a problem. A list of the configuration problems Wirecast detects follows.

- No source/shot is selected for recording
- The recording uses a source or shot that no longer exists
- The recording uses the same source or shot as another recording
- No media tracks are enabled for recording
- The source does not produce media that matches the enabled tracks
- The recording uses the same output file as another recording
- The file name contains restricted characters
- The selected output folder does not exist
- The space available on the selected drive is insufficient for recording
- The file duration must be between 10 seconds and 12 hours

See *Configuring Replay + ISO*.

Windows, Controls, and Menus

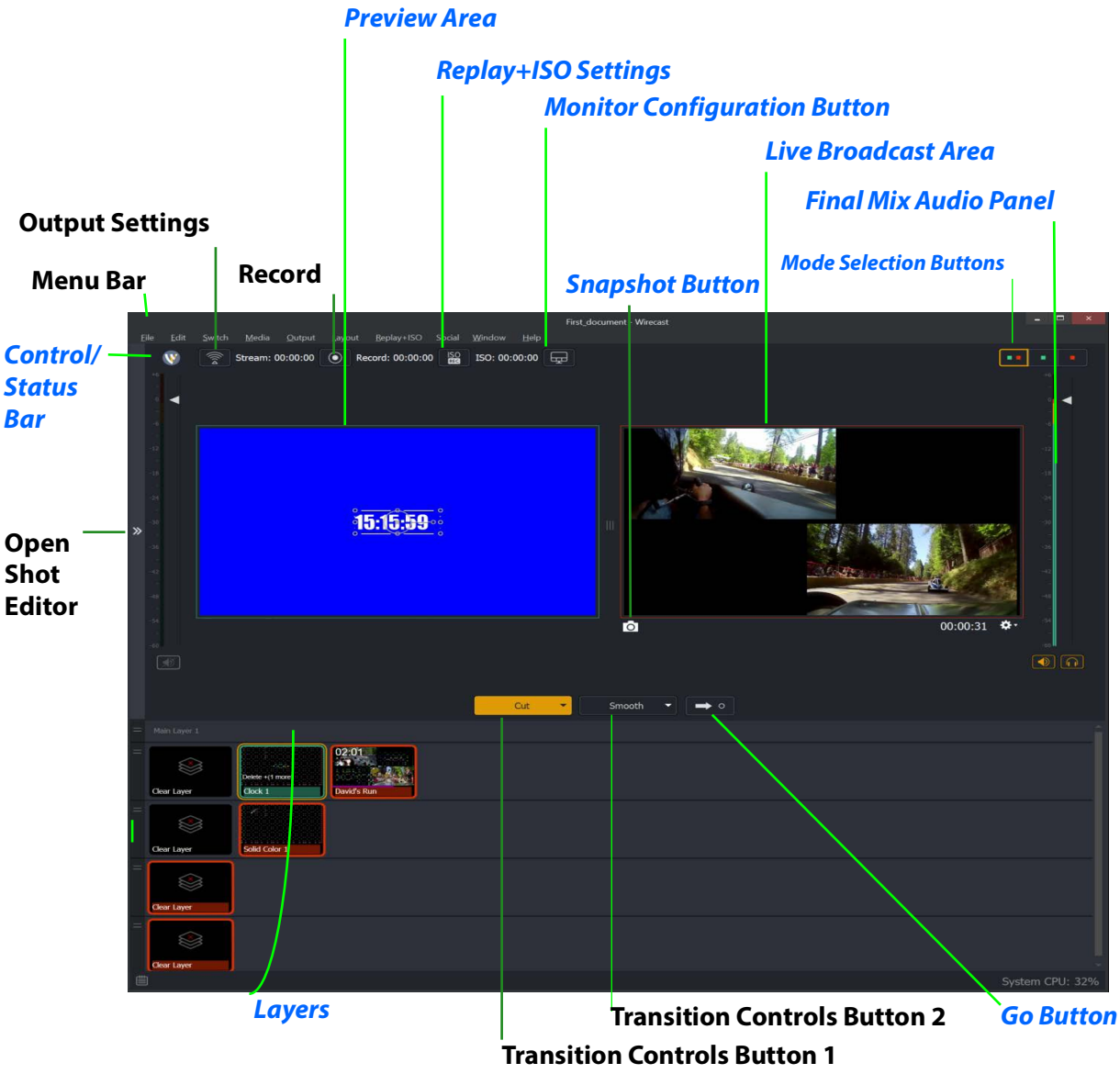
You create broadcasts through the various windows, controls, and menus of Wirecast.

Topics

- Touch Bar (MacBook Pro only) 119
- Preview Area 120
- Live Broadcast Area 120
- Final Mix Audio Panel 121
- Layers 123
- Add Shot Window 123
- The Shot Editor Window 144
- The Shot Menu 158
- The Preferences Dialog Box 160
- The Audio Mixer Window 171
- The Output Settings Window 173
- The Encoder Presets Window 176
- The Comment Moderation Window 177
- The PTZ Controller Panel 179
- Menus and Application Keyboard Shortcuts 182
- Wirecast Menu 182
- Edit Menu 183
- Switch Menu 186
- Media Menu 188
- Output Menu 189
- Layout Menu 192
- Replay + ISO Menu 193
- Social Menu 195
- Window Menu 195
- Help Menu 200

■ The Default Layout

When you create a new document, Wirecast displays the document in the default layout. The main elements of the Wirecast layout are labeled in the following screen shot, and are described below.



Control/Status Bar

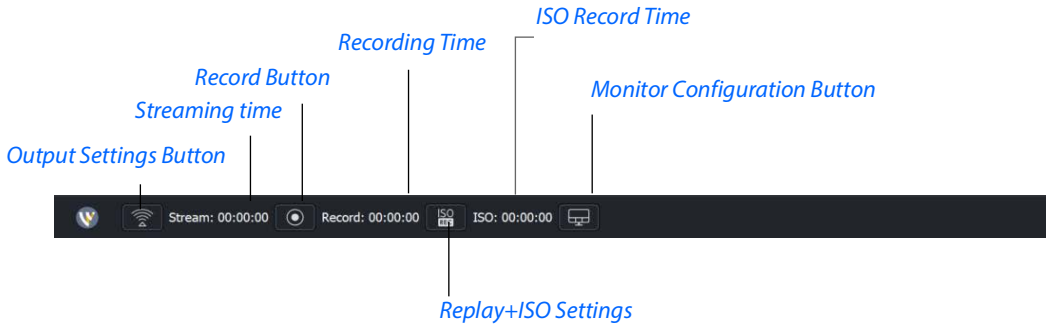
Control buttons and status information are displayed at the top of the default layout.

Wirecast displays the following controls and statistics:

Output Settings Button

When clicked, Wirecast begins streaming.

Figure 1. The Control/Status Bar



Streaming time

Total cumulative time the document has been streamed. This value does not reset when you start/stop the broadcast. If you save portions of the broadcast to disk, Wirecast still displays the total cumulative time.

Record Button

Click to begin recording.

Recording Time

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

Replay+ISO Settings

Click to open Replay+ISO settings dialog.

ISO Record Time

Displays the ISO recording time.

Monitor Configuration Button

Opens the configuration window if you haven't already configured your displays. Once you've configured your displays, this button places the windows on your displays as configured.

Display Buttons

These three buttons enable you to choose to display the *Preview Area*, the *Live Broadcast Area*, or both in a divided display.

Note: To avoid decrease in video quality, Wirecast should not be used at CPU usage above 80%. See the Telestream Website for suggested configurations. You can also view streaming statistics by selecting *Output* > *Show Statistics*.

Transition Buttons

Wirecast displays up to four transition buttons: up to three *Transition Controls* buttons, and the *Go* button. You can assign transitions to the *Transition Controls* buttons. Typically, use *Cut* as the standard first transition control, and *Smooth* as the standard second transition control. Clicking the *Go* button executes the selected transition control.

Note: *Preferences* > *General* enables you to determine the number of Transition Controls buttons Wirecast displays (between 0 and 3).

Changing Transitions

Click the *Cut* button to make it the current transition type.

You can also select one of the two buttons by pressing Command+1 or 2 keys for the two transition types displayed.

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

Go Button

When clicked, Wirecast executes the transition selected, broadcasts the shot selected, and displays it in the *Live Broadcast Area*.

If *AutoLive* is enabled, the *Go* button appears with a red dot. When *AutoLive* is enabled, simply selecting a shot--without clicking the *Go* button, broadcasts the shot.

With *AutoLive* enabled, clicking the *Go* button updates the live shot with any changes you have made to it with the *Shot Editor*. If you have made no changes to the live shot, clicking the *Go* button does nothing when Wirecast is in *AutoLive* mode.

With AutoLive disabled, you can make several changes to your broadcast without your viewers seeing the change. This is most useful when an engineer runs your broadcast.

See *Single-Click Switching with AutoLive* and *AutoLive*.
See *Selecting and Customizing Encoder Presets* and *Specifying the Transitions for the Transition Buttons*.

Mode Selection Buttons

Button containing green and red dots

When clicked, Wirecast displays both the *Preview Area* and the *Live Broadcast Area*.

Button containing green dot

When clicked, Wirecast displays the *Preview Area*.

Button containing red dot

When clicked, Wirecast displays the *Live Broadcast Area*.

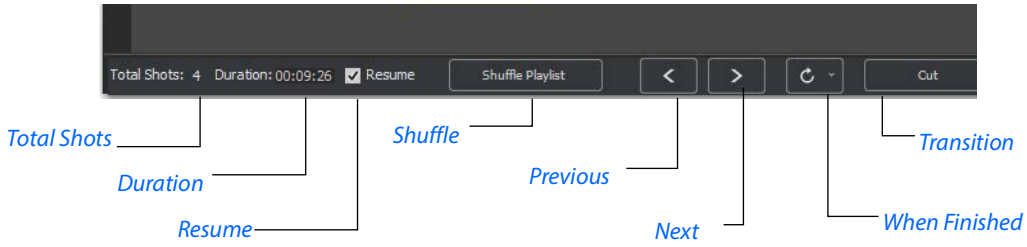
Note: These three buttons work the same as three of the options in the *Layout Menu*. See *Layout Menu*.

Playlist Controls

Wirecast provides basic playback controls for playlists. The controls are located at the bottom of the *Playlist* tab window and in the *Source Properties* tab for a selected playlist. You can transition to the previous or next shot in the list, set playlist behavior, shuffle the playlist order, and more.

See *Source Properties Tab*.

Figure 2. Playlist Controls



Total Shots

Displays the total number of shots in the playlist.

Duration

Displays the duration of the playlist.

Resume

When checked, if you exit the playlist, when you return the playlist will resume playing at the location (same shot) as when you exited.

Shuffle

Click to shuffle the order of the playlist shots.

Previous

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

Next

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

When Finished

Sets the behavior of the playlist when the last shot in the list has been played. A check mark indicates what menu item (behavior) is selected.

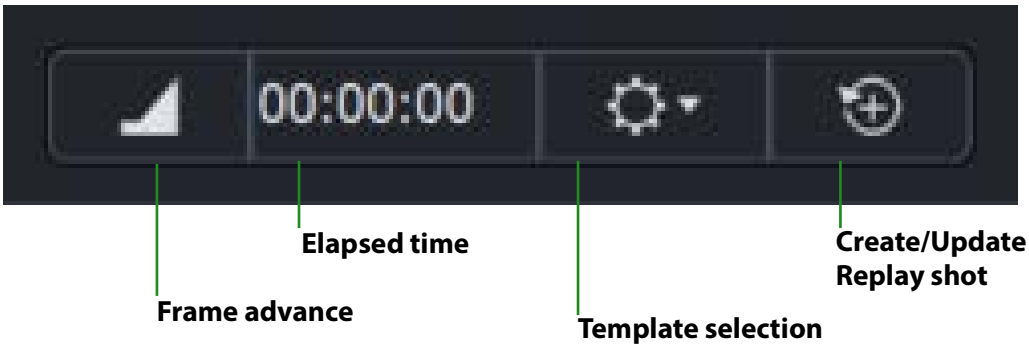
- *Loop* transitions back to the first shot, endlessly.
- *Hold* stays on the last shot. If the last shot is a clip, the last frame in the clip is displayed. If the last shot is a live shot, the live source stays active. If the last shot in a Playlist is a video clip Shot, it will obey the rules set for the video clip in the Media Properties Inspector tab under *Source Properties*. However, it will hold the Playlist on that last Shot if *Set Playlist Behavior* is set to "Hold". Therefore, if you want to see the last video in the Playlist pause on the last frame, you must set *When Finished* to "Hold" under Source Properties, in addition to setting the playlist behavior to "Hold". If you set *When Finished* to "Loop", under Source Properties, the last video in the Playlist will continue to loop.
- *Available Shots* transitions to another shot on the same layer. All available shots are listed as menu selections. (In the example shown, the only available shot is "Logo".)
- *Previous Live Shot* transitions back to the shot that was live before the playlist began playing.
- *Current Preview* transitions the contents of Preview to the *Live Broadcast Area*.

Transition

Sets the transition to use when switching between shots.

Replay Controls

When you select *Replay + ISO* > *Start All,* Wirecast displays the Replay controls, as shown here:

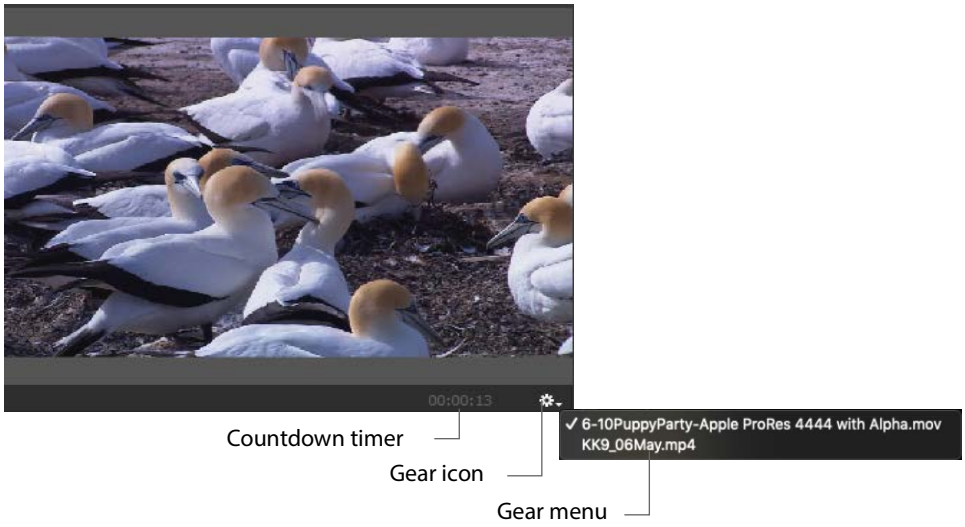


See *Creating a Replay Shot from a Layer*.

Playlist Countdown Timer Display

Wirecast displays a countdown timer below the *Preview Area* or *Live Broadcast Area* whenever you play a video shot or playlist. If you play multiple video shots, click the gear menu button and select the shot to associate with the countdown timer.

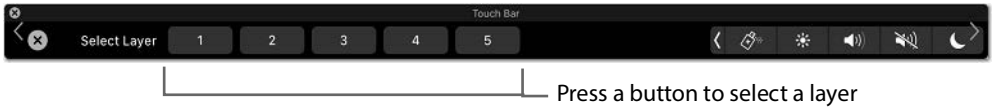
See *Selecting and Customizing Encoder Presets*.



Touch Bar (MacBook Pro only)

Note: Touch bar shot switching is only available when using a MacBook Pro equipped with a Touch Bar.

The Touch Bar switcher will appear every time a Wirecast document is the front-most window. If another window is front-most, the Touch Bar will be removed. Press a layer button to select any of the five shot layers.



The Touch Bar displays one layer at a time. The layer selection button display the layer number. You can change layers by pressing this button. The shot buttons correspond to every shot on the selected layer. The *Go* button is identical the one in the Wirecast default layout. When you change the Live/Preview Swap state, the *Go* button will

update to reflect the new mode. If Auto-live is enabled, the *Go* button will be removed from the Touch Bar.



All buttons have a fixed width so that you always have a fixed-size touch target. Wirecast truncates button titles longer than the button width. Wirecast displays a *green* LED on a shot button display if the shot is currently in the Preview window. Wirecast displays a *red* LED if the shot is currently in the Live Broadcast window. If the LED is not lit, the shot is in neither window. This mirrors the behavior of the shot list in the main Wirecast user interface. If there are more shot buttons than horizontal space allows, the shot area in the Touch Bar becomes scrollable.

Preview Area

Displays the selected shot as it would appear when broadcast, without broadcasting the shot. When the shot in the *Preview Area* is selected, Wirecast outlines the preview with a control frame for resizing and rotating the shot.

See *Viewing the Preview Area*, *Viewing a Shot in the Preview Area*, and *Resizing or Rotating a Shot*.

Live Broadcast Area

The *Live Broadcast Area* shows the un-encoded shot currently being encoded and broadcast. Also, you can play, pause, or scrub clips displayed in the *Live Broadcast Area* while they are broadcast.

See *Switching with Preview* and *Single-Click Switching with AutoLive*.

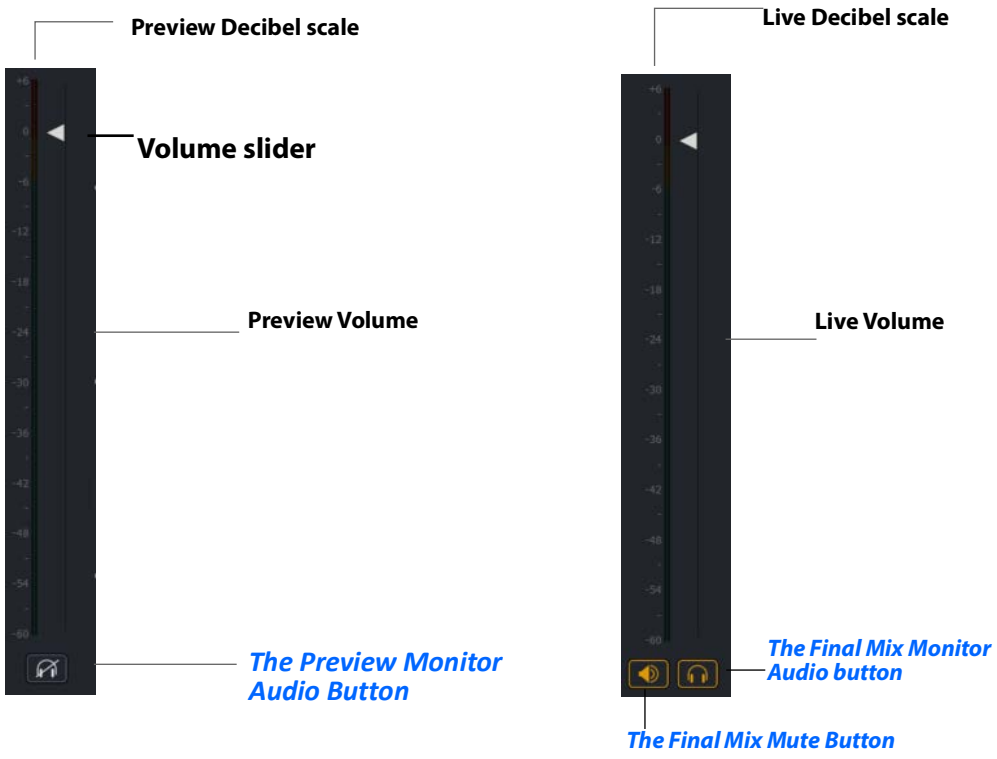
Snapshot Button

When clicked, Wirecast takes a snapshot of the *Live Broadcast Area* at canvas resolution, and saves the snapshot as a PNG file in the designated snapshot folder.

See *Live Snapshots Folder*.

Final Mix Audio Panel

The *Final Mix Audio* panel enables you to control the output volume level, mute audio output, and mute the line-out feed for Preview and Live windows. The Preview and Live Volume controls enable you to adjust the audio volume for Preview and Live separately.



The Preview Monitor Audio Button

When clicked, Wirecast mutes or un-mutes Preview playback on your computer speakers or headphones.

The *Monitor Preview Audio* button and the *Monitor Final Mix Audio* buttons control whether you hear the output audio through your headphones or computer speakers. These do not affect what your viewers can hear. You can monitor Preview or Final, but not both at the same time. You can mute both.

If you do not want to broadcast audio, modify the encoder presets to not process audio through the encoder.

See *Encoder Presets*.

The Final Mix Monitor Audio button

When clicked, Wirecast mutes or un-mutes final mix playback on your computer speakers or headphones.

The *Monitor Preview Audio* button and the *Monitor Final Mix Audio* buttons control whether you hear the output audio through your headphones or computer speakers. These do not affect what your viewers can hear. You can monitor *Preview* or *Final*, but not both at the same time. You can mute both.

If you do not want to broadcast audio, modify the encoder presets to not process audio through the encoder.

See *Encoder Presets*.

Note: All Wirecast audio meters use a consistent dBFS scale. Whether you're viewing Multiviewer audio bars or the Advanced Audio Meter, the readings use the same scale. Level indicators turn yellow when they hit -6dB and red when they move above -1dB. All indicators show when audio is clipping by turning yellow or red.

See *Controlling or Muting the Final Mix Audio Level* and *Displaying or Hiding the Final Mix Audio Panel*.

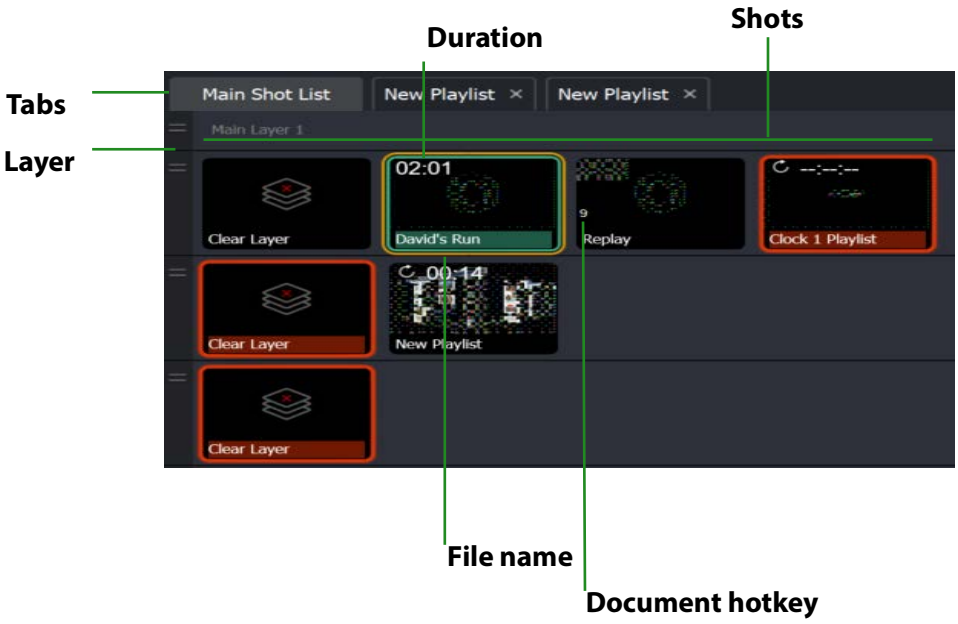
The Final Mix Mute Button

When clicked, Wirecast mutes or un-mutes the final mix output.

The *Final Mix Mute* button controls what your viewers hear. You can quickly mute all your audio output with this button. This is great for quickly muting audio on your regular broadcast. When you mute the final mix audio, the encoder still generates audio, but the output gets muted for all program audio (except ISO-recorded sources). If, alternatively, you do not want to broadcast audio at all, it's better to modify the encoder presets to not process audio through the encoder, which will save system resources.

See *Encoder Presets*.

Layers



The horizontal bars towards the bottom of the screen are the layers. You can make more layers visible. Also, you can add, modify, and play shots from the layers.

By default, Wirecast displays five layers. Each layer can contain multiple shots. A red LED indicates that a shot is Live.

Wirecast allows you to put shots on any of the layers. Layering shots enables Wirecast to superimpose them, from the lowest layer to the highest, to form a single composite visual image during broadcast.

By default, Wirecast displays five layers. Each layer contains shots that can be selected by clicking a shot. A red LED indicates that a shot is selected. When a shot is selected it is displayed in the *Live Broadcast Area*. If you select multiple shots (by selecting a shot on more than one layer) Wirecast displays all of them in the *Live Broadcast Area*.

Wirecast displays Layer 1at the top, Layer 5 at the bottom, and the other layers, in order, between them. The order of layers determines the order of superimposition in the *Live Broadcast Area*. If you place a video shot on Layer 5 and a title on Layer 1, Wirecast superimposes the title over the video.

See also *Viewing a Layer in a Layer Window*.

Add Shot Window

The *Add Shot* window provides a way to add sources, such as live sources, file sources, the Remote Desktop Presenter program, shot graphics, shot audio, and shot templates.

To open the *Add Shot* menu, in a layer, click the plus button .

When Wirecast displays the *Add Shot* menu, select a shot category, select the type of shot to add. Modify the shot if desired and allowed. To add a shot to a layer, click the plus button  in a layer.

To add a source to the *Favorites* menu, select the source and click the star icon.

Wirecast changes the color of the star to white and adds the source to the *Favorites* menu.

Video Capture

System Device

Select a system device.

See *NDI Devices in the Shot Layer Properties Tab*.

Audio Capture

System Device

Select a system device.

See *NDI Devices in the Shot Layer Properties Tab*.

System Audio Capture

Select an audio capture device.

Source Name Displays the name of the source. To change the source name, enter a new one.

Audio Delay Enter the amount of time (in seconds, as short as 1 ms) to delay the audio signal to sync it up with a video source.

Monitor Click the *Monitor* icon to cause audio to play through your monitor output. The icon is gold when selected (turned on). If unselected, audio will not play through the monitor output for this source. Selected is the default.

Media Files

Browse Disk

Select to navigate to a media file.

Stock Media Library

Select to display the Stock Media Library window.

A media file is a video clip or a picture. To open a media file source, select *Media Files* from the source menu in the shot window, and then navigate to your file. You can also click the *Add Media File* button at the bottom of the Add Shot window.

Media files have the following settings:

Source Name

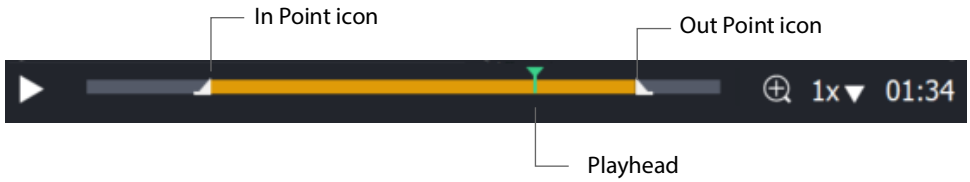
Displays the name of the source. To change the source name, enter a new one.

In Point

Click *Jump* to move the play head to the In Point in the media file. Set the In Point either by dragging the In Point icon to the desired beginning position on the play bar, or by entering a value into the In Point field.

Out Point

Click *Jump* to move the play head to the Out Point in the media file. Set the Out Point either by dragging the Out Point icon to the desired end position on the play bar, or by entering a value into the Out Point field. The green triangle shows the current location of the Play Head.



When Finished

Select what happens when the media finishes playing. *Loop* causes the media to begin playing again. *Hold* causes the media to stop and hold the last frame in the *Live Broadcast Area*. *Remove* causes the media to be removed from the *Live Broadcast Area* when it finishes playing.

Begin playing when media becomes Live

When checked, the media begins playing as soon as it is made Live.

Remember position even when not Live

When checked, the media will always start playing where ever it was playing when it was stopped, even if it was removed from the *Live Broadcast Area* and made Live again. When unchecked, the media will start from the beginning every time it is taken Live.

Set Default

Click to set the media display to default settings.

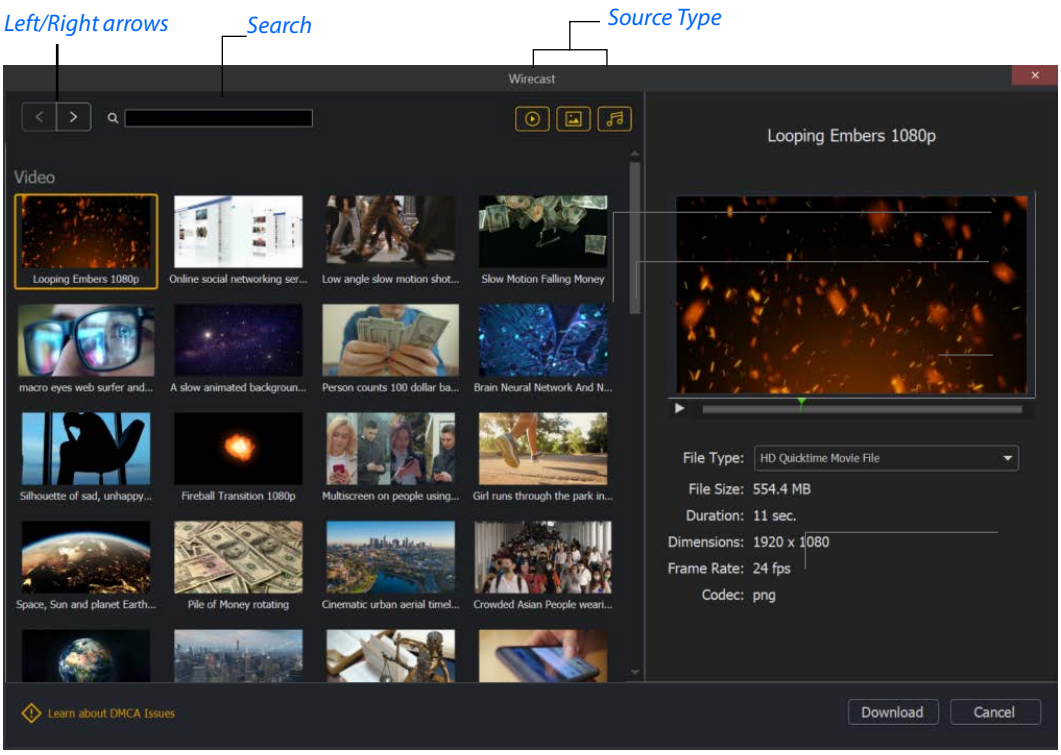
Live Playback

Changes are live. When you select this option and your shot is live, Wirecast displays any action you take in the *Preview Area*--such as playing, pausing or scrubbing--in the *Live Broadcast Area*, and broadcasts the action live.

Note: If you use this feature to pause or scrub media in the live broadcast, it's usually best to uncheck *Begin playing when media becomes live*.

Stock Media Library

When clicked, *Stock Media Library* opens the *Stock Media Library* window.



Source Type

You can toggle on/off any type of media to include in the display: Video, Images, and Audio.

Search

Enter key words to display just the media files including these words. The display is updated as your enter words.

Left/Right arrows

Click the arrows to move to the next or previous set of Stock Media files.

Play button

Click to begin playing the selected media file.

File marker

Move the marker to view the media file quickly.

Download button

Click to download the selected media file into a shot.

See *Adding Media Files from the Stock Media Library to a Shot*.

Network

iOS Cam

Select an IOS Camera device, or an iOS camera through the Wirecast Go iOS app.

Rendezvous

Select to create a new Rendezvous session, or select to reconnect to a previously created session.

Web Page

Creates a new web page shot.

See *Web Page Properties*.

Web Stream

Creates a new Web Stream shot.

See *Web Stream Properties*.

NDI(R) Source

Select any NDI-capable devices on your network.

Web Page Properties

Web Page shows a web source defined by a web address (URL). To open a web page source, select *Web Page* from the source menu in the shot window. *Web Page Properties* have the following settings:

Name

Displays the name of the source. To change the source name, enter a new one.

Audio Delay

Enter the amount of time (in seconds, as short as 1 ms) to delay audio.

Video Delay

Enter the amount of time (in seconds, as short as 1 ms) to delay video.

URL

Displays the web address (URL) of the source. To change the address, enter a new one.

Width/Height

Displays the width and height of the display source. To change the width or height, enter a new value.

Go Back/Go Forward

If you have enabled *Interaction* on your web page, these buttons allow you to go back or go forward just as you would in a browser.

Transparent Background

Check to make the background transparent in your shot.

Shutdown when inactive

Check to turn off the audio and disable it from the shot when playing videos.

Override CSS

Enter Cascading Style Sheet code to override the default code for this web display.

Interaction

Allows you to choose how you want to interact with your web page in the *Preview* window. Choices are *Never*, *Always*, or *On Double-click*.

Monitor

Click the *Monitor* icon to cause audio to play through your monitor output. The icon is gold when selected (turned on). If unselected, audio will not play through the monitor output for this source. *Selected* is the default.

Web Stream Properties

The *Web Stream* option allows RTMP, RTSP, MMS, or HTTP streams to be taken directly into Wirecast. This is useful for incorporating remote IP Cameras or other network streams into a broadcast. Sources are automatically detected and are also identified by *IP Camera Profile*. To open a Web Stream source, select *Web Stream* from the source menu in the shot window.

Web Stream Properties has the following settings.

Name

Displays the name of the source. To change the name, enter a new one.

Audio Delay

Enter the amount of time (in seconds, as short as 1 ms) to delay audio.

Video Delay

Enter the amount of time (in seconds, as short as 1 ms) to delay video.

URI

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

Username

Enter your username for your URI stream.

Password

Enter your password for your URI stream.

Buffer

Enter a buffer time in seconds.

Reconnect

Click to reconnect the web stream source.

Apply

Click the *Apply* button to update any changes.

Timestamps

Select *Provided by source*, or *Provided by* Wirecast. This setting allows you to use timestamps embedded in the source, or use timestamps generated by Wirecast. Timestamps are used to synchronize devices. Many sources don't provide completely accurate timestamps, resulting in sources out of sync with each other (i.e. audio and video not syncing).

Select *Provided by* Wirecast to ignore the timestamps coming from the source, and instead generate new timestamps. However, the risk is that if the system is under a heavy load, the generated timestamps could be impacted, and end up arriving late. The default setting is *Provided by source*.

See Wirecast: Timestamps Option.

Deinterlacing

Select *None*, or *Blend Fields*.

Dynamic Range

Select *Default, Full* or *Limited*.

Monitor

Click the *Monitor* icon to cause audio to play through your monitor output. The icon is gold when selected (turned on). If unselected, audio will not play through the monitor output for this source. Selected is the default.

Screen Capture

Remote Desktop Presenter

Creates a new Remote Desktop Presenter shot.

See *Remote Desktop Presenter Properties*.

Screen Capture

Creates a new screen capture shot of any monitor or window on your computer. You can also capture your iPhone or iPad in Wirecast by connecting your device using an Apple certified lightening cable, and then adding it as a source by selecting *Screen Capture* from the Source menu.

See *Screen Capture Properties*.

Note: When in screen-capture mode, some apps take control of your mouse and make the cursor invisible. To reduce the capture window size and regain use of your mouse, press command + Tab.

Remote Desktop Presenter Properties

The *Remote Desktop Presenter* (RDTP) is a utility application that enables Wirecast to broadcast the desktop of any computer running the Telestream Desktop Presenter program. To open a Remote Desktop Presenter source, select *Remote Desktop Presenter* from the source menu in the shot window.

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

Remote Desktop Presenter Properties has the following settings.

Source Name

Displays the name of the source. To change the source name, enter a new one.

Audio Delay

Enter the amount of time (in seconds, as short as 1 ms) to delay audio.

IP Address

Enter an IP address of the target computer.

Apply

Click the *Apply* button to update any changes.

Monitor

Click the *Monitor* icon to cause audio to play through your monitor output. The icon is gold when selected (turned on). If unselected, audio will not play through the monitor output for this source. *Selected* is the default.

Screen Capture Properties

A screen capture displays any monitor or window on your computer. To open a screen capture source, select *Screen Capture* from the source menu in the shot window. Screen captures have the following settings:

Name Displays the name of the source. To change the source name, enter a new one.

Audio Delay Enter the amount of time (in seconds, as short as 1 ms) to delay audio.

Video Delay Enter the amount of time (in seconds, as short as 1 ms) to delay video.

Capture Video Check to enable *Capture Type*, *Show Cursor,* and fps settings (described below).

Capture Type Select *Monitor* (captures your entire monitor), *Window* (captures the currently selected window), or *Game* (captures the game currently played on your PC). If you select *Game*, you can also configure how your game is captured by selecting options offered under *Select Window/Monitor* (described below).

Anti Cheat Support Enables anti-cheating support for game capture.

Show Cursor Check to show the cursor in your streaming. Uncheck to hide it.

fps Select the FPS, from 10 to 60 frames per second as the capture rate. An FPS of 60 is the best frame rate, but it requires greater streaming bandwidth.

Capture System Audio Check to capture system audio when streaming. Uncheck to mute the audio.

- **Select Window/Monitor** Click the *Configure* button to display the *Select Window* dialog.

Choose Audio Device Click the *Configure* button to display the *Select Audio Device* dialog, then select an audio device from the drop-down menu.

Note: Some apps, when screen captured, take control of your mouse and the cursor is not displayed. You can, at any time, press command + Tab keys to reduce the capture window size and enable you to use your mouse.

Dynamic Range Select dynamic range setting: *Default*, *Full* or *Limited*.

Monitor Click the *Monitor* icon to cause audio to play through your monitor output. The icon is gold when selected (turned on). If unselected, audio will not play through the monitor output for this source. *Selected* is the default.

See *Screen Capture*.

Overlays

Clock

Creates a shot that displays time.

See *Clock Properties*.

Image Carousel

Creates a new image carousel shot that shows a sequence of images.

See *Image Carousel Properties*.

QR Code Generator

Creates a QR code display to present to your viewers in a live broadcast.

See *QR Code Generator Properties*.

Scoreboard

Creates a new scoreboard shot.

See *Scoreboard Properties*.

Social Media Title

Opens a selector for *Social Media Titles*.
See *The Comment Moderation Window*, and *Social Media Shots*.

Text

Creates a new text shot.

See *Text Shot Properties*.

Title

Opens a dialog for adding titles and lower thirds. In the dialog, you can see the available title designs in a continually growing library of title designs. You can search for a title and filter your search using various criteria. You can preview the intro and outro animation, and you see how the title fits on the screen.

You can revise titles in your project in the *Title Properties* tab.
If your project contains titles made with earlier versions of Wirecast, those legacy titles continue to appear in your project. To access the legacy titles, click the three dots in the upper-right corner of the *Add Source* dialog, and choose *Display Deprecated Sources*. Wirecast displays the names of animated titles with *Title...* at the beginning. Wirecast displays the names of legacy titles with *Title (legacy)* at the beginning.

See *Titles (Animated) Properties*.

Text Shot Properties

Text displays a text phrase. To open a text source, select *Text* from the source menu in the shot window. *Text Properties* have the following settings.

Name

Displays the name of the source. To change the *Source Name*, enter a new one.

Width/Height

Displays the width and height of the display source. To change the width or height, enter a new value.

Mode

Select the source of your text: *Text* (directly entered) or *File* (navigate to a text file), or *RSS* (ticker tape RSS feed).

If you select *Text*, enter your text in the text box below the source selector.

If you select *File*, enter a file name in the File Path box displayed, or click the navigation button (three dots) and find your text file. The text from your file will be automatically displayed. The file has to contain UTF-8 encoded text in order for it to be rendered correctly. Only the first 64KB of the text file will be loaded and displayed. You can also check *Keep reading text file continuously* to keep the text display in your broadcast up to date with file changes.

If you select *RSS*, enter a URL in the URL box displayed.

Text

Enter text to display.

File

Click the (...) icon to navigate to the file containing text to display.

RSS URL

Enter the RSS URL where the text to be displayed is located.

Update frequency

Enter the number of seconds between updates.

Keep reading text file

Check to keep reading the text file for changes.

Font

Select the desired font used for your messages. If you select *Web Font*, a *Web Font* field will display below. You can also select any of the fonts installed on your computer.

Face

Select the font style from the list of combination of bold and italic.

Size

Enter the font size. Click the gear icon to select the type of font size: small, medium, large, etc.

Justify

Enables you to justify the text along the left, center, or right side of the display.

Align

Enables you to align the text at the top, middle, or bottom of the display.

Color

Click the box to open the color selection panel. Select a new text color from the palette.

Wrap

Select wrap mode from the drop-down menu: *Word Wrap* or *Break Wrap*.

Scroll

Enter a scroll mode: *Non Stop* or *If it Does Not Fit*.

Background

Select *Solid, Linear Gradient* (line), or *Radial Gradient* (circle). Click in the color box to open the color palette and select a background color. Click the second color box to select the gradient color. For *Linear Gradient*, adjust the slider to set the angle of the gradient display.

Shadow

Check to activate the text shadow slider controls. Click the color box to open the color palette.

Angle

Move the *Angle* slider to adjust the direction (0 to 360 degrees) the shadow text is offset from the actual text.

Offset

Move the slider to adjust the distance the shadow text is offset away from the actual text.

Blur

Move the *Blur* slider to adjust the amount of blur in the shadow text.

Titles (Animated) Properties

A title is text displayed in a banner window. Wirecast offers a wide variety of animated lower thirds and titles. To open a title source, select *Title...* from the *Add Source* menu.

Animated titles have the following settings:

Left/Right arrows

Click to view the previous page, or next page, of titles.

Search

Enter name of title desired.

Filters

Click to open options for filtering your view of the titles.

Scale to Fit/Show Preview

Click to view either the title scaled to the whole screen or placed in its live position.

Tags

Displays identifying tags for the title.

Lines of Text

Displays the number of lines of text in the title.

Custom Colors

Displays the number of custom colors in the title.

Intro Duration

Displays the length of the intro animation.

Animate Intro

Click to preview either the intro animation.

Outro Duration

Displays the length of the outro animation.

Animate Outro

Click to preview the outro animation.

Note: Some title styles have customization sections for Subhead 1 and Subhead 2.

Title (legacy) Properties

Note: To access legacy titles, in the *Add Shot* dialog, click the three vertical dots at the top right corner of the box. Then select *Show Deprecated Sources*.

Legacy titles have the following settings:

Name

Displays the name of the source. To change the Source Name, enter a new one.

Width/Height

Displays the width and height of the display source. To change the width or height, enter a new value.

Mode

Select the source of your text: *Text* (directly entered) or *File* (navigate to a text file), or *RSS* (ticker tape RSS feed).

If you select *Text*, enter your text in the text box below the source selector.

If you select *File*, enter a file name in the *File Path* box displayed, or click the navigation button (three dots) and find your text file. The text from your file will be automatically displayed. The file has to contain UTF-8 encoded text in order for it to be rendered correctly. Only the first 64KB of the text file will be loaded and displayed. You can also check the Keep reading text file continuously to keep the text display in your broadcast up to date with file changes.

If you select *RSS*, enter a URL in the URL box displayed.

Text

Enter text to display.

File

Click the "..." icon to navigate to the file containing text to display.

RSS URL

Enter the RSS URL where the text to be displayed is located.

Update frequency

Enter the number of seconds between updates.

Font

Select the desired font used for your messages. If you select *Web Font*, a *Web Font* field will display below. You can also select any of the fonts installed on your computer.

Face

Select the font style from the list of combination of bold and italic.

Size

Enter the font size. Click the gear icon to select the size of font.

Style

Select any combination of Bold, Italic, All Caps, by toggling each button.

Justify

Enables you to justify the text along the left, center, or right side of the display.

Align

Enables you to align the text at the top, middle, or bottom of the display.

Color

Click the box to open the color selection panel. Select a new text color from the palette.

Wrap

Select wrap mode from the drop-down menu: *Word Wrap* or *Break Wrap*.

On Change

Select transition type: Fade, Drop In, Drop Out, and Slide. Enter the length (in seconds) of the transition time.

Scroll

Enter a scroll mode: *Non Stop* or *If it Does Not Fit*.

Direction

Select the direction of the scrolling: *Top to Bottom*, *Bottom to Top*, *Left to Right*, or *Right to Left*.

Speed

Enter the speed (in pixels per second) that you want your message to scroll through the display.

Auto Reverse

When checked, the display reverses the scrolling direction when it reaches the top or bottom of the list.

Background

Select *Solid, Linear Gradient* (line), or *Radial Gradient* (circle). Click in the color box to open the color palette and select a background color. Click the second color box to select the gradient color. For *Linear Gradient*, adjust the slider to set the angle of the gradient display.

Shadow

Check to activate the text shadow slider controls. Click the color box to open the color palette.

Angle

Move the *Angle* slider to adjust the direction (0 to 360 degrees) the shadow text is offset from the actual text.

Offset

Move the slider to adjust the distance the shadow text is offset away from the actual text.

Blur

Move the *Blur* slider to adjust the amount of blur in the shadow text.

Twitter Feed (legacy) Properties

Twitter Feed displays a list of X (formerly Twitter) messages.

Note: To access legacy X (formerly Twitter) feed posts, in the *Add Shot* dialog, click the three vertical dots at the top right corner of the box. Then select *Show Deprecated Sources*.

Twitter Feed Properties has the following settings:

Name

Displays the name of the source. To change the source name, enter a new one.

Width/Height

Displays the width and height of the display source. To change the width or height, enter a new value.

Mode

Select the source of your text: *Text* (directly entered) or *File* (navigate to a text file), or *RSS* (ticker tape RSS feed).

If you select *Text*, enter your text in the text box below the source selector.

If you select *File*, enter a file name in the *File Path* box displayed, or click the navigation button (three dots) and find your text file. The text from your file will be automatically displayed. The file has to contain UTF-8 encoded text in order for it to be rendered correctly. Only the first 64KB of the text file will be loaded and displayed. You can also check the *Keep reading text file continuously* to keep the text display in your broadcast up to date with file changes.

If you select *RSS*, enter a URL in the URL box displayed.

Text

Enter text to display.

File

Click the "..." button to navigate to the file containing text to display.

RSS URL

Enter the RSS URL where the text to be displayed is located.

Update frequency

Enter the number of seconds between updates.

Font

Select the desired font used for your messages. If you select *Web Font*, Wirecast displays a *Web Font* field below. You can also select any of the fonts installed on your computer.

Face

Select the font style from the list of combination of bold and italic.

Size

Enter the font size. Click the gear icon to select the size of font.

Justify

Enables you to justify the text along the left, center, or right side of the display.

Align

Enables you to align the text at the top, middle, or bottom of the display.

Color

Click the box to open the color selection panel. Select a new text color from the palette.

Wrap

Select wrap mode from the drop-down menu: *Word Wrap* or *Break Wrap*.

Scroll

Enter a scroll mode: *Non Stop* or *If it Does Not Fit*.

Background

Select *Solid, Linear Gradient* (line), or *Radial Gradient* (circle). Click in the color box to open the color palette and select a background color. Click the second color box to select the gradient color. For *Linear Gradient*, adjust the slider to set the angle of the gradient display.

Shadow

Check to activate the text shadow slider controls. Click the color box to open the color palette.

Angle

Move the *Angle* slider to adjust the direction (0 to 360 degrees) the shadow text is offset from the actual text.

Offset

Move the slider to adjust the distance the shadow text is offset away from the actual text.

Blur

Move the Blur slider to adjust the amount of blur in the shadow text.

Scoreboard Properties

PRO

Scoreboards allow you to add a scoreboard graphic to your broadcast that can be dynamically updated. Multiple scoreboards can be added. Unlike most other elements in Wirecast, changes to the scoreboard go live instantly without requiring a transition. Once the scoreboard is live, the preview image is exactly as it is seen in your broadcast. To open a scoreboard source, select *Scoreboard* from the source menu in the shot window.

Scoreboards Properties has the following settings.

Source Name

Displays the name of the source. To change the *Source Name*, enter a new one.

Scoreboard

Select how the scoreboard will look using two drop-down menus. The upper menu selects the scoreboard style: *Pipe*, *Shade*, *Corner*, etc. The lower menu selects how the display fields are laid out: *Basic*, *Right Stats*, or *Bottom*.

Home/Visitor/Score

The *Home*, *Visitor*, and *Score* fields contain the home and visitor team names and their current score. The three icons to the right of these fields control the text alignment, font size, and font color. Click on each icon to open its control window.

BG Color

Sets the background color for the *Home* or *Visitor* field display. Click the color icon to open the control window.

+1, +2, +3

Click these score increment buttons to increase the *Home* or *Visitor* score display.

Field 1-4

Displays information inside the scoreboard depending on the layout chosen using the scoreboard menus. The three icons to the right of these fields control the text alignment, font size, and font color. Click on each icon to open its control window.

Use a Custom Image

Check to enable the *Choose* button.

Choose

Click to navigate to the location of your custom image.

Reset

Click to remove a custom image.

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

There are four keyboard shortcuts associated with the scoreboard.

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

In order for these keyboard shortcuts to be active, the scoreboard must be displayed in the *Live Broadcast Area* and the Wirecast default layout must be in focus (selected as the active window).

See *Application Shortcuts and Document Hotkeys*.

Clock Properties

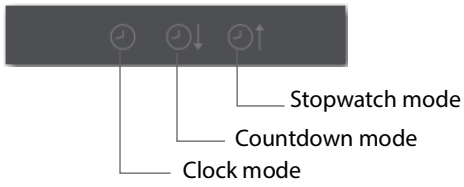
A clock shot displays time. *Clock Properties* has the following settings.

Name

Displays the name of the source. To change the source name, enter a new one.

Clock Modes

Select *Clock, Countdown*, or *Stopwatch*.



Clock Mode:

Date Select a date display format.

Time Select a time display format.

Countdown Mode:

Mode Select *Countdown from* or *Countdown to.*

Start Time

Enter the time value from which to start counting.

Start/Stop/Resume and Reset

Click *Start* to start the counter. When counting, click *Stop* to stop the counter. When stopped, click *Resume* to start counting again, or click *Reset* to rest the counter.

Automatically Start

When checked, the counter will start when the shot is taken live.

Format

Select one of the time-display formats from the drop-down menu.

Start, Stop, Reset

Click *Start* to begin counting down. Click *Stop* to end counting down. Click *Reset* to reset clock to Timer value.

At Zero

Select either *Stop at 00:00* or *Start count up clock*.

Stopwatch Mode:

Start, Stop, Reset

Click *Start* to begin counting. Click *Stop* to end counting. Click *Reset* to reset stopwatch to zero.

Display Format

Select time elements to display: Hours, Minutes, Seconds, and Fractional Seconds.

Font

Select font from drop-down menu.

Face

Select face from drop-down menu.

Size

Click the gear icon to select the font size from the menu.

Background

Select *Solid, **Linear Gradient*** (line), or *Radial Gradient* (circle). Click in the color box to open the color palette and select a background color. Click the second color box to select the gradient color. For *Linear Gradient*, adjust the slider to set the angle of the gradient display.

Shadow

Check to activate the text shadow slider controls. Click the color box to open the color palette.

Angle

Move the Angle slider to adjust the direction (0 to 360 degrees) the shadow text is offset from the actual text.

Offset

Move the slider to adjust the distance the shadow text is offset away from the actual text.

Blur

Move the Blur slider to adjust the amount of blur in the shadow text.

Image Carousel Properties

An image carousel shot shows a sequence of images. *Image Carousel Properties* has the following settings:

Name

Displays the name of the source. To change the source name, enter a new one.

Width/Height

Displays the width and height of the display source. To change the width or height, enter a new value.

Change Every

Sets how often the images are changed, in seconds.

Fade-In Time

Sets how long it takes for each image to fade in, in seconds. Enter zero for instantaneous display of images.

Shuffle Images

Check to shuffle the display order of the images. When unchecked, images are displayed as they are ordered in the image list.

Add/Delete/Move Images

Click the plus (+) button to find and add images. Select an image on the list and click the minus (-) button to delete it. You can move images up and down the list by selecting an image and clicking the up or down arrow.

QR Code Generator Properties

QR Code Generation has the following settings:

Source Name

Displays the name of the source. To change the source name, enter a new one.

Video Delay

Enter the amount of time (in seconds, as short as 1 ms) to delay video.

Content

Enter the message you want to be embedded in the QR code displayed in your broadcast.

Deinterlacing

Select *None*, or *Blend Fields*.

Backgrounds

Web Page

Creates a new web page shot.

See *Web Page Properties*.

Solid Color

Creates a new solid color shot.

See *Solid Color Properties*.

Solid Color Properties

Solid Color displays a solid color background. To open a solid color source, select *Solid Color* from the source menu in the shot window. *Solid Color Properties* has the following settings:

Name

Displays the name of the source. To change the *Source Name*, enter a new one.

Width/Height

Displays the width and height of the display source. To change the width or height, enter a new value.

Background

Select *Solid, Linear Gradient* (line), or *Radial Gradient* (circle). Click in the color box to open the color palette and select a background color. Click the second color box to select the gradient color. For *Linear Gradient*, adjust the slider to set the angle of the gradient display.

Templates

Shot Template

Select *Templates* from the *Add Shot* menu.

When Wirecast displays the *Templates* window, select a template.

Wirecast displays the new template shot in the *Shot Editor*.

- Placeholder Shot

  See *Assigning Media to Placeholders*.

- Virtual Set Properties

PRO

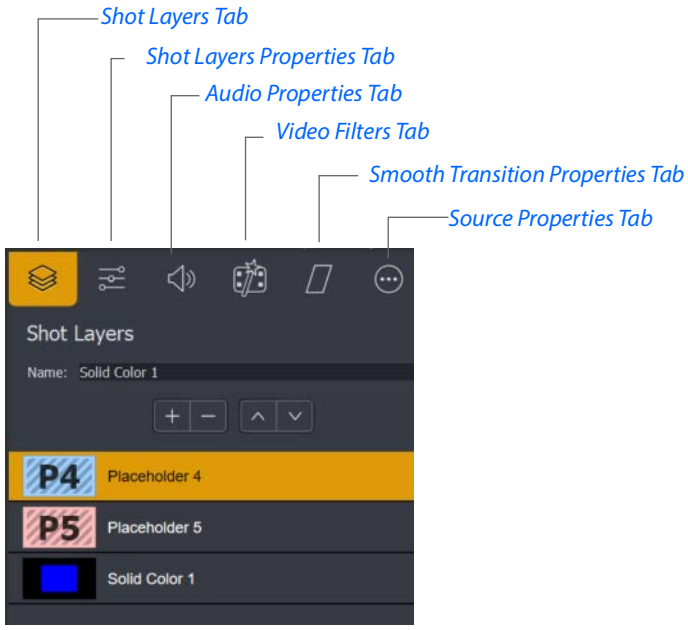
A *Virtual Set* is a pre-built source set, complete with graphics, that simulates a news-anchor set. For example, you can select a virtual set that displays three layers of decor with two live sources. You can use virtual sets as they are, or you can customize them to meet your needs.

Virtual Sets has the following setting.

– **Source Name** Displays the name of the source. To change the source name, enter a new one.

The Shot Editor Window

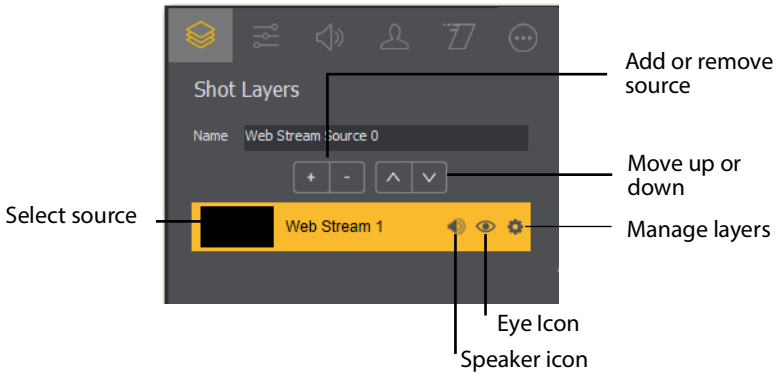
The shot editor has six tabs: *Shot Layers*, *Shot Layers Properties*, *Audio Properties*, *Video Filters*, *Smooth Transition Properties*, and *Source Properties*.



Shot Layers Tab

Enables you to add and delete sources and to change the order of layering within the shot. The *Shot Layers* tab lists all of the layers in the shot.

Note: Source icons appear only when you hover over them.



See *Adding, Deleting, or Rearranging Layers in a Shot*.

Shot Layer Sizing Buttons

You can display shot layers in small, medium, or large sizes, by clicking the respective shot-sizing button  at the bottom-left of the *Shot Layers* tab.

Replay Layer

PRO

The replay layer is a placeholder layer that can be added to any shot for the purpose of creating a replay template shot. Once the shot is selected in *Replay Settings*, it can be used as a template for any created replay shot.

See *Creating a Replay Shot from a Layer*.

Shot Layers Properties Tab

Enables you to change the size, position, and other properties of a shot. The various controls on the *Shot Layer Properties* tab are described below.

Position

Displays the position of the selected source in your shot. Position "0 0" represents the middle of the shot area. To move a source, enter new location values.

Size

Displays the size of the selected source in your shot. To resize a source, enter new size values.

 **Gear button**

When clicked, Wirecast lets you select how to size the bounding box: by pixels or by percentage.

Scale Jog Wheel

When the jog wheel is dragged left or right, Wirecast changes the scale of the bounding box.

 **Scale to Fit Button**

When clicked, Wirecast expands the source to its maximum size on the canvas. This might distort the display of the source depending on the option selected in *Fill*.

See *Fill*.

 **Reset Position Button**

When clicked, Wirecast restores the source to its original scale and rotation.

Fill

The *Fill* drop-down menu offers these ways to fill the bounding box with the image:

- *Lock Aspect Ratio* fills the bounding box until one side hits an edge. Respects the aspect ratio, and doesn't crop the image.

- *Lock and Fill Width* fills the bounding box to its width. Respects the aspect ratio. If the bounding box height is less than the image height, the top and bottom of the image are obscured. If the bounding box height is greater than the height of the image, Wirecast displays the image letterboxed.
- *Lock and Fill Height* fills the bounding box to its height. Respects the aspect ratio. If the bounding box width is less than the image width, the sides of the image are obscured. If the width of the bounding box width is greater than the width of the image, Wirecast displays the image pillar-boxed.
- *Stretch to Fill* fills the bounding box. Does not respect aspect ratio. If the image dimensions don't match the bounding box dimensions, the image is distorted.

Note: The *Fill* feature is not active in Clock, Text, Solid, QR Code or Web Page shots. In these shots the image automatically stretches to fill the bounding box.

X Y Z Rotation

Slide the X (Horizontal), Y (Vertical), or Z (Straight-through) axis sliders to rotate the source.

See *Reset, under Crop*.

Opacity

Slide the *Opacity* slider to adjust the degree of transparency of your image.

Reflection

Slide the *Reflection* slider to adjust the degree of reflection below your image.

Border

The border controls enable you to add a border around a video layer, and to control the parameters of the border.

Note: When a smooth transition is applied, Wirecast interpolates the values of the border group over the transition period.
Wirecast applies the matte before applying any border, feathering, corner radius, or cropping. Then, Wirecast applies any cropping.
Finally, Wirecast applies the border, feathering, and corner radius parameters.

Descriptions of the border controls follow.

- *Width* The *Width* slider controls the thickness of the border, in pixels. Wirecast places the border around the rectangle of the layer. The border doesn't follow the edges of an input in an alpha channel, such as content in a chroma key.
- *Align Type* lets you determine where to align the border: with *Inner* the border cuts into the content, with *Center* the border sits across the center of the layer bounds, and, with *Outer*, the border sits outside the bounds.
- *Color* sets the color of the border with a standard color picker. The default is white, which provides the greatest contrast with the black background.

- *Corner Radius* specifies the radius of the corners from 0% to 100%. The corner mask hides the corners of the layer. This control works independently from the *Width* slider. You can apply the corner mask to any layer, regardless whether a border width has been specified.
- *Feather* specifies the amount of feathering, from 0% to 100%. Feathering provides an alpha ramp around the edges of the layer. This control works independently from *Width* and *Corner Radius*. Feathering smooths edges. You can use feathering to generate a vignette effect on a layer.
- *Matte* A matte is a mask over a shot. Select a matte by clicking the down-arrow on the *Matte* menu. The default is *No Matte*. You can also use any media file as a *custom* matte. To do this, create a new shot of the media file you want to use as a matte. This file now appears in the *Matte* drop-down menu where you can select it.

Crop

Clicking the *Crop* triangle opens the cropping adjustment pane. Slide the *Left*, *Right*, *Top*, and *Bottom* sliders to crop your source image.

- *Gear* button When clicked, Wirecast opens a menu of adjustment increments, allowing you to adjust the crop parameters either by a number of pixels or by percentage.
- *Reset* When clicked Wirecast resets the crop controls to their default settings.

Color

When clicked Wirecast opens the color adjustment pane. Slide the color controls to adjust the color.

- *Reset* When clicked, Wirecast resets the color controls to their default settings.

Drop Shadow

Click the *Drop Shadow* triangle to open the *Drop Shadow* adjustment pane. Check the checkbox to enable the controls.

- *Color* Click in the color field to open the color palette. Select a shadow color and luminance by sliding the vertical and horizontal sliders. Click outside the color edit box to close the palette.
- *Angle* Move the Angle slider to adjust the direction (0 to 360 degrees) the shadow text is offset from the actual text.
- *Offset* Move the slider to adjust the distance the shadow text is offset away from the actual text.
- *Opacity* Slide the Opacity slider to adjust the degree of transparency of your source.
- *Blur Size* Move the slider to adjust the amount of blur in the drop shadow.
- *Use As Defaults* Click to set the current drop shadow configuration as the default setting. All future enabled drop shadows will be set this by default. Clicking this button does not retroactively update previously created shots. Drop shadow settings on individual shots still can be changed.

- *Reset* Click to restore the drop shadow settings back to the default values. You can also restore the drop shadow settings to Wirecast application defaults by holding the Shift key down and clicking *Reset*.

PTZ

Click the PTZ triangle to open the PTZ control panel.

- *Preset* Check the *Preset* box to select a PTZ preset.
-  *Up-arrow and down-arrow buttons* Click the up and down arrows to find a PTZ preset to recall.
-  *Right-pointing arrow button* Click the right-pointing arrow button to apply the PTZ preset.
- *Show PTZ Controller* Click to display the PTZ Controller panel.

  See *The PTZ Controller Panel* and How to Scale a Shot.

PTZ Control in the Shot Layer Properties Tab

You can select PTZ Controller presets associated with a shot layer video source from the *Shot Layer Properties* tab of the Preview Inspector. You configure PTZ Control Presets in the PTZ Controller Panel.

To expand the PTZ control panel, click the PTZ triangle. To enable preset recall, check the *Enable* box. To select a preset, enter a preset number or click the up/down arrow buttons. Click the *Go* button (right pointing arrow) to cause the associated PTZ camera to recall that preset.

Once you have configured a shot layer with a PTZ Preset, sending that shot to preview recalls the preset for the camera. If multiple shots share the same video source with different PTZ Presets configured, the shot which is currently live takes precedence over subsequent PTZ Preset recall actions, until you drop the shot from the live feed.

When you enable *Preset*, clicking *Show PTZ Controller* opens the PTZ Controller panel.

See *Shot Layers Properties Tab*.

NDI Devices in the Shot Layer Properties Tab

If you have selected an NDI source, the *NDI Source Properties* tab will display. In addition to the controls above, an NDI source has the following controls:

Video Delay

Enter the amount of time (in seconds, as short as 1 ms) to delay video.

Bandwidth

Select the bandwidth to use: *Highest* (max quality), *Lowest* (max efficiency), or *Audio Only* (video bandwidth not applicable).

GPU Decoding

When checked, incoming sources will use your GPU to process the incoming source.

Timestamps

Select *Provided by source*, or *Provided by* Wirecast. This setting allows you to use timestamps embedded in the source, or use timestamps generated by Wirecast. Timestamps are used to synchronize devices. Many sources don't provide completely accurate timestamps, resulting in sources out of sync with each other (i.e. audio and video not syncing).

Select *Provided by Wirecast* to ignore the timestamps coming from the source, and instead generate new timestamps. However, the risk is that if the system is under a heavy load, the generated timestamps could be impacted, and end up arriving late. The default setting is *Provided by source.*

Deinterlacing

Select *None*, or *Blend Fields*.

Dynamic Range

Select *Default, Full* or *Limited.*

Monitor

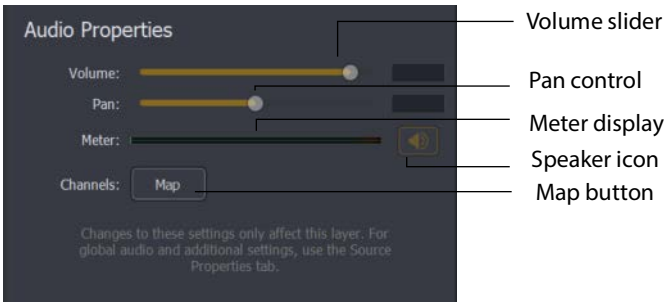
Check the *Monitor* check box to cause audio to play through your monitor output. If the check box is unchecked, audio will not play through the monitor output for this source. *Checked* is the default.

Note: NDI networking requires that your network has port 5353 open for mDNS device discovery, as well as one port per video channel (starting from port 5960 and onward) transmitted by an NDI source, plus one additional port for messaging.

See *PTZ Cameras and Controls*.

Audio Properties Tab

The *Audio Properties* tab enables you to control and monitor audio. You can set the audio level, mute and monitor the audio, and map channel outputs.



Volume

Adjust the slider to set the audio volume level.

Pan

Adjust the slider to pan between left and right audio.

Meter

Monitors the audio level. You can also mute the audio by clicking the audio icon.

Speaker Icon

Click to mute the audio output. Icon turns gray when muted. Click the icon again to un-mute the audio.

Channels

Select left (L) or right (R) for each channel. Adjust volume slider for each.

Apply to All

Click to apply the current settings to every instance of the selected source. If you have any shot specific configurations in other shots, they will be changed to match what was configured when you click this button. This action cannot be undone!

Set as Default

Click to take the current settings and set them as the default configuration. Any time this source is added to a shot in the future, it will be created with this configuration.

Reset

Click to reset the default settings. This is useful if you have made changes to the default custom settings, but want the defaults set back to the factory default settings. Factory defaults are: Chan 1 = Left; Chan 2 = Right; additional channels are unassigned.

Map

Click to open the audio mapping window. Check a square to map an audio channel to an audio track. Any audio can be tracked to any or all tracks. However, you will typically assign a group of channels to one track and other groups to other tracks.

If you have created a shot using a 16 input device, the mapping window will display all 16 channels.

Note: Although SDI supports 16 discrete audio channels, Wirecast Pro video out currently only supports two channels.

The audio track that is actually used is selected from the *Audio Track Selection* menu in the *Output Settings* window. You can select only one track. However, if you are recording, you can select multiple audio tracks.

Video Filters Tab

Enables you to configure video filter settings for a shot on a layer.

Plus (+) Button

When clicked, Wirecast opens a menu of filter selections. Selecting a filter opens a control panel for the filter selected, described as follows:

Chroma Key

Chrome key enables you to replace all areas of a selected color with a background image. For example, you can replace the green in a traditional background green screen with an image. The image appears in the background instead of the color green.

The *Chroma Key Properties* tab enables you to turn chroma keying on or off, and to make chroma key adjustments. Check the *Use* box and+ select the type of use: *Chroma*, *Luma*, or *Color Key*.

Color

Click the color square to open the *Color Pallet*. Select a color to use as the chroma key color and click *OK*. Click the dropper icon to use your mouse to select a chroma key color from your screen. Hover over the a desired color in the selected source, and click the left mouse button to select that color. All adjustments will be made using the selected color as the key.

Key Threshold

Move the slider to adjust how far away from your chosen chroma color you want to enable keying. The farther right you move the slider the more variation to the color it accepts.

Black Clip

The *Black Clip* slider allows you to define what is considered "black". When slider is fully left, you have a very thin definition of what black is. The farther to the right you go, you start adding more cases of what we consider "black'". In chroma key, rarely do you want to bump the far left side to the right.

White Clip

The *White Clip* slider allows you to define what is considered "white". Slide both all the way to the right, for a very thin definition of white. The more you increase the range, the more you add to what you consider to be full intensity brightness. In chroma key, rarely do you want to bump the far right side to the left.

Spill Suppression

This slider says: anything that is near green, bump it away from green. Move this slider to help take away the green reflection it locates on an edge. This will take everything that's green, and take away its greenness.

Solidify

This slider says: if all the pixels around me seem to be part of the key, then bump up my probability of being part of the key. This tends to "solidify" your key. Move the slider to the right to bump up the alpha values for pixels surrounded by high alpha values. One disadvantage is that the hair on a subject may appear more "blocked" in nature.

Edge Coloring

Move the slider to adjust the level of edge coloring which pull colors from inside of keyed object to get rid of halo on an image.

Display

Select display: result of keying, white-alpha channel, or black-alpha channel. This can be helpful to get key parameters set correctly.

Luma Key

This lets you key based on its brightness (or Luma value). You have an icon with a white background - and you want to get rid of the white background.

Black Clip

The Black Clip slider sets the minimum and maximum black luma values for keying. A range is used so there is a smooth transition from foreground to background.

White Clip

The White Clip slider sets the minimum and maximum white luma values for keying. A range is used so there is a smooth transition from foreground to background.

Edge Coloring

The Edge Coloring slider sets the amount of edge coloring.

Display

When clicked, Wirecast opens a drop-down menu showing available display options, as follows:

- **Result** The *Preview* window displays the image resulting from applying the filter.
- **Alpha Channel: White** The Preview window displays the white alpha channel.
- **Alpha Channel: Black** The Preview window displays the black alpha channel.

Color Key

This lets you set the image alpha based on the distance from a given color in the RGB space. This is useful for images (logos) that have non-black and non-white backgrounds. If the BG is black or white use Luma Key. If it's a plate from a greenscreen/ bluescreen then use *Chroma Key*. Otherwise, try *Color Key*.

Color

The color picker enables you to choose the color of the key.

Alpha Clip

The alpha clip slider lets you choose the minimum and maximum values of the alpha clip. A range is used so there is a smooth transition from foreground to background.

Edge Coloring

The Edge Coloring slider sets the amount of edge coloring.

Display

When clicked, Wirecast opens a drop-down menu showing available display options, as follows:

- **Result** The *Preview* window displays the image resulting from applying the filter.
- **Alpha Channel: White** The Preview window displays the white alpha channel.
- **Alpha Channel: Black** The Preview window displays the black alpha channel.

Blur

You can use blur effects on all sorts of sources, including text. For example, you can create a text blur effect to hide details of a window or website.

Radius

When dragged left or right, the Radius slider increases or decreases the radius of the blur filter.

Virtual PTZ

Applies Pan, tilt, and zoom controls to an existing clip, emulating PTZ controls on a live camera.

Background Removal

Applies the Background Removal filter to a clip. Select one of the following from the *Mode* drop-down menu.

- **Remove** Removes the clip background, replacing it with the image behind the clip
- **Small Blur** Blurs the clip background a little.
- **Blur** Blurs the clip background much.

See *Removing a Background from a Shot*.

Amount

When dragged left or right, the *Amount* slider increases or decreases the amount of the LUT filter Wirecast applies.

LUT File

When clicked, Wirecast opens a drop-down menu of available LUT files.

See *Adding a Custom LUT Filter*.

Customize

When clicked, Wirecast opens a folder containing LUT customization information.

See *Applying a Video Filter to a Shot* and *Adding a Custom LUT Filter*.

Smooth Transition Properties Tab

Enables you to set transition properties.

The *Smooth Transition Properties* tab provides control over how objects (image, movie, title, etc.) are added or removed in the *Live Broadcast Area*. Wirecast performs motion only during a Smooth transition. If you are using any other transition, the motion settings are ignored.

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

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

Direction Menus

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

Fade In / Fade Out

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

Spin In / Spin Out

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

Scale In / Scale Out

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

Apply To All

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

Set As Default

Click this button to make these Transition Settings the default settings for all new shots. These default settings will be applied in all future WC documents.

Source Properties Tab

Enables you to set properties for a source in your shot. Each source in a shot can have its own video filter settings. The selected filters are applied to the source wherever the source is used.

Note: The title of the *Source Properties* tab changes with the type of shot selected. For example, when you select a playlist shot, the title of the *Source Properties* tab becomes *Playlist Properties*.

The *Source Properties* tab provides control over clip properties and behaviors. When a playlist is selected, the *Source Properties* tab also provides playlist controls.

See also *Playlist Controls* and *Playlist Properties Tab*.

Name

Clip filename, editable.

In Point/Jump

Enter the timecode for the in-point desired. Click *Jump* to bring the playhead to the in-point.

Out Point/Jump

Enter the timecode for the out-point desired. Click *Jump* to bring the playhead to the out-point.

When Finished

Options in the drop-down menu determine Wirecast behavior when the live clip is done playing, as follows:

Loop	Hold	Remove
With no options checked Wirecast replays the clip from its beginning.	**With no options checked** Wirecast holds on the last frame. If it's an audio-only clip, Wirecast holds on silence.	**With no options checked** Wirecast drops the clip from the live playback window.
With *Begin playing when media becomes Live* checked When the clip goes live, Wirecast plays the clip from the clip beginning.	**With *Begin playing when media becomes Live* checked** When the clip goes live, Wirecast plays the clip from the clip beginning, and holds on the last frame.	**With *Begin playing when media becomes Live* checked** When the clip goes live, Wirecast plays the clip from the clip beginning to the end, then drops the clip from the live playback window.

Loop	Hold	Remove
With *Begin playing when media becomes Live* and *Remember position even when not Live* checked When the clip goes live, Wirecast plays the clip, starting after the last frame previously played.	**With *Begin playing when media becomes Live* and *Remember position even when not Live* checked** When the clip goes live, Wirecast plays the clip, starting after the last frame previously played, and holds on the last frame. Wirecast doesn't restart the clip until you uncheck this option.	**With *Begin playing when media becomes Live* and *Remember position even when not Live* checked** When the clip goes live, Wirecast plays the clip, starting after the last frame previously played, to the end. Then Wirecast drops the clip from the live playback window.
With *Begin playing when media becomes Live*, *Remember position even when not Live*, and *Live Playback: Changes are live* checked **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.	**With *Begin playing when media becomes Live*, *Remember position even when not Live*, and *Live Playback: Changes are live* checked** **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.	**With *Begin playing when media becomes Live*, *Remember position even when not Live*, and *Live Playback: Changes are live* checked** **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.
With *Begin playing when media becomes Live*, and *Live Playback: Changes are live* checked **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.	**With *Begin playing when media becomes Live*, and *Live Playback: Changes are live* checked** **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.	**With *Begin playing when media becomes Live*, and *Live Playback: Changes are live* checked** **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.
With *Remember position even when not Live* checked When the clip goes live, click Play. Wirecast plays the clip, starting after the last frame previously played.	**With *Remember position even when not Live* checked** When the clip goes live, click Play. Wirecast plays the clip, starting after the last frame previously played, holds on the last frame, and doesn't restart until you uncheck this option.	**With *Remember position even when not Live* checked** When the clip goes live, click Play. Wirecast plays the clip, starting after the last frame previously played, to the end. Then Wirecast drops the clip from the live playback window.

Loop	Hold	Remove
With *Remember position even when not Live*, and *Live Playback: Changes are live* checked **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.	**With *Remember position even when not Live*, and *Live Playback: Changes are live* checked** **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.	**With *Remember position even when not Live*, and *Live Playback: Changes are live* checked** **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.
With *Live Playback: Changes are live* checked When checked, Wirecast lets you control the playback with the tools in the Preview window. **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.	**With *Live Playback: Changes are live* checked** When checked, Wirecast lets you control the playback with the tools in the Preview window. **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.	**With *Live Playback: Changes are live* checked** When checked, Wirecast lets you control the playback with the tools in the Preview window. **Note:** When you check *Live Playback: Changes are live*, it is usually best to uncheck *Begin playing when media becomes Live* and *Remember position even when not Live*.

Set as Default

Click to make the current source properties the default source properties.

Source Filters Plus (+) button

When clicked, Wirecast opens a drop-down menu of available video filters.

See *Applying a Video Filter to a Source*.

Playlist Properties Tab

The *Playlist Properties* tab contains the following settings for playlist shots:

Name

An editable field for the name of the playlist.

When Finished

Sets the behavior of the playlist when the last shot in the list has been played. A check mark indicates what menu item (behavior) is selected.

- *Loop* transitions back to the first shot, endlessly.

- *Hold* stays on the last shot. If the last shot is a clip, the last frame in the clip is displayed. If the last shot is a live shot, the live source stays active. If the last shot in a Playlist is a video clip Shot, it will obey the rules set for the video clip in the Media Properties Inspector tab under *Source Properties*. However, it will hold the Playlist on that last Shot if *Set Playlist Behavior* is set to "Hold". Therefore, if you want to see the last video in the Playlist pause on the last frame, you must set *When Finished* to "Hold" under Source Properties, in addition to setting the playlist behavior to "Hold". If you set *When Finished* to "Loop", under Source Properties, the last video in the Playlist will continue to loop.
- *Available Shots* transitions to another shot on the same layer. All available shots are listed as menu selections. (In the example shown, the only available shot is "Logo".)
- *Previous Live Shot* transitions back to the shot that was live before the playlist began playing.
- *Current Preview* transitions the contents of Preview to the *Live Broadcast Area*.

Transition

Sets the transition to use when switching between shots.

Remember position when not live

When selected, Wirecast remembers the start frame for the playlist when the playlist isn't live.

Previous

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

Next

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

Shuffle

Click to shuffle the order of the playlist shots.

Total Shots

Displays the total number of shots in the playlist.

Duration

Displays the duration of the playlist.

See also *Source Properties Tab*.

The Shot Menu

You can change almost all the attributes of a shot through the shot menu. To open the shot menu for a shot, right-click on the desired shot in a layer.
Wirecast displays the shot menu.

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

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

Keyboard Shortcut You can create a keyboard shortcut for opening the shot. To do this, select *Keyboard Shortcut from the shot menu*. Then, select a menu number to associate with that shot.

Wirecast checks that menu item and adds the keyboard shortcut number in the shot icon.

To take a shot using the assigned hotkey, press the number key assigned to that shot.

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

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

See also *Creating a Document Hotkey*.

Edit Shot You can edit a shot by clicking the double arrows (located on the left side of the *Preview Area*) to the right, revealing the shot editing panel. You can also edit a shot by double-clicking on it, by right-clicking it and selecting Edit Shot, by selecting Edit Shot from the Edit menu, or by selecting it and pressing the Command+E keys.

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

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

Duplicate Shot Options Check a source to create a new instance of it when duplicating the shot containing it. Multiple selection is allowed.

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

Save Shot as Template You can configure any shot with a Placeholder and save it as a Template Shot. When the dialog box displays, enter a template name and click *OK*.

Lock Shot Icon Click to take a snapshot of your live shot icon thumbnail and save it as a static image for your shot. This can help users identify each shot with a snapshot image that's meaningful for them. For example, if you have a PTZ camera with multiple shots configured for different camera positions, you can display a customized snapshot of each camera angle as the icon for each shot. This provides quick identification during production. Once a shot icon is locked, the Gear menu item will turn into *Unlock Shot Icon*.

Refresh Shot Icon Click to refresh the shot icon after any changes made.

The Preferences Dialog Box

You can customize Wirecast functionality with the settings in the Preferences dialog box.

See *Customizing Wirecast with Preferences*.

General Preferences

You can customize whether Wirecast shows the landing page and last document on startup, the number of transition buttons shown, and other defaults, through the *General* preferences.

Open last document on startup

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

Show landing page on startup

When checked, the Welcome screen is displayed when Wirecast starts up.

Show Number of Viewers

When checked, enables the viewership indicator while streaming.

Send diagnostic and usage information

When checked, causes diagnostic and usage information to be sent to Telestream anonymously.

Hide Unlicensed Features

When checked, Wirecast hides unlicensed Pro features from display in the menus.

Transition Buttons

The value selected from the drop-down menu determines the number of transition controls buttons Wirecast displays in the default layout.

Maximum Reconnect Attempts

The number entered into this field determines the number of times Wirecast tries to reconnect to a host provider. The default is three.

Audio Playback

The device selected from the drop-down menu determines the device Wirecast uses for monitoring audio playback.

Stock Media Download Folder

This field displays the full path of the folder where Wirecast stores stock media downloads. Clicking the *Browse* button lets you select a different folder for stock media downloads.

Live Snapshots Folder

This field displays the full path of the folder where Wirecast stores your snapshots of the *Live Action Area*. Clicking the *Browse* button lets you select a different folder for snapshots.

See *Snapshot Button*.

Canvas Preferences

Canvas preferences let you set options for your document canvas, including the default size and the display rate used for video rendering.

Canvas Size for New Documents

The preference selected from the drop-down menu determines the default canvas size for new documents.

Note: To optimize the quality of the video that Wirecast broadcasts, set the canvas size to match, as closely as possible, the resolution of the desired output.

Lock Aspect Ratio When Resizing Layers

When checked, maintains aspect ratio when resizing layers.

Enable Snapping to other layers

When checked, turns on snapping to selected layers.

Enable Snapping to canvas

When checked, turns on snapping to the canvas.

Show Z Rotation controls

When checked, Wirecast displays the Z Rotation controls.

Video Display Rate

The preference selected from the drop-down menu determines the frame rate displayed on the canvas.

Note: To optimize resources, set this as closely as possible to the framerate of the desired output. The framerate you set is the framerate that Shot ISO and Multiviewer use automatically.

Shot Display Preferences

Shot Display preferences enable you to change settings related to your shots and the Main Shot Display.

Theme

The preference selected from the drop-down menu determines how Wirecast displays the shot window.

- Default: Displays shot icons normally.
- Lighter: Displays the Main Shot Display area with a lighter background.
- XKeys: Displays shot icons with shot titles highlighted.
- XKeys - Layer Backgrounds: Displays shot icons with colored backgrounds.

Display hotkeys using

When clicked, Wirecast opens a drop-down menu displaying the following options:

Key Combination

When checked, Wirecast displays the key combination on the shot.

Hotkey Name

When checked, Wirecast displays the hotkey name on the shot. **Live GPU Accelerated Icons**

The preference selected determines the framerate at which Wirecast displays the active icons.

Note: Higher framerates place greater demands on your CPU. This could diminish Wirecast performance.

Live Audio Meters

When checked Wirecast enables live audio meters.

When Dragging Multiple Files From ExplorerFolder

The preference selected determines what Wirecast does when you drag multiple files from a folder into Wirecast. Depending on your selection, Wirecast either creates a playlist containing the multiple files, or Wirecast creates multiple shots that are not part of a playlist.

Shot Selection Icons

Each layer contains one or more shot-selection icons.

The shot icons can be made to display any live activity in the source it represents, such as cameras or streaming.

See *Creating a Shot* and *Shot Display Preferences*.

Licenses Preferences

Licenses preferences enable you to register and license Wirecast.

License Key

This field displays the serial number that you have received for Wirecast.

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

Purchase

When clicked, the *Purchase* button launches the purchasing dialog.

Deactivate

When clicked, the *Deactivate* button deactivates the serial number.

Update Preferences

Software update preferences enable you to obtain Wirecast updates.

Automatically check for updates

When checked, Wirecast checks for updates on the Telestream Website each time Wirecast is launched. No personal information is transferred to Telestream during this action.

Check Now

When clicked, *Wirecast* immediately checks for updates on the Telestream Website (telestream.net). Wirecast does not transmit personal information to Telestream during this action.

See *Checking for Wirecast Updates*.

Shortcuts Preferences

Shortcut preferences enable you to view and create application shortcuts and document hotkeys. An application shortcut is a combination of keys that executes a menu or mouse command. A document hotkey is a combination of keys that executes a document-specific command.

See *Finding an Application Shortcut* and *Finding a Document Hotkey*.

The *Shortcuts* tab of the *Preferences* dialog contains the following elements:

List of Keyboard Shortcuts

The *Keyboard Shortcuts* window displays a list of existing keyboard shortcuts.

"+" Button

When clicked, this button creates a new line item, in the list of shortcuts, that you can edit to create a keyboard shortcut.

"-" Button

When clicked, this button deletes the line item and keyboard shortcut selected in the list of keyboard shortcuts.

Name

Text entered into this field names the keyboard shortcut selected in the list of keyboard shortcuts.

Key Binding field (unlabeled)

Wirecast makes the key combinations entered into this field keyboard shortcuts.

Global checkbox

When checked, Wirecast makes the key combinations entered into this field global.

See also *Creating a Document Hotkey*.

Controllers Preferences

Controllers preferences enable you to adjust MIDI and X-keys controller settings for Wirecast.

Controller

The controller selected from the drop-down menu controls Wirecast.

See *Installing a Hardware Controller*.

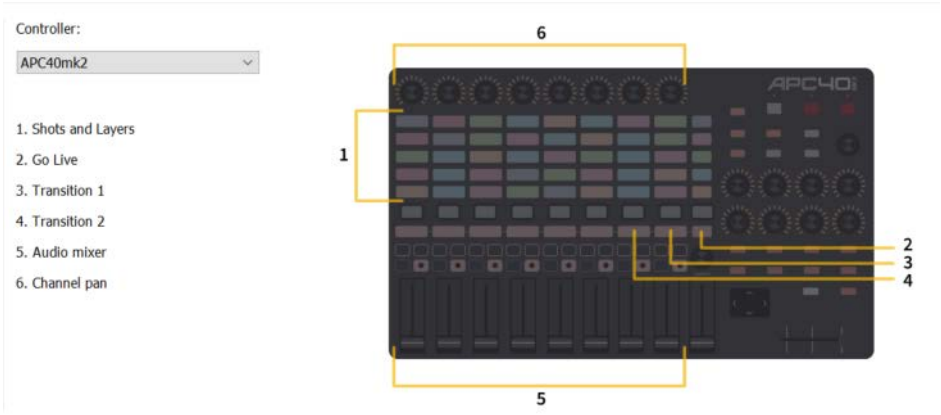
MIDI Control Assignments

Each MIDI controller has up to six controls assigned to it. The locations of each of these controls are shown below for the three midi controllers supported.

The locations of *APC MINI* controls are shown below:



The locations of *APC40mk2* controls are shown below:



The locations of *Launchpad MK2* controls are shown below:



Each MIDI controller has up to six controls assigned to it. The locations of each of these controls are shown below for the three midi controllers supported.

MIDI Control Descriptions

Shot Layers

The matrix of buttons on the MIDI controller (five rows of eight buttons) automatically correspond to the five layers in the Wirecast shot list window. Up to eight shots in each layer are controlled by the MIDI controller buttons. Shots are automatically assigned to MIDI controller buttons as they are created. If fewer than eight shots exist on a layer, the corresponding buttons (to the right) are inactive.

Go Live

Pressing this MIDI controller button is the same as clicking the *Go Live* button in the Wirecast default layout.

Transition 1

Pressing this MIDI controller button is the same as clicking the *Left Transition* button in the default layout.

Transition 2

Pressing this MIDI controller button is the same as clicking the *Left Transition* button in the default layout.

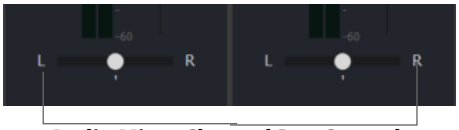
Audio Mixer Volumes

Sliding these MIDI controls adjusts up to eight volume controls in the Wirecast Audio Panel. Each MIDI slider corresponds (left to right) to a volume control in the Audio Panel. Volume controls are automatically assigned to MIDI controller sliders as they are created. If less than eight volume controls exist in the Audio Panel, the corresponding MIDI sliders (to the right) are inactive.

Channel Pan

Each Channel Pan control on a MIDI device corresponds with a Channel Pan control for a track in the Audio Mixer Panel, for as many as eight channels.

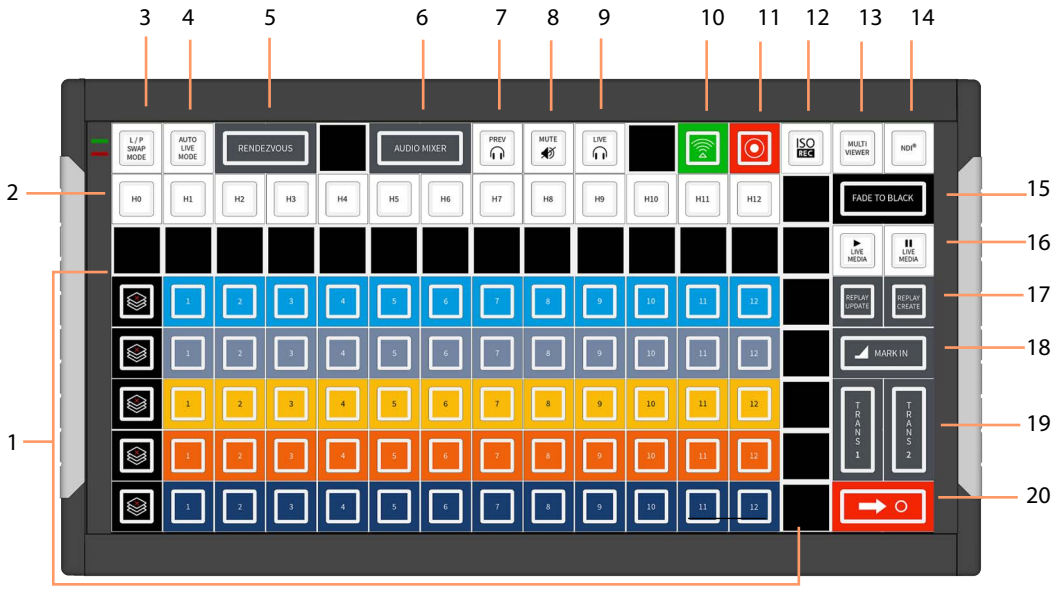
Wirecast automatically assigns Channel Pan controls to MIDI controls as they are created. If fewer than eight Channel Pan controls exist in the Audio Panel, the corresponding MIDI controls remain inactive.



Audio Mixer Channel Pan Controls

X-keys Control Assignments

The X-keys controller has multiple controls assigned to it. All of the assigned controls are shown below.



General Key Operations

- Key lamps turn red when a function is on, and turn blue when off (except for keys that do not have dual states, like the Keyboard Shortcuts).
  - Function lamps turn red when a function is on, and turn blue when off (except for keys that do not have dual states, like the Keyboard Shortcuts).
  - Shot switching key lamps turn Blue when shot is in Preview and Red when in Live. Otherwise they are off.
- The Wirecast software and the X-keys panel stay in sync when keys are pressed or changes are made in Wirecast.
- Some keys are interactive. In such a case, pressing one key affects the status of another (like the PREV and LIVE keys).

Key Descriptions

Five Layers keys

Controls the first twelve shots (plus the Clear Layer shot) on each of the five layers.

Keyboard Shortcuts

The twelve keys represent the twelve Keyboard Shortcuts that have been assigned in Wirecast. Pressing a key executes the matching numbered Keyboard Shortcut (1 through 13). The key lamps momentarily turn red, then turn back to blue.

Live/Preview Swap Mode

Toggles the Live/Preview Swap mode. When in this mode, the Live and Preview shots are swapped.

Auto Live Mode

Toggles the Live Auto mode. When in this mode, selected shots are displayed in the Live Output window immediately.

Rendezvous

Toggles (show/hide) the display of the Rendezvous window.

Audio Mixer

Toggles (show/hide) the display of the Audio Mixer window.

Preview Monitor Audio

Toggles the Preview monitor audio (what you hear locally) on and off. (It is mutually exclusive with Live Monitor audio).

Mute Live Streaming audio

Toggles the Live Streaming audio (what your viewers hear) on and off.

Live Monitor Audio

Toggles the Live monitor audio (what you hear locally) on and off. (It is mutually exclusive with Preview Monitor audio).

Streaming

Toggles streaming on and off.

Recording

Toggles recording on and off.

ISO Recording

Toggles ISO recording on and off.

Multi Viewer

Enables all displays. Pressing this key is the same as selecting *Output* > *Multi-Viewer Output* > *Enable All Displays*.

NDI

Enables/Disables NDI output.

Fade to Black

Pressing this key acts as a "master transition-to-black". The transition used is the one currently selected. It is very helpful when needed to make the Live Output black in an emergency. If Wirecast is in Live/Preview Swap mode, the live shot is moved to Preview and the pre-fade condition can be restored by pressing the *Go* key.

Live Media Play and Pause

Press the Play button to play a selected media file, and press the Pause key to pause it. These keys are interactive. Pressing one changes the lamp status of the other.

Replay Create and Update

These keys execute *Replay+ISO* > *Create All Replay Shots, a*nd *Replay+ISO* > *Update All Replay Shots*.

Mark In

Pressing this key executes *Replay+ISO* > *Program Replay* > *Replay Mark In*.

Transitions 1 and 2

These keys select Transition 1 or Transition 2 so that when the Go key is pressed, the selected transition will occur.

Go

Press this button to send the shot from the *Preview Area* to the *Live Broadcast Area*, by way of the transition selected. If Wirecast is in the Live/Preview mode, the Live output shot will be moved to the *Preview Area* when you click the *Go* button.

Advanced Preferences

Advanced preferences enable you to adjust advanced settings for Wirecast.

Disable Vertical Sync

Check the box when running Wirecast minimized, when the Wirecast user interface is covered by another application, or when Wirecast is covered by a full-screen game.

Video Adapter

Select the desired video adapter from the drop-down menu.

Render Engine

Select the desired render engine from the drop-down menu. The options are as follows:

- *Automatic* This is the default setting. When this option is selected, Wirecast selects the best render engine based on the available hardware.

Note: Wirecast automatically sets the render engine to Direct3D 11 when it detects AMD hardware. Also, Wirecast automatically sets the render engine to Direct3D 11 when Direct3D 12 is not available.

- *Direct3D 12* Select this option to make Direct3D 12 the default render engine.
- *Direct3D 11* Select this option to make Direct3D 11 the default render engine

Disable Vertical Sync

When checked, Wirecast receives frames as fast as possible, for example, during video game play. This is especially useful when the application window is minimized or covered by another application.

Video Adapter

The preference selected from the drop-down menu determines the video adapter Wirecast uses for rendering and compositing. If you are using a discrete GPU, select the same GPU on which your application is running.

Note: *Video Adapter* defaults to the first discrete card that is discovered by Wirecast. If you have multiple GPUs, it is best to configure Wirecast to use the same card as used for your application (for optimal performance), otherwise Wirecast uses a slower capture path. Also, best performance is achieved by setting the Video Adapter to use the NVidia card.

Web Stream

Check to enable automatic discovery of ONVIF cameras.

Microphone

Check to automatically detect feedback and force the display of a warning message.

Missing Media

Check to automatically reconnect live shots when Wirecast loses communications with a source.

Application Source Latency

The value entered into this field determines Wirecast latency period, in microseconds. When you update this value, Wirecast applies it as soon as the preference is committed. You don't need to restart Wirecast to see the change.

The minimum value for this preference is 50ms (2 frames @ 30fps). The maximum value is 330ms (10 frames @30fps). The default is 100ms (3 frames @ 30fps).

Note: Wirecast applies application source latency to all sources, while the audio delay and video delay values in Source Properties determine the delay for individual sources.

Language

The drop-down menu allows you to select any supported language for the Wirecast user interface. The default is *System Default*, which is the language of the operating system on which Wirecast is installed.

See *Choosing the Wirecast Language*.

Missing Media Image

The preference selected determines how Wirecast indicates a missing graphic.

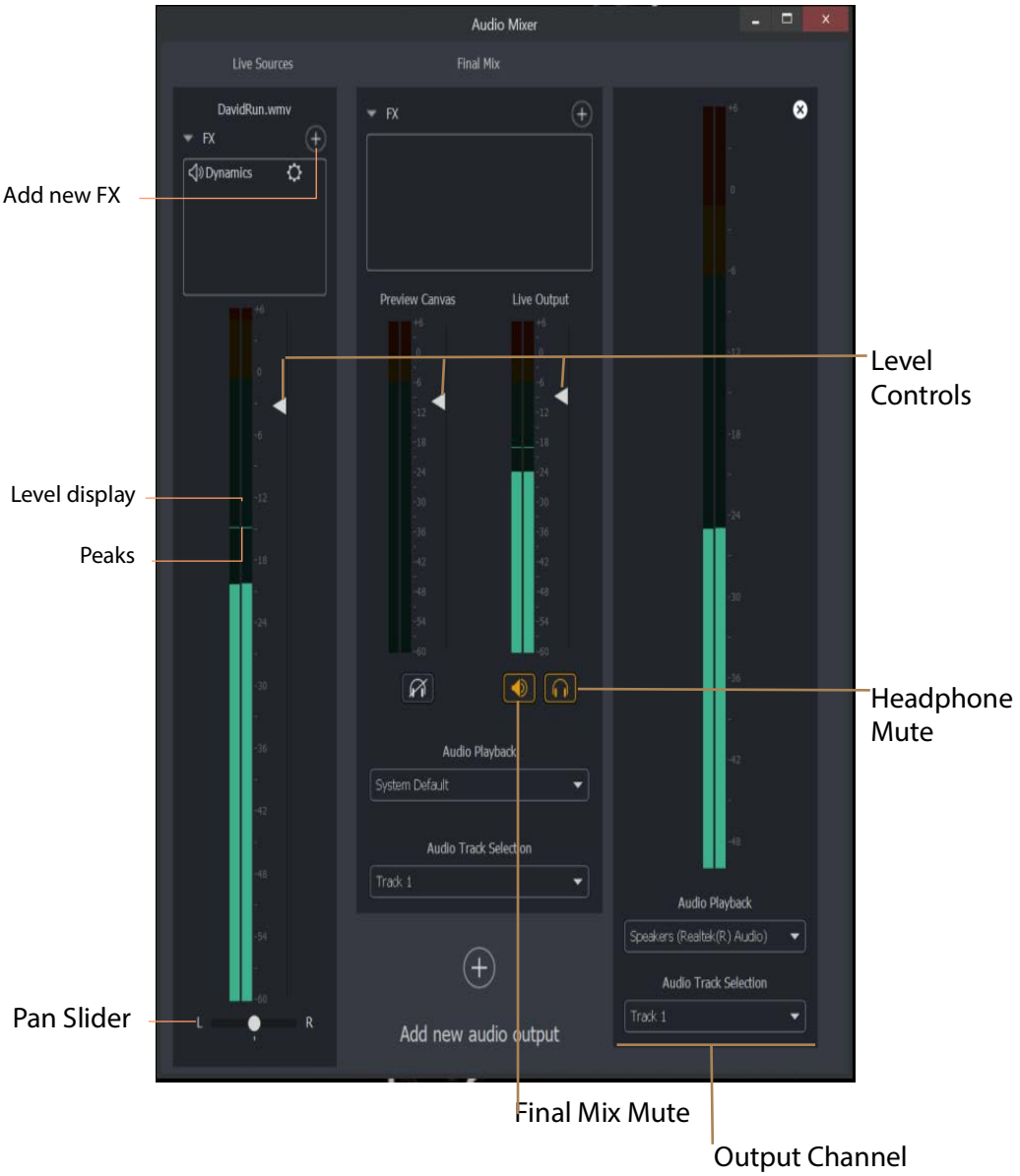
- When *Default* is selected, Wirecast presents a red question mark in place of the missing graphic.
- When *Transparent* is selected, Wirecast makes no replacement of the missing graphic.
- When *Custom* is selected, Wirecast lets you browse to a graphic to replace the missing graphic.
- *Browse* button: click to browse to a media image.

The Audio Mixer Window

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

The *Audio Mixer* separates your audio by hardware and shot. The *Live Sources* pane shows all hardware audio sources that are live in your streaming event. This includes microphones, audio input feeds, cameras, capture cards, and Web streams. The remaining audio controls are associated with specific shots.

See *Displaying or Hiding the Final Mix Audio Panel*.



The *Headphone Mute* buttons  toggle the source audio when monitoring Preview or Live output. Muting headphones doesn't remove the audio from the output stream or recording. Channel Selection enables you to select left source only, right source only, or stereo (left and right).

FX

Click the down-arrow to display the audio effects pane.

Add New FX (+)

Click the plus (+) icon to select an audio effect from the drop-down menu. You can select more than one effect or plugin.

Level Controls

Adjust the audio levels.

Level Display

Displays the levels (left and right) of the live audio outputs.

Live Output Audio Level Control

Adjusts the audio level of the Final Mix audio output.

Final Mix Pane

Displays the levels (left and right) of the Final Mix audio outputs.

Final Mix Mute

Mutes the Final Mix audio output.

Headphone Mute

Toggles the monitor audio output in the headphones without effecting the Final Mix audio output.

Audio Playback Selection

Click the down arrow to select an audio playback device from the drop-down menu.

Audio Track Selection

Click the down arrow to select an audio track from the drop-down menu.

For information about the assignment of audio channels to audio tracks see *The Multi-Track Input Mapper*.

Note: Although SDI supports 16 discrete audio channels, Wirecast Pro video out currently supports only two channels.

The Add FX (+) Drop-Down Menu

The Add FX (+) drop-down menu lists available sound effects, as follows:

De-ess

Thresh sets the threshold of de-essing. Freq selects the frequency at which de-essing will be applied to the audio. HF Drive adjusts the high frequency aspect of de-essing.

Delay

L and R Delay adjusts how much delay on each channel. Feedback is how much delay is used. Fb Tone is a frequency setting of highs and lows to be delayed. FX Mix is how much delay will be added to audio output. Output sets the delay output level.

DubDelay

Opens the *DubDelay* dialog which allows you to set the parameters of DubDelay.

Dynamics

Thresh sets the threshold of engaging compression. Ratio sets the compression ratio. Output sets the compression level. Attack sets the manner in which compression is applied. Release sets how compression in released. Limiter sets a max output level on the audio. Gate controls (*Thresh*, *Attack*, and *Release*) sets the noise gate that cuts off noise at the set level. Mix adjusts how much compression is applied to the audio.

EQ

Low, medium, and high adjusts low, mid, and high frequency components in the audio.

Limiter

Thresh sets the minimum threshold of limiting in the audio. Output sets the amount of limiting used in the audio. Release sets the manner in which limiting is released as the audio decreases. Attack sets the manner in which limiting is applied. Knee adjusts the frequency and shape of point where limiting begins.

Loudness

Loudness adjusts the amount of loudness (raising high and low frequencies) in the audio. Output adjusts how much loudness is applied to the audio.

Multiband

Listen selects which part of the frequency spectrum to hear: low, mid, high, or all (output). L<>M adjusts the cutoff frequency in the low to mid range (87 to 1020 Hz). M<>H adjusts the cutoff frequency in the mid to high range (111 to 19606 Hz). L, M, and H Comp adjusts the compression for low, mid, and high frequencies. L, M, and H Out adjusts the output for low, mid, and high frequencies. Attack sets the manner in which compression is applied. Release sets the manner in which compression is released. Stereo adjusts how the left and right channels are separated (width) from 0 to 200%. Process selects stereo or mono mode.

Noise Reduction

Amount sets the amount that noise reduction is applied.

The Output Settings Window

The *Output Settings* window enables you to customize the settings for a destination.

Destination List

Wirecast lists the last-used destinations in the left-side pane of the *Output Settings* window.

Add Button

When clicked, the *Add* button opens the *Select an Output Destination* dialog, enabling you to add destinations to the destination list.

Remove Button

When clicked, the *Remove* button opens the *Select an Output Destination* dialog, enabling you to remove destinations from the destination list.

Name

This is an editable field for the name of the output setting. By default, Wirecast names the setting for the destination selected.

Destination

This drop-down menu lists all the visible existing destinations. Each destination has its own broadcast technology preset, for example RTMP, or Windows Media.

See *Multicast and Unicast Destination Settings*.

More Button

This button opens a menu listing all existing destinations, with check boxes for making each destinations visible in the *Destinations* drop-down menu.

First Gear Icon

This drop-down menu lists actions available for the destination selected.

Encoding

This drop-down menu lists the available encoding presets. Each destination preset has its own encoding presets. The encoding presets define the codec, aspect ratio, and frame rate for each destination. Wirecast provides many encoding presets.

Second Gear Icon

This drop-down menu enables you to view the details for the preset selected, create a new preset, or filter the presets listed for the destination selected.

Audio Track Selection

This drop-down menu lists the audio tracks available for the destination selected.

Map Button

This button opens the *Multi-Track Input Mapper* for the destination and track selected.

See *The Multi-Track Input Mapper*.

Address

This editable field contains the network address for the destination selected.

Port

This editable field contains the port address for the destination selected.

Passphrase

This editable field contains the passphrase for the destination selected.

Stream ID

The name of the stream. 512 character limit. Some servers require this. When you send multiple SRT streams to a server, the Stream ID helps identify each individual stream to the server. Stream ID lets a client identify itself, and state its intent, such as send/receive or live/file. Servers can use Stream ID to identify resources and user-password access methods while using the same service port number for multiple purposes.

Location

This field displays the host location for the destination selected.

See *Selecting a Destination* and *The Encoder Presets Window*.

Multicast and Unicast Destination Settings

You can select *Multicast* or *Unicast* from the *Destination* drop-down menu in the *Output Settings* dialog. *Multicast* lets you broadcast to multiple computers simultaneously. *Unicast* lets you broadcast to a specific computer.

During multicast, the broadcasting computer identifies each data stream individually. This enables recipients to choose between the available multicast streams.

The multicast protocol uses separate unique identifiers for video and for audio. These are not TCP/IP addresses, though they might look like TCP\IP addresses.

See *The Output Settings Window*.

Facebook Live Destination Settings

You can select *Facebook Live* from the *Destination* drop-down menu in the *Output Settings* dialog. *Facebook Live* lets you broadcast to Facebook live.

Tags

Wirecast posts any Facebook Live tags entered in this field to Facebook with the output video. Facebook Live tags make videos easier to find on Facebook. As you type in the *Tags* field, Wirecast searches the list of authorized Facebook tags and displays tags matching your query.

See *The Output Settings Window* and *Modifying Facebook Live Destination Settings*.

The Multi-Track Input Mapper

PRO

The *Multi-Track Input Mapper* window enables you to determine the output audio channel destination for each of the audio tracks in a Wirecast document.

Source

Wirecast displays the filename of the audio source in the *Source* field.

Channel

Wirecast displays the output audio channels available in the *Channel* fields.

Track (1-8)

Wirecast displays checkboxes for each of the available audio tracks in the *Track* columns.

See *Map*, *Mapping Audio Tracks to Output Audio Channels*, and *Mapping Audio Mixes to Playback Devices*.

The Encoder Presets Window

The Encoder Presets window enables you to select a default encoder preset for your output, and to create your own custom presets.

Encoder Preset

This drop-down menu lists all default and custom encoder presets available.

Video Encoding

When checked, Wirecast enables you to customize the video encoding settings shown in the Video Encoding pane.

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

Profile

Many encoder presets enable you to select one of three profiles: *Baseline*, *Main*, or *High*.

Baseline Profile (BP) Baseline profile is primarily for low-cost applications that require additional data loss robustness. This profile is used in some video conferencing and mobile applications. It includes all features supported in the Constrained Baseline Profile, plus three additional features used for loss robustness (or for other purposes such as low-delay multi-point video stream compositing). The importance of this profile has faded somewhat since the definition of the Constrained Baseline Profile in 2009. All Constrained Baseline Profile bitstreams are also considered to be Baseline Profile bitstreams, since these two profiles share the same profile identifier code value.

Main Profile (MP) The Main profile is used for standard-definition digital TV broadcasts that use the MPEG-4 format as defined in the DVB standard. It is not, however, used for high-definition television broadcasts, since the importance of this profile faded when the High Profile was developed in 2004 for that application.

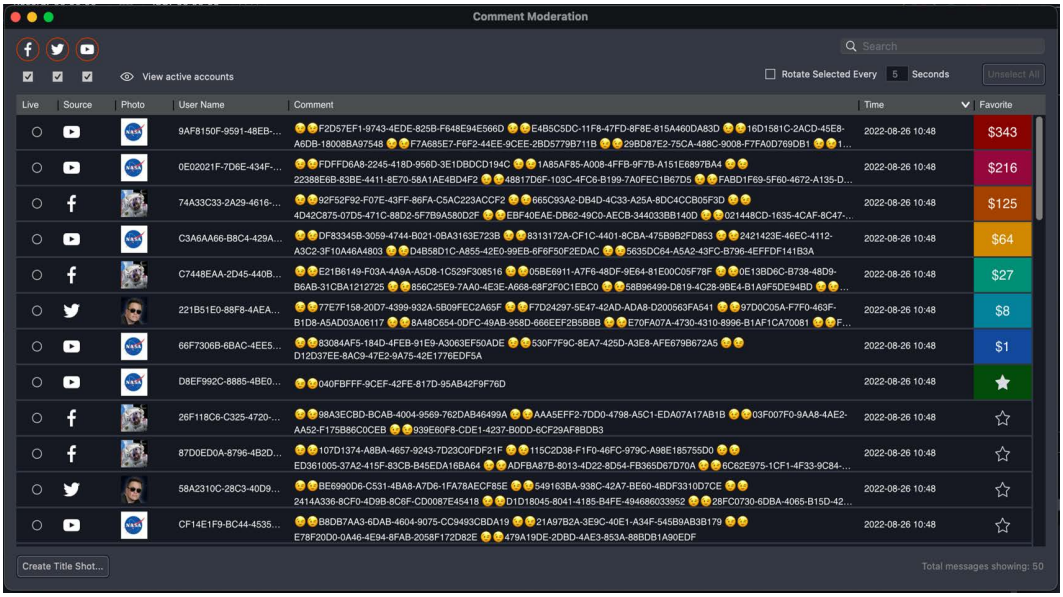
High Profile (HiP) The High profile is the primary profile used for broadcast and disc storage applications, particularly for high-definition television applications. For example, this profile is used by the Blu-ray Disc storage format and the DVB HDTV broadcast service.

Audio Encoding (AAC)

When checked, Wirecast enables you to customize the AAC audio encoding settings shown in the Audio Encoding pane.

See *Encoder Presets* and *Encoder Presets*.

The Comment Moderation Window



Descriptions of the controls in the *Comment Moderation* window follow.

Facebook, X (formerly Twitter) and YouTube logos

The colored ring around a logo indicates the status of the Wirecast connection to that platform, as follows:

Red

Not reading comments

Note: Until you start live streaming, Facebook and YouTube icons remain red.

Green

Connected and reading comments

Green with a yellow exclamation warning

Connected, but with a potential issue.

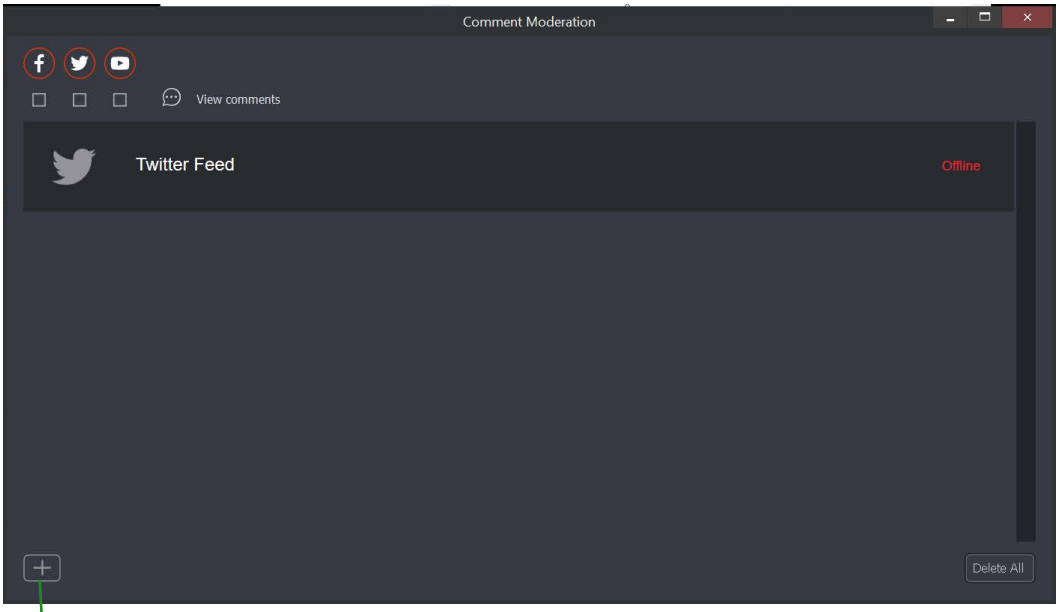
Turn off/on comments

Click the checkbox under any of the three platforms to turn off reading comments for that entire platform.

Note: If you have more than one stream going to a platform (e.g. Facebook profile and Facebook group), this control turns off comments to all of the streams on that platform. There is not currently a way to turn off comments from individual streams to the same platform.

View Active Accounts

Click this to see which accounts you have authenticated, and what their status is. This opens the *Active Accounts* pane on the *Comment Moderation* dialog.



Add Facebook or YouTube Feed

- For X (formerly Twitter):
  - If the Account is authenticated and reading comments, the message will say *Reading Comments*
  - If the Account is Authenticated, but you have unchecked it from the main Moderation window, it will say *Offline*
- For Facebook or YouTube:
  - If the Account is Authenticated but you have not yet started streaming, or you have unchecked it from the main Moderation window it will say *Offline*
  - If the account is authenticated and you are streaming, the message will say *Reading Comments*
- *View Comments* When clicked, Wirecast opens the *View comments* pane.
- *Add Facebook or YouTube Feed* When clicked, Wirecast opens the *Select destination* pane.

Search

Lets you search the text within comments

Rotate Selected Every XX Seconds

Check this option and all comments selected will rotate into the selected title and displayed. Click *Unselect All* to deselect any comments you have selected.

Comment panel

Comments appear as they come in from each selected platform. An asterisk "*" indicates the column can be sorted.

- **Live** The comments that are selected to rotate, if *Rotate Every* is selected, or the comment that is currently selected for live display
- **Source** The platform the comment came from
- **Photo** The photo of the commenter
- **User Name** The name of the commenter
- **Comment** The comment
- **Time** The time the comment was made on the platform
- **Favorite** To mark a comment as a favorite, click the star icon in the *Favorite* column for the comment.

Note: Colored rectangles showing amount paid appear in the Favorite column for super-chat comments.

When you click the *Favorite* header, Wirecast sorts the comments with super-chat comments at the top, followed by favorite comments, followed by the rest of the comments.

See *Social Media Shots*, *Moderating Social Media Comments*, and *Moderating Facebook or YouTube Comments for a Streaming Computer or RTMP Server*.

The PTZ Controller Panel

In this panel you can create a preset group of settings for each camera listed in the *Camera* drop-down menu. You can associate multiple presets for each camera. Also, you can switch between devices in the Camera drop-down menu.

Camera

This drop-down list shows cameras available to Wirecast. Selecting a camera updates the PTZ Controller window to display the preset VISCA and PTZ configuration for that camera. Once you establish a connection to a valid VISCA device, the PTZ Controller panel shows the camera's current Pan/Tilt orientation. Changing the Camera source changes all the settings in the panel accordingly.

Note: A PTZ camera's VISCA configuration is discrete from the video feed. You can associate any available video source with any manually-entered VISCA device

information. This accommodates a workflow where the camera's video feed is being captured via a Capture Card.

Protocol

Select a PTZ protocol from the drop-down menu.

IP Address

Enter the IP address of a valid VISCA-over-IP source on the network. This IP address is configured in your camera's network settings.

Port

Enter the IP port for the VISCA connection of the camera. This IP port is configured in your camera's network settings.

VISCA Address

Select the correct VISCA Address of the camera. This VISCA Address is configured in your camera's VISCA settings.

Status / Reconnect Button

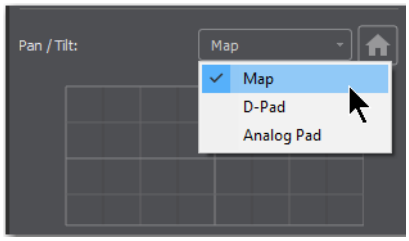
Displays the current VISCA connection status ("connected" or "invalid source") of your camera. Click the Reconnect button to force a reconnection.

Home Button

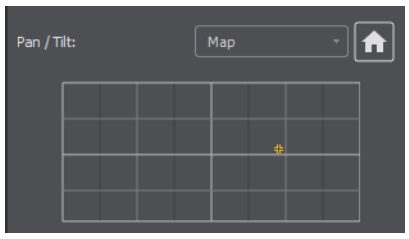
Click the House icon to reorient the PTZ camera to its default position (default centered, no zoom).

Pan/Tilt

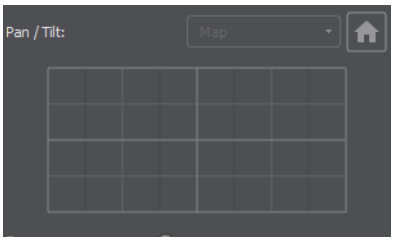
Select the desired pan/tilt control method (Map, D Pad, or Analog Pad) from this drop-down menu.



- Map – displays an X/Y plane with a yellow cross-hair representing the current Pan/Tilt orientation of the camera



- D-Pad – Pan the camera by clicking the left and right arrows, and tilt the camera by clicking the up and down arrows.



- Analog Pad – Click in the analog circle to reposition the camera pan and tilt.



Zoom

Move the slider to adjust the zoom factor of your camera.

Note: When the PTZ Controller panel is the selected window, you can press the arrow keys on the keyboard to adjust the Pan (left and right arrow keys) and Tilt (up and down arrow keys) of the camera. Alternatively the W, A, S, and D keys can also be used (W = Up, A = Left, S = Down, D = Right)

Focus

Click the "+" Plus and "-" Minus buttons to adjust the focus of the camera. The yellow button in the center toggles auto-focus on and off. Any manual adjustments made to the focus will automatically disable the auto-focus.

Exposure

Select the exposure mode from the Exposure drop-down menu.

- **Shutter** Move the slider to adjust the shutter of the camera. You can only adjust the Shutter when Exposure mode is not in auto-focus.
- **Iris** Move the slider to adjust the iris of the camera. You can only adjust the Iris when Exposure mode is not in auto-focus.

Note: Refer to PTZOptics documentation for more details about each mode.

White Balance

Select the white balance mode from the *White Balance* drop-down menu.

Note: Refer to PTZOptics documentation for more details about each White Balance mode.

One Shot

When the White Balance mode is set to *One Shot*, click this button to adjust the White Balance one time only.

Red Gain/Blue Gain

When not in auto-focus mode, you can use these sliders to adjust the red and blue gain of the video signal to compensate for white balance issues.

Presets

Enter a preset number and click *Save* to save current Pan, Tilt, and Zoom configurations of camera. To recall a preset, select a preset number by clicking the arrow buttons, then click the *Recall* button.

Note: If you have Wirecast in the *AutoLive* mode, you must click the *Live* button to switch between presets on the same PTZ camera. This is a built-in safeguard against unintentionally moving the camera while in *Live* mode.

See *Configuring The PTZ Controller*, *Opening the PTZ Controller Panel*, and *Controlling a PTZ Camera*.

Menus and Application Keyboard Shortcuts

You can launch most Wirecast features from the items in the Wirecast menu bar. When a menu item is clicked, Wirecast opens a drop-down menu of features related to that menu item.

Also, you can launch most Wirecast features with application keyboard shortcuts. Application keyboard shortcuts are key combinations assigned to the Wirecast menu commands.

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

Wirecast Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

About Wirecast

Displays the version you are running.

Preferences

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

> See *The Preferences Dialog Box*, *Customizing Wirecast with Preferences*, and *Resetting Preferences*.

Services

Presents the Macintosh Services available.

Hide Wirecast

Hides all of the windows.

Hide Others

Hides all non-application windows.

Show All

Shows all non-application windows.

Quit Wirecast

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

Always On Top

When checked, the Wirecast window remains active as the topmost open window on your system.

Edit Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

Undo

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

Redo

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

Cut

Cuts selected text.

Copy

Copies selected text to clipboard.

Paste

Pastes selected text from clipboard to location of cursor.

Paste as new Consolidated Shot

Pastes selected shots into one *consolidated shot*. A *consolidated shot* is a shot created from multiple sources.

Select All

Selects all text in the active window.

Edit Shot

Opens the Shot Editor. You can also double-click a shot, or right-click and select Edit Shot, to open the Shot Editor.

See *The Shot Editor Window*.

Rename Shot

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

Duplicate Shot

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

Duplicate Shot Options

Check a source to create a new instance of it when duplicating the shot containing it. Multiple selection is allowed.

Delete Shot

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

Lock

When clicked, Wirecast offers these options:

- **Lock All** Locks all three options: Main Layers, Preview, and Shot Editing
- **Unlock All** Unlocks all three options: Main Layers, Preview, and Shot Editing, regardless of state. For example, if one option is locked and another option isn't, *Unlock All* results in both being unlocked.
- **Lock Main Layers** Locks the *Main Layers* window.

  Disables layer reordering.

  Disables shot reordering on a layer or between layers.

  Disables layer resizing.

  Prohibits adding new shots and removes the *Add* button.

  Removes gear icon on shots, so that you can't assign hotkeys, lock shot icons, delete shots, rename shots, duplicate shots, or change sources on a shot.

Note: When the main layers are locked, you still can create a replay shot, and add it to the Main layers.

  When locked, the layer-reordering icons on the far left of each layer are replaced by one lock icon on a background that spans the vertical space of all the layers.
- **Lock Preview** Locks the *Preview* window.

  Prohibits any movement, rotation or resizing of any sources or layers directly in the preview window.

  Turns off resize handles.

  Turns off rotate handles.

  When locked, Wirecast displays a lock icon displayed under the lower left corner of the *Preview* window.
- **Lock Shot Editing** Locks the *Shot Editor* panel.

  Prohibits any changes to settings on any of the *Properties* panels, including: cropping, resize, add/delete/reorder shot layers, chroma-key on/off, audio volume/pan changes, adding/updating source or layer filters.

  Prevents changes to text.

  Disables all controls, except disclosure triangles and the PTZ Open button

  When shot editing is locked, Wirecast displays a lock icon to the left of the title of the *Shot Editor* panel.

Move To Layer

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

See *Locking Layers, Preview, or the Shot Editor*.

Switch Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

Go

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

Transitions

Wirecast has up to three transition controls buttons that can be assigned any transitions (cut, smooth, etc.) that Wirecast supports. The Switch menu lists the currently assigned transitions by name. You can also select the Left, the Middle, and the Right transitions by pressing the control key and either the 1 or 2 key. Right-click on either transition to open the operation menu. Select how the transition will operate: *Ease In, Ease In/Out Ease Out, Linear*, or I.

To select which transitions appear in this menu, see *Final Mix Audio Panel*.

Transition Speed

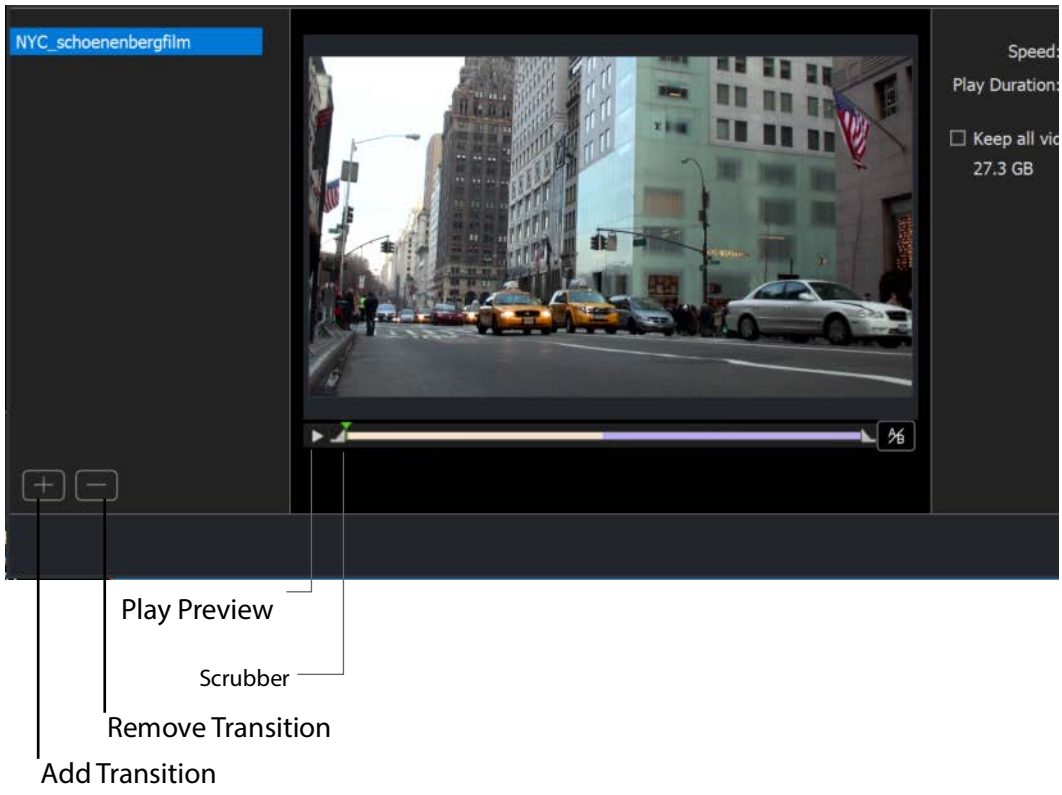
Enables you to select one of five transition speeds ranging from Slowest to Fastest.

Manage Stinger Transitions

When clicked, *Manage Stinger Transitions* opens the *Manage Stinger Transitions* dialog. This enables you to import and use custom transitions that employ transparent

backgrounds. These transitions are typically created using applications such as *Adobe After Effects*, *Apple Motion* or *ScreenFlow*.

See *Importing Stinger Transitions*.



AutoLive

Toggles (turns on and off) the AutoLive feature.

You may want to single-click a shot to make it become live. Alternatively, you may want to make several changes to a shot before making it live. You can use either method in Wirecast.

When enabled, the AutoLive feature lets you broadcast any shot with a single click. When AutoLive is enabled, Wirecast disables the Go button. Clicking a shot in a layer automatically places the shot in the *Live Broadcast Area*.

See *Single-Click Switching with AutoLive* and *Go Button*.

Live/Preview Swap

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

Layer Visibility

Click to open the menu and select a layer to hide or show in your shot. A check mark displays when the layer is visible. The shot icon becomes gray when not visible. You can toggle on and off the viability of each layer by pressing the *Alt+1* through *Alt+5* keys.

Disable PTZ Preset Recall

Enables/Disables PTZ preset recall.

See *The PTZ Controller Panel*.

Note: When you transition to a shot containing an animated title, Wirecast first executes the transition, and then performs the opening animation for the title. When you clear the title from the shot, Wirecast first performs the closing animation for the title, and then executes the transition for the end of the shot.

Media Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

Start Playing All Movies

Starts playing any movies that are not currently playing.

Pause All Movies

Pauses all movies that are currently playing.

Shuffle Playlist

Randomly rearranges the order of media in the playlist.

Assign Placeholder

Opens the Assign Placeholder menu.

Reset Placeholder

Opens the Reset Placeholder menu.

Show Asset Manager

Displays devices that can be configured. Some devices (cameras, etc.) may be configurable. For example, you can configure an iSight camera to manually change its focus, contrast, brightness, etc. Other devices have multiple inputs you can choose (AlchemyTV Card, etc.).

See *Remapping Media Locations*.

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

Output Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

Output Settings

Opens the Output Settings window.

Start/Stop Broadcasting

Starts (or stops) broadcasting to the network. You can also click the *Stream* button on the *Record/Status Bar* in the default layout.

Start/Stop Recording

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

Show Recordings

Opens all the folders of all the file directories in the Output Settings.

Multi-Viewer Output

Enables you to setup and use a Multi-Viewer display on and or all monitors. You can configure your displays, enable all displays, select a display to be active, or show (or hide) all displays when the application is in the background.

See *External Display Outputs* and *Multi-Viewer Output*.

Configure Displays

Select *Configure Displays* to open the configuration window.

Setup your Multi-Viewer by choosing a *Monitor* which determines where the Multi-Viewer will display. Also select the Mode: Multi-viewer, Live Output, or Disabled (neither).

Select a *Layout* which determines how the Multi-Viewer will be displayed. The layout choices are: one, two, or four slots. In the *Pro* version ten or seventeen slots can also be selected. Each panel slot can then be mapped to any source: Preview, Live or any existing Shot in your document. Click inside a panel to select a source. Each Monitor is configured separately using the Configuration window. So, when you select a different monitor, the configuration panel (slots) also change. Additionally, all the monitors are automatically numbered. Clicking the *Identify Displays* button causes each of the monitors to display it number on it.

You can also control how each panel is labeled by making a selection from the *Labels* menu:

Draw Labels Below each Slot

Displays the label below each shot in each panel.

Superimpose Labels Over Each Shot

Displays the label over each shot in each panel.

Do Not Draw Labels

No labels are displayed.

Click on any slot panel to open the source menus, then select a source from the list to display it in the slot. Click Identify Display to cause the display number on each display to be shown.

Enable/Disable All Displays

Select to hide or display all of your configured Multi-Viewed monitors.

Select a Display

Select one of your configured Multi-Viewed monitors to hide or display. Shown below is a typically configured monitor with four slots. Audio meters are provided in each view.

Hide All Displays When App is in the Background

When selected, all Multi-Viewer Displays are hidden if Wirecast itself is put into the background or minimized. Turning this option off allows the Multi-Viewer outputs to stay on if Wirecast is put in the background or minimized

---

Note: Multi-Viewer displays can also be disabled by clicking on the Multi-Viewer display itself (on its target monitor), and then pressing the Escape (*Esc)* key.

Secondary Display Live Output

PRO

Sends the live program to a secondary device. For example, you can send a live program feed to another screen or to a capture card in an external device. If the external device has an UVC HDMI capture card, you can capture the live output from Wirecast for use in the applications--such as Zoom or Teams--on the other device.

You can use Secondary Display Live Output as an alternative to Virtual Camera/Mic.

You can map audio tracks, as well as video, to the secondary display.

See *External Display Outputs* and *Multi-Viewer Output*.

Virtual Camera Out

Enables you to present the output of Wirecast as if it were a camera (a virtual camera), allowing it to be automatically detected by other applications when they are launched. Outputs only the Live Program feed.

Active Broadcast

Once you have logged into your YouTube or Twitch account and you start streaming, you can select *Active Broadcast* to display the YouTube broadcast window in a browser.

Control Room (YouTube only)

Once you have logged into your YouTube account, you can select *Control Room* to display the YouTube control room window in a browser.

Note: *Active Broadcast* is enabled only for Twitter-Live Broadcast and YouTube., *Control Room* and *VOD of Last Broadcast* are enabled only when you are logged into YouTube.

Facebook (Facebook Live Only)

Select *Active Broadcast* to display your Facebook Live event.

X (formerly Twitter)

Opens menu to monitor your X (formerly Twitter) broadcast.

- **Active Broadcast** Once you have logged into your X (formerly Twitter) account and you start streaming, you can select *Active Broadcast* to display the your broadcast window in a browser.
- **Producer Dashboard** Once you have logged into your X (formerly Twitter) account, you can select *Producer Dashboard* to display the X (formerly Twitter) dashboard window in a browser. In the dashboard you can start your broadcast by clicking the *Go Live* button.

To stop your broadcast click the *Stop Stream* button.

- **Toggle Broadcast** Click to toggle between *Go Live* and *Stop Broadcast* on the Producer Dashboard.

Canvas Size

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

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

Show Statistics

Displays the statistics window for your broadcast. You can select (for display): Bitrate, RTMP Queue Size, Framerate, System CPU Usage, and System Memory Usage.

PRO

NDI Output

Sends the output of the Live Program feed. Select the output resolution for your NDI output. You can also select a link that will take you to *NDI.NewTek.com* for additional information.

Note: Although SDI supports 16 discrete audio channels, Wirecast Pro video out currently only supports two channels.

Blackmagic Cards

Note: If you are updating to Wirecast 14 (or a previous version) and have multiple capture cards that are different models, when you open a saved document that contains sources from the capture cards, one of the inputs may fail to upgrade (and will show their saved source.) To remedy this re-add the missing source back into the document, then open the Asset Manager and assign that newly added source to back into its saved shot.

You can use Blackmagic cards to send live feeds directly into editing, effects and broadcast design systems. In order to use this feature, install a Blackmagic card with associated drivers, then restart Wirecast. The Blackmagic card with then be listed in the Output menu.

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

To begin outputting, select *Start Output* and chose a setting.

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

Note: Some Blackmagic cards do allow input and output simultaneously, but need to be configured in the Blackmagic software.

Layout Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

To optimize the user interface for each document, you can configure the Wirecast layout.

Wirecast enables you to select which functions are displayed in the default layout. These functions are added or removed from the default layout using the Layout menu.

Final Mix

When checked, displays the *Final Mix Audio* controls. *Final Mix Audio* controls are located on the left and right sides of the default layout.

Show Live and Preview

When checked, displays the Live and Preview windows, and allows you to select between displaying the *Preview Area* only, the *Live Broadcast Area* only, or both.

Show Preview Only

Displays the *Preview Area* only.

Show Live Only

Displays the *Live Broadcast Area* only.

Note: The three controls above work the same as the Mode Control buttons at the top-right of the default layout.
See *Layers*.

Zoom Layers In

Increases the size of *all* the layer icons.

Zoom Layers Out

Decreases the size of *all* the layer icons.

Zoom Layers To

Sets the size of *all* the layer icons to: 50%,100%, or 200%.

Note: You can also change *each* layer size by clicking and dragging the divider line between layers. Additionally, you can change the size of *all* layers by holding the command key while clicking and dragging the divider line between layers.

Go to Layer

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

Replay + ISO Menu

PRO

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

Start All

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

Activate

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

Configure ISO Outputs

Once ISO outputs are created, all ISO outputs are listed in this menu. To configure an ISO output, click *Configure*, then click the *Add ISO* button.

Note: You can create ISO recordings of any source or shot in your document.

Replay Mark All

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

Create All Replay Shots

Select *Create* to create additional Replay shots.

Update All Replay Shots

If no replay shot exists, selecting *Update* creates a new Replay shot. There after, selecting *Update* updates the first Replay shot created.

Configure

Displays the Replay Shot settings window.

For more information about Replay Shots see *Replay + ISO Menu*.

ISO enables you can set up ISO recording and do Replays from the same menu. To use Replay and ISO functionality, select the Replay + ISO menu.

Start All

Activates all configured ISO shots and/or the Program Replay. When activated, the menu item becomes *Stop All*. Click *Stop All* to deactivate the Create Replay Shot system.

Program Replay

Allows you to Stop, Mark In, Create, or Update a relay shot.

PRO

Replay Mark All

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

PRO

Create All Replay Shots

Select *Create* to create additional Replay shots.

PRO

Update All Replay Shots

If no replay shot exists, selecting *Update* creates a new Replay shot. There after, selecting *Update* updates the first Replay shot created.

PRO

Configure

Displays the Replay Shot settings window.

Once ISO outputs are created, all ISO outputs are listed in this menu. To configure an ISO output, click *Configure*, then click the *Add ISO* button.

See *Configuring Replay + ISO*.

Social Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

The Social Media menu presents options for Facebook, Comments, and Zoom.

Facebook

The Facebook sub-menu includes the *Create New Poll* item, and a list of any previously-created polls.

Create New Poll

When clicked, Wirecast opens the *Create_New_Poll* dialog.

See *Creating a Facebook Poll in Wirecast* and *Selecting a Facebook Poll*.

Comments

When clicked, Wirecast opens the *Comment Moderation* dialog, listing comments about the broadcast that are posted to Facebook or YouTube.

Zoom

Join Zoom Meeting

When clicked, Wirecast opens the Join Zoom Meeting dialog.

See *Joining a Zoom Session*.

Window Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

Welcome to Wirecast

Displays the *Welcome* screen.

Encoder Presets

Opens the *Encoder Presets* window.

See *Encoder Presets* and *The Encoder Presets Window*.

Audio Mixer

Opens the *Audio Mixer* window.

See *The Audio Mixer Window*.

Audio Plugin Explorer

Opens the *Audio Plugin Explorer* dialog box.

See *The Audio Mixer Window*.

PTZ Controller

PRO

Opens the *PTZ Controller Panel*.

Wirecast Pro allows you to remotely control cameras with built-in pan, tilt and zoom (PTZ) features using the built-in PTZ Controller window. This feature currently works with PTZOptics and Lumens cameras that support VISCA over IP control, as well as NDI PTZ protocol controls.

See *The PTZ Controller Panel*.

USB Devices

Opens a list of all USB devices.

Rendezvous Dashboard

Opens the *Rendezvous Dashboard*. Click *Start Session* to use.

See *Rendezvous*.

PRO

Rendezvous Audio Mixer

Displays the *Advanced Rendezvous Audio Mixer* window, which includes the following controls:

- **Output from [document]** Select document source from the pull-down menu.
- **Channel** Output level indicators for each channel.
- **Include In Mix** When checked, this audio source is included in your Rendezvous session.
- **Audio Level (Sliders)** Move the sliders to adjust the audio level.

See *Opening the Advanced Rendezvous Audio Mixer*.

Download Manager

Opens the Stock Media download monitor window. Whenever you add a Stock Media Library file, the downloading progress is displayed. You can cancel a download by clicking on the X icon. To navigate to the location of a downloaded file, click the spyglass icon.

Notifications

Opens the notifications window. This window displays last "important" log messages and other application health messages.

New Layer Window

Opens a new *Main Layer* window for the layer selected.

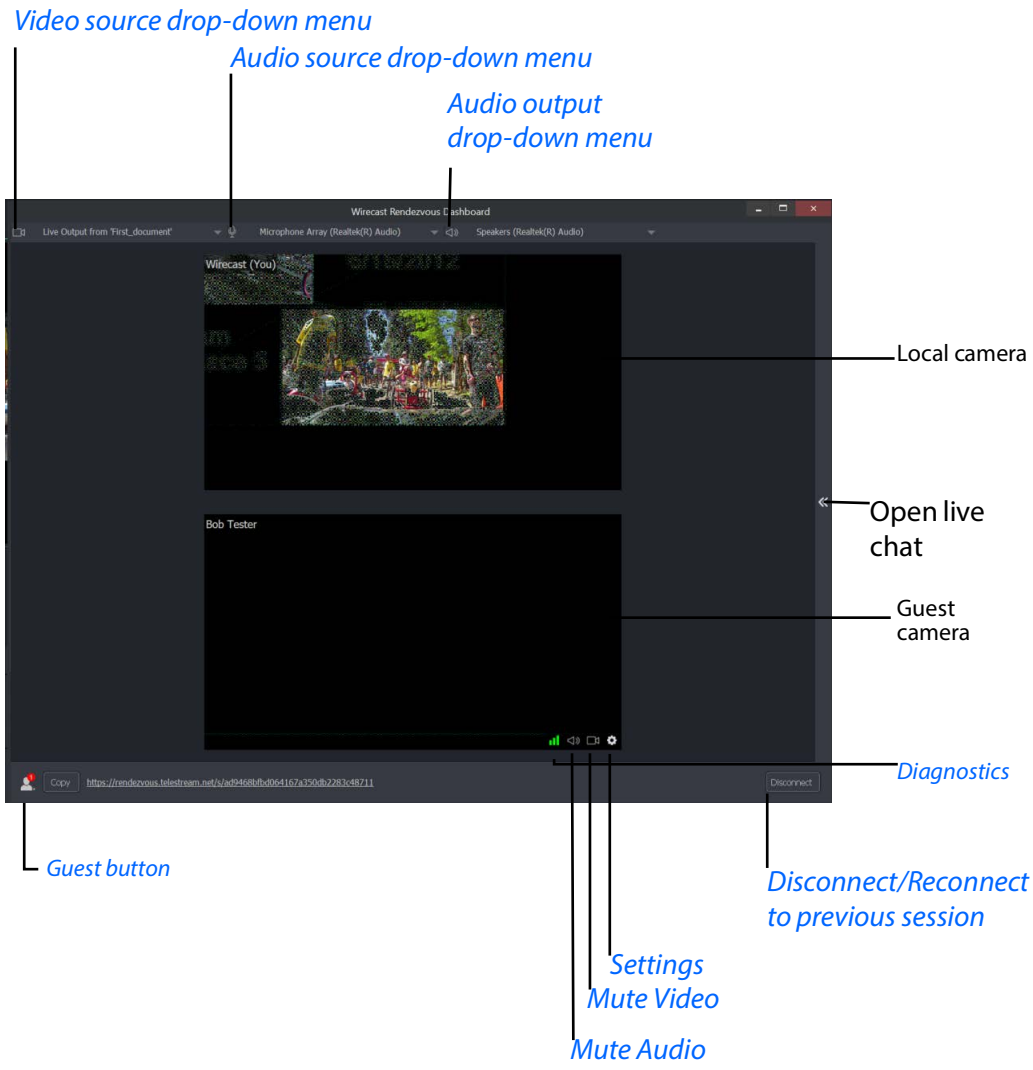
Document Windows

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

The Rendezvous Dashboard

Descriptions of the controls in the Rendezvous Dashboard follow.

See *Starting a Rendezvous Session*.



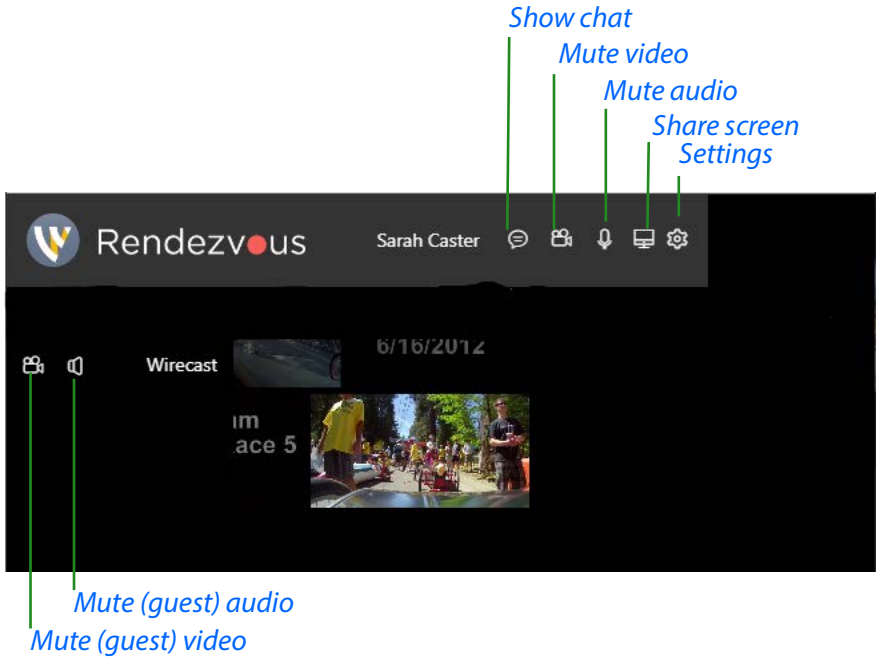
Control	Description
Video source drop-down menu	Displays available video sources.
Audio source drop-down menu	Displays available audio sources. The Advanced menu item opens the Advanced Rendezvous Audio Mixer. See *Rendezvous Audio Mixer*.
Audio output drop-down menu	Displays available audio output sources, such as speakers.
Start Session button	When clicked, Wirecast starts a Rendezvous session.
Disconnect/Reconnect to previous session button	When clicked, Wirecast disconnects or re-opens the previous Rendezvous session.
Diagnostics	Displays bitrate, audio, and video data for the guest stream
Guest button • Guest name • "P" icon	When clicked, Wirecast adds the guest to the Rendezvous session, and to the Rendezvous Dashboard. Wirecast displays a "P" icon to the right of a user name when the connection is *proxied* through the Wirecast TURN infrastructure, and traffic flows through Wirecast proxy servers. Data flows through Wirecast servers only if Wirecast can't connect to the user's server directly. This happens, typically, where there are restrictive firewalls. Otherwise, the traffic flows peer-to-peer, and there is no need to worry about Wirecast server capacity. See also Wirecast Network Ports and Proxy Servers.

Control	Description
Mute Video	When clicked, Wirecast turns off guest video.
Mute Audio	When clicked, Wirecast mutes guest audio.
Settings	When clicked, Wirecast opens a menu from which you can select: • Assign Placeholder • Toggle Network Statistics • Disconnect (guest) from Rendezvous session

The Rendezvous Guest Window

Descriptions of the controls in the Rendezvous guest window follow.

See *Joining a Rendezvous Session as a Guest*.



Control	Description
Show chat	Opens the chat panel.
Mute video	Mutes Rendezvous video
Mute audio	Mutes Rendezvous audio
Share screen	Shares the guest screen to Rendezvous.
Settings	Opens settings for microphone, camera, and other options.
Mute (guest) video	Mutes Rendezvous guest video
Mute (guest) audio	Mutes Rendezvous guest audio

Help Menu

Note: To view a complete list of the default application keyboard shortcuts, see *Finding an Application Shortcut*.

Wirecast Virtual Assistant

Opens the *Wirecast Virtual Assistant* dialog.

See *Wirecast Virtual Assistant Help*.

Open Wirecast User Guide on website

Opens the online version of the User Guide.

Open Wirecast PDF User Guide

Opens the PDF version of the User Guide.

Open Tutorial HTML

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

Create Document for Tutorial

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

Buy/Upgrade

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

Provide Feedback

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

Send Support Information

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

For troubleshooting purposes, you can reset your preferences to the defaults by clicking the *Reset Preferences* button. This will reset your preferences and create a backup of your current preferences, in case TS Support needs it.

For troubleshooting without resetting preferences, you can also open Wirecast in "Safe" mode using *Shift* + *Control* + *Open*.

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

Visit Telestream LLC Website

Opens the Telestream Website home page.

Visit Wirecast / Desktop Presenter download page

Opens the Telestream Website download page for Desktop Presenter.

Acknowledgments

Opens an on-line help to Acknowledgments.

About Wirecast

Opens a dialog box that displays the Wirecast version number and copyright information.

Tutorials

The best way to learn Wirecast is to work quickly through all its main features. These three tutorials show how to use Wirecast features to create and broadcast presentations.

Topics

- Tutorial 1: Basic Concepts 203
- Tutorial 2: Editing Shots 207
- Tutorial 3: Broadcasting 208

These tutorials familiarize you with important Wirecast concepts. The better you understand how to use Wirecast, the better it serves your broadcasting objectives.

Because each tutorial builds on the information in the previous tutorials, take the tutorials in order. Working through all the tutorials takes about thirty minutes.

Note: If you work through the tutorials before activating a Wirecast license, or with Wirecast in demonstration mode, Wirecast periodically superimposes a logo watermark over the video, and a voice-over watermark over the audio.

Note: For licensing information, select *Wirecast* > *Preferences* > *License*. Click *Purchase*, or, contact Telestream at: desktopsales@telestream.net.

Tutorial 1: Basic Concepts

This tutorial guides you through creating and streaming a presentation.

Tutorial Prep

To prepare for this tutorial, do the following:

1. Select *Help* > *Create Document for Tutorial*.
2. Select *Switch* > *Smooth*.
3. Select *Switch* > *AutoLive*.
4. De-select *Switch* > *Live/Preview Swap*.

5. Select *Layout* > *Show Live Only*.

   Wirecast displays the *Live Broadcast Area*, and the *Go* button with the red *AutoLive* LED turned on. You change all of these options during the tutorial.

The Wirecast Default Layout

To familiarize yourself with the main windows, controls, and menus of Wirecast, see *The Default Layout*.

What Is a Shot?

Wirecast uses the concept of a *shot* to construct presentations. A shot contains one or more media sources or files, along with settings for the sources and files. A shot contains at least one media file, such as a photo or a video clip. However, a shot can contain a number of sources and files, such as a live camera, a title, and background music. A shot can even include a whole playlist of clips.

You can assemble most of the files and sources for your broadcast in shots, before you start broadcasting. Also, you can edit a shot and change its settings.

See *Tutorial 2: Editing Shots*.

Switching Between Shots

Individual shots are displayed in the *Layers*. The *Transition Controls* are located just below the *Live Broadcast Area* where the two default transitions are shown: *Cut* and *Smooth*.

Replacing a shot in the *Live Broadcast Area* with a shot in the *Preview Area* is called "taking a shot live."

See *Layers* and *Final Mix Audio Panel*.

1. With the second *Transition Controls* button labeled *Smooth* and highlighted, click the *Ripples* shot in the third layer.

   The *Ripples* image fades in on the *Live Broadcast Area*. The *Smooth* fade action occurred when you clicked on *Ripples*. This is because the *Smooth* fade is the transition selected.

2. Click a shot labeled *Clear Layer*.

   The *Ripples* image fades to black. The *Clear Layer* shot enables you to display black video.

Note: Wirecast doesn't support a true dissolve transition. The *Smooth* fade transition is the transition closest to a dissolve.
If you switch from shot "A" to a shot that contains shot "A," the *Smooth* fade interpolates the difference between the two shots and animates the changes. This makes a shot element larger or smaller, and changes its position as needed.

However, if you switch from shot "A" to an entirely different shot "B," then the *Smooth* transition simply fades between the two shots.

3. To make the cut your default transition, drag down across the first *Transition Controls* button and select the *Cut* control.
4. Click the *Ripples* shot in the third layer.

   The *Ripples* image cuts in on the *Live Broadcast Area*.

When you select *Cut* as the default transition, switching from shot "A" to shot "B" simply cuts from the first shot to the second. When *Smooth* is selected, transitions fade in and out.

Transitions

To select a different transition, click the small arrow on the right side of any of the *Transition Controls* buttons, or drag the mouse downward to display the menu of transitions. When the list of transitions appears, select a transition to assign to that button.

1. To change the left *Transition Controls* button from *Cut* to *Bands*, click the *Cut* button and drag downward until the menu appears. Select *Bands* from the menu. The left *Transition Controls* button is now labeled *Bands*.
2. Now click back and forth between the *River* and *Ripples* shots using *Bands*.

   You can use these keyboard shortcuts for the two default transition buttons: Command+1 and Command+2.

Note: Wirecast displays as many as three *Transition Controls* buttons. To set the number of transition buttons that Wirecast displays, select *Preferences* > *General*.

See *The Default Layout* and *Final Mix Audio Panel*.

Transition Speed

To determine how fast a transition occurs, do the following:

1. Select *Switch* >*Transition Speed*.
2. Choose a transition speed, from *Slowest* to *Fastest*.

Layers

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

You can display several shots in the *Preview Area* and *Live Broadcast Area* at the same time by placing them in layers, one above another.

To broadcast a layered shot, do the following:

1. Select the *Logo* shot in layer 2.
2. Select the *River* shot in layer 3.

The *Live Broadcast Area* displays a layered shot containing both images.

See *Layers*.

Auto Live

So far in this tutorial, Wirecast has been running in AutoLive mode. Wirecast sends any shot you select in a layer automatically to the *Live Broadcast Area*. This mode is very useful for those users who want to set up all of their shots at once and then single-click shots as they run their presentation.

The disadvantage of this single-click method is that you can't preview the shot before taking it live.

Turning AutoLive Off

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

See *Final Mix Audio Panel*.

1. For this tutorial, turn off *AutoLive*. Select *Switch*, and deselect *AutoLive*.

   A dialog box informs you that *AutoLive* is off.
2. Click *OK* in the dialog box to continue.
3. Click the *Ripples* shot.

   Notice that Wirecast doesn't send *Ripples* to the *Live Broadcast Area*. That is because *AutoLive* is turned off.
4. Now, click the *Ripples* shot, and then click the *Go* button.

   Wirecast sends the *Ripples* shot to the *Live Broadcast Area*.

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

Multiple Changes

A benefit of having *AutoLive* off is that you can make several changes to your shot first, and then have all changes sent to the *Live Broadcast Area* at the same time.

Do the following:

1. Verify that *AutoLive* is off.
2. Click *Sample Title* in Layer 1.
3. Click *Clear Layer Shot* in Layer 2, and then click the *Ripples* Shot in Layer 3.
4. Click the *Go* button (or Command+G)

   Wirecast takes the *Ripples* and *Sample Title* shots live at the same time.

Preview

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

1. Select *Layout* > *Show Live and Preview*.

   Wirecast displays the *Preview Area* to the left of the *Live Broadcast Area*. The *Preview Area* uses a green LED to identify it. The *Live Broadcast Area* uses a red LED to identify it. Wirecast also displays green and red LEDs to identify which shots are associated with the *Preview* or *Live* areas.

2. Click the *River* shot on Layer 3.

   Wirecast displays the *River* shot in the *Preview Area*. When shots are selected they display a green or red LED to indicate selection for *Preview Area* or *Live Broadcast Area*.

3. To send the *River* shot to the *Live Broadcast Area*, click the *Go* button.

4. To remove the title from the *River* shot in the *Preview Area,* click the *Clear Layer* shot in Layer 1.

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

   See the *Go* button on the screenshot in *The Default Layout*.

6. Select the *Ripples* shot and click the *Go* button to send the *Ripples* shot to the *Live Broadcast Area*.

   Notice that the *Ripples* and *River* shots have swapped areas. Also, the shot LEDs have changed color. The green shot LEDs indicate shots included in the *Preview Area* and the red LEDs indicate the shots included in the *Live Broadcast Area*. You can view the shot that is live in the *Live Broadcast Area* as you prepare your next shot in the *Preview Area*.

Tutorial 2: Editing Shots

The first tutorial explained various ways in which you can use existing shots. However, you can also create and edit shots during a broadcast. This tutorial demonstrates how to edit your shots.

1. To edit a shot, double-click its icon in a layer.

   Wirecast opens the *Shot Editor* panel. The *Shot Editor* has six tabs: *Shot Layers*, *Shot Layer Properties*, *Audio*, *Chroma Key Properties*, *Smooth Transition Properties*, and *Additional Source Properties*.

   See *The Shot Editor Window*.

2. Practice editing a shot using the various options in the *Shot Editor Window* tabs.

Tutorial 3: Broadcasting

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

There are two main components for broadcasting your presentation (or saving it to disk): encoding and selecting a destination.

First, decide how to encode your broadcast. Encoding is the type of compression used (JPEG, MPEG4, etc.). Wirecast comes configured with many common encoding options.

See *The Encoder Presets Window* for details.

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

Streaming

1. To start streaming, click the *Output Settings* button.

   See the *Output Settings* button on the screenshot in *The Default Layout*.

   Wirecast opens the *Select an Output Destination* dialog.
2. Select a destination, and click *OK*.
3. Select the output settings desired, and click *OK*.

Note: In the Control/Status bar, the *Output Settings* icon blinks until a connection is made. Once you are connected the *Output Settings* icon turns green. If you can't connect, Wirecast displays an error message.
See *Control/Status Bar*.

Note: While streaming, the streaming status is displayed at the top of the default layout. Connection strength is indicated by how many bars are displayed in the *Output Settings* icon. Fewer bars indicates a weaker (slower) connection. If you are streaming to Facebook, additional statuses are displayed on the right side of the status bar.
See *Streaming Status Colors*.

---

4. Click the *Record* button.

   See the *Record* button on the screenshot in *The Default Layout*.
5. To stop streaming or stop recording, click *Record* again.

Making Great Broadcasts

A few techniques can keep the quality of your broadcasts high.

Topics

- High Quality Audio 209
- Good Lighting 210
- Optimal Broadcast Settings 211

Before you save video to disk or transmit it, you compress the video. Codecs (encoder-decoders), which compress video, work best with clean input data. If the audio or video is muddy to start with, it remains muddy after compression. Some codecs might even exaggerate the imperfections of poor inputs. Before compression, make sure the media file contains high-quality audio, good lighting, and optimal broadcast settings.

High Quality Audio

You can make a good live event even better by paying attention to audio details. Here are some suggestions:

- **Use an External Microphone** Most video cameras have an audio input for an external microphone. Use this, whenever possible, instead of the built-in microphone. Built-in microphones usually are not high quality, and they tend to pick up hum from the electronics inside the camera. Even an average external microphone can deliver better sound than most built-in camera mics.
- **Use a Microphone Splitter or Mixer** If the broadcast has more than one sound source, use a separate mic for each sound source. Give each speaking subject a dedicated mic. Connect the mics to a mic splitter or audio mixer. Connect the output of the splitter or mixer to the camera audio input.
- **Position the Microphone Properly** Place any microphone as close to the sound source as possible, even when using omni-directional microphones, because sound volume decreases greatly the farther away the microphone is placed. High-volume sound hitting the microphone results in a stronger signal from the mic.
- **Use Lapel Microphones** Even inexpensive lapel microphones can make a huge difference because you can place them close to the source of the sound: the speaker's mouth.
- **Control Environmental Noise** If a chair squeaks, use a different chair. If you have a wood floor and you can hear people shuffling their feet, put down a rug. Turn off air

conditioners, machines, and buzzing fluorescent lights. Do whatever it takes to keep noise at a minimum. Microphones pick up everything. Before you start broadcasting, yell, "Quiet on the set!"

Good Lighting

Do not underestimate the power of lighting. Whether shooting outdoors or indoors, you must control the light that hits the lens. For a good picture and a high-quality video signal, provide your lens two things: enough light and light with the right qualities. Here are a few suggestions for good lighting:

- If you use only one light source, don't shine it directly on your subject. Diffuse the light by bouncing it off the ceiling, or by shining it through translucent material.
- Avoid deep shadows. Make sure you fill all areas of your subject with light. Sometimes this requires adjusting the light to bounce off a different wall. Alternatively, use two lamps. To light evenly, you can place one lamp low and another high.
- Allow soft shadows. Do not light too evenly. Good lighting usually has the brightest lamp above and to one side of the lens, aimed at the subject.
- If you pour too much light on your subjects, they will look washed out. If your lighting balance is excellent, you can avoid using much make-up on your subjects.
- Watch professional broadcasts and learn from them. As you watch, notice the lighting. Notice how directors employ the suggestions listed above.

Good lighting can make an amateur video look professional and a professional video look fabulous. One or two properly-placed lamps or reflectors can make a huge difference in the visual quality of your broadcast.

Triangular Lighting

One advanced and very effective approach to good lighting is known as triangular lighting (or three-point lighting, or the three-light setup). This involves setting up three lamps (sometimes using the Sun as one of the light sources), in a configuration that separates the subject from the background. Here are the main elements of triangular lighting:

- **Key Light (Main Light)** Use the sun or your brightest lamp as your key light. It does most of the work. Place the key light higher than the talent eye-level and the lens, at least 20 degrees to the left or right of the line between lens and talent. This creates shadows on the subject that enhance the sense of three-dimensionality.
- **Fill Light** Use a diffused light source as your fill light. Place the fill lamp higher than the talent eye-level and the lens, on the side of the lens opposite the key light. If you place the key lamp to the left of your camera, place the fill lamp to the right, or vice versa. The fill light brightens the shadows, making them softer and less severe.
- **Back Light (Rim Light)** Place the lamp for back lighting behind and above the subject. Aim the back light at the top of the subject's head until the head and shoulders of your subject are rimmed with light. The back light separates your subject from

the background and enhances the sense of three-dimensionality. Good chroma-key requires sharp separation between the subject and background. Make sure light from the back light does not spill into the lens, causing lens flares.

Optimal Broadcast Settings

Once you have good video and audio coming into Wirecast, make sure the broadcast settings are configured correctly for your presentation. Though there are many broadcast parameters to modify, there are three that are the most important: bandwidth, motion, and encoder settings.

Bandwidth

Bandwidth is the speed of data transmitted from your computer to your viewers. Transmit data no faster than your network upload speed and no faster than the download speed of your typical viewers.

Estimate viewer download speed by the type of Internet connection they likely have. Are your viewers all on your corporate high-speed LAN, are they viewing from home via DSL or cable Internet, or are they on cell phones in remote areas? Set your broadcasting bandwidth accordingly.

If you broadcast to a LAN, discuss your plans with your network administrator. Verify that you will not disrupt the network with your broadcasts. Ask the administrator what your bandwidth upper limit should be.

See also Wirecast: Firewire and USB Cameras.

Motion

Once you determine your bandwidth, determine whether your video contains a lot of motion. An interview typically has little motion. A sports event, however, typically has lots of motion. Wirecast comes configured with defaults to help ease your configuration task. Choose a default configuration that meets your motion constraints.

Encoder Settings

It is beyond the scope of this document to describe the delicate balance required in defining encoder settings. Various streaming networks publish their optimal encoder settings. The Wirecast settings for the various streaming platforms generally are optimized for those platforms.

See *The Encoder Presets Window* for information on changing the encoder settings.

Acknowledgments

Portions of this software may use copyrighted material, the use of which is hereby acknowledged.

Topics

- Steinberg VST Plug-In SDK Licensing Agreement (Version 3.6.6- 17.06.2016)
- MIT
- TurboJPEG

Steinberg VST Plug-In SDK Licensing Agreement (Version 3.6.6- 17.06.2016)



VST is a registered trademark of Steinberg Media Technologies GmbH.

MIT

Copyright (c) 2018 Telestream, LLC

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the “Software”), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED “AS IS”, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR

OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

TurboJPEG

This software is based in part on the work of the Independent JPEG Group.

Copyright (C)2009-2019 D. R. Commander. All Rights Reserved.

Copyright (C)2015 Viktor Szathmáry. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the libjpeg-turbo Project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS “AS IS”, AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.