



Live Schedule Pro

Version 1.2



User Guide

Lightspeed Live Capture 3.6.2 | 3.6.3

Windows Server 2016 | 2019 | 2022

Obtaining Support | Information | Assistance

Contact Telestream for support, information or assistance, as indicated.

Telestream Contact Information

Resource	Contact Information
Lightspeed Live Support	Web site: support.telestream.net/login Support Email: support@telestream.net Terms and times of support services vary, per the terms of your current service contract with Telestream.
Licensing Assistance	Web site: support.telestream.net/login License Email: license@telestream.net
Lightspeed Live Information Assistance FAQ Forums Updates	Web site: support.telestream.net/login Support Email: support@telestream.net
Telestream, generally	Web site: telestream.net Sales and Marketing Email: info@telestream.net Telestream, LLC 848 Gold Flat Road Nevada City, CA USA 95959
Telestream Reseller Support	If you purchased your product from a reseller, please contact your reseller for support.
International Reseller Support	Web site: telestream.net See the Telestream web site for your regional authorized Telestream reseller.
Telestream Technical Writers	Email: techwriter@telestream.net If you have comments or suggestions about improving this document or other Telestream documents—or if you've discovered an error or omission, please email us.

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Introduction

Telestream's Live Schedule Pro is an enterprise-class product designed for scheduling automated live capture events in news and MCR 24/7/365 operations, and is scalable across multiple Live Capture domains.

You use Live Schedule Pro via an intuitive, calendar-style web app to create, monitor, and manage live media capture events which control serialization of live video via execution of Vantage Live Capture workflow jobs.

Telestream recommends that you read this chapter first, to become familiar with Live Schedule Pro and its features.

If you need to migrate, update, or perform a new installation of Live Schedule Pro, proceed to [Installing Live Schedule Pro](#) and perform those tasks.

Next, we suggest that you follow the steps outlined in [Quick Start](#) to identify your video sources, create Capture workflows, and configure your channels. Review the topics in [Managing Live Capture Events](#) as you explore, experiment, and become familiar with Live Schedule Pro and the process of creating and monitoring events.

Topics in [Managing Live Schedule Pro](#) help you with managerial tasks—integrating optional RouteMaster SDI and IP source router control, configuring Live Schedule Pro for your environment, licensing, and other tasks.

Topics

- [Live Schedule Pro Overview](#)
- [Logging in and Out of Live Schedule Pro](#)
- [Live Schedule Pro Web App](#)
- [Quick Start](#)
- [Scaling Live Capture](#)
- [Using the Live Schedule Pro API](#)
- [Licensing Live Schedule Pro](#)

Live Schedule Pro Overview

Live Schedule Pro is designed to centralize control over all of your live ingest workflows through user-friendly, browser-based scheduling tools. Experience maximum scalability, flexibility, and performance with our client/server architecture, and leverage powerful REST API support for customization, efficiency, and interoperability:

Unmatched Flexibility and Control

Seamlessly manage multiple, discrete Live Capture systems and domains with ease, ensuring secure and reliable feed capture management with no single point of failure.

Enhanced Signal Protection

Safeguard your live video signals with advanced routing and locking features that prevent accidental disruptions and unauthorized manual changes.

Streamlined Event Management

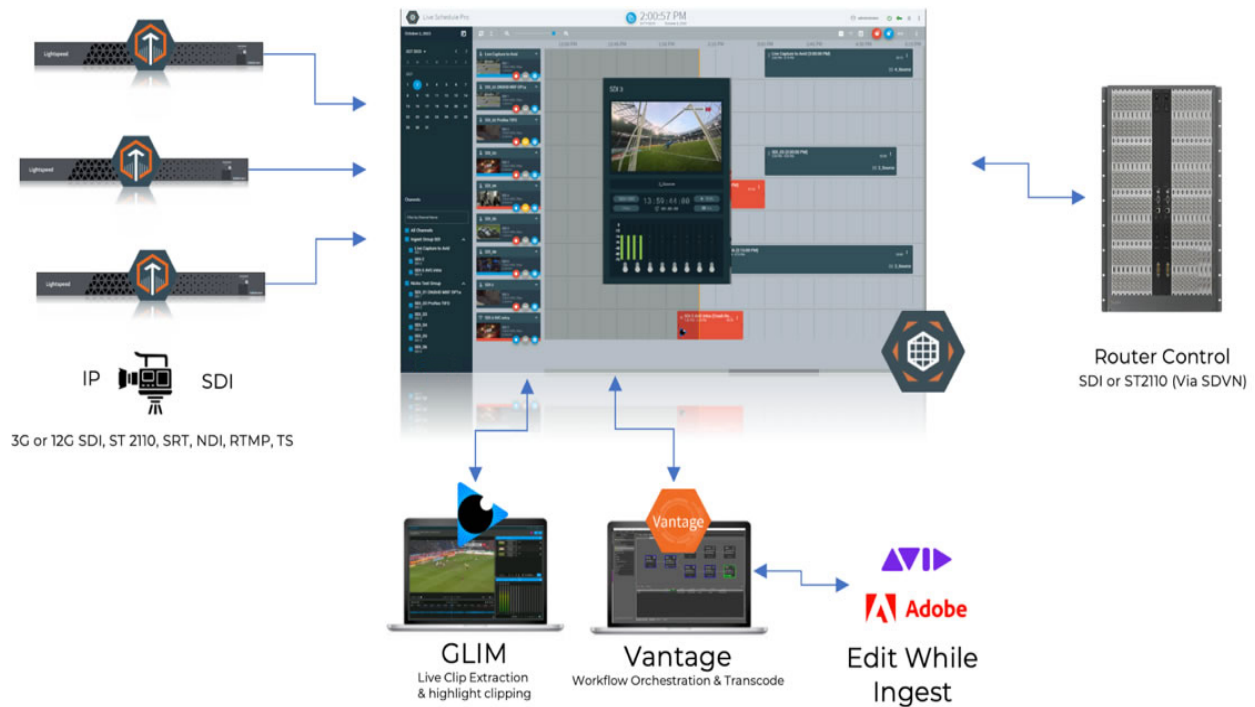
Effortlessly control routes, variables, and labels across multiple events and multi-camera setups, optimizing your workflow for the highest-quality event production.

Precision Timecode Control

Empower operators with precise control over source timecode, including the ability to offset timecode for asynchronous inbound feeds, ensuring synchronized and professional live broadcasts.

You use Live Schedule Pro to create and manage media capture events—automated live recording—for execution in Vantage Live Capture workflows, on a channel-by-channel basis.

Live Schedule Pro automatically submits events to Live Capture workflows in real time; it initiates a job for the associated Capture workflow in Vantage where the media is captured in real time, and written (serialized) to a file.



Live Schedule Pro scales to support concurrent recording requirements in two ways. In a multi-server array, where each server hosts the Vantage Live Service that workflows use to capture media. Or, with multiple, single node (or multi-server) Live Capture domains, each with one Vantage Live Service—and, in Live Schedule Pro, create events for execution on any Live Capture domain identified to Live Schedule Pro.

Multiple users can log in to Live Schedule Pro from different workstations. As users create events, the event schedule is automatically updated on all open browser sessions.

Live Schedule Pro offers these features:

- Client/server architecture
- Easy-to-use, calendar-style web app
- Powerful REST API support
- GLIM integration for highlights & clips
- Avid integration VIA Vantage
- SDI and IP source router control.

These are the key operational tasks you can perform using Live Schedule Pro:

- Create a media recording schedule event by event, for each active Live Capture workflow in one or more domains.
- Add metadata values to each event via variables and labels, which are passed to the workflow when recording starts and stored with the asset as required.
- Create, view, and manage manual, API, and recurring segment events.

- Monitor the status of active Live Capture workflows, summary statistics and details.

Note: Live Schedule Pro does not support events for tape-based Live Capture workflows.

Companion Programs

Live Capture and Vantage client programs that you'll typically use in the course of utilizing Live Capture and managing capture events include:

Source Manager—You use Source Manager to identify and configure SDI and IP-based video sources that you plan to capture. You access the [Source Manager](#) web app in Chrome (minimum version 116; latest version recommended) at <http://localhost:8090>.

Live Capture—You use Live Capture to configure, operate, and control your Live Capture system. Launch the Live Capture web app from the [Vantage portal](#) at <http://localhost|<Remote Host Server Name>/Vantage>.

Vantage Workflow Designer—Workflow Designer is the primary client program in Vantage: you use it to design and configure workflows to meet your media transcoding requirements. In the context of Live Capture, you use Workflow Designer to create and configure Capture workflows to perform serialization of live SDI and IP-based media sources, and you configure channels in Live Capture to correlate a video source to a workflow.

Vantage Management Console—You use the Management Console for administration—In the context of Live Capture, you use Management Console to configure and manage your live SDI sources, and manage workflows, file storage, licenses, client program connections, Capture nexuses, labels, variables, and users.

Live Schedule Pro utilizes these Windows services:

- **Telestream Live Schedule Pro Service**—supports the Live Schedule Pro web application and submits Live Capture jobs by events you create.
- **Vantage Live Service**—connects Live Schedule Pro with a Vantage database to access a Capture workflow's job data. When Live Schedule Pro starts, it automatically connects to the Vantage Live Service databases in domains it last utilized.
- **Telestream RouteMaster Service**—when separately installed, connects Live Schedule Pro with Rascular RouteMaster when using SDI routing control.

Note: These services may be hosted on different Lightspeed Live servers when operating in a Vantage Live Capture array—or multiple, single-node domains. Vantage workflows may be executed on the same or on a different Lightspeed Live Server. From Live Schedule Pro's perspective, multiple Live Capture servers are seen as a unified system.

Optional SDI | IP Source Router Control

Live Schedule Pro implements optional source SDI and IP router control via Telestream RouteMaster, an optional, licensed feature. For details, see [Licensing Live Schedule Pro](#).

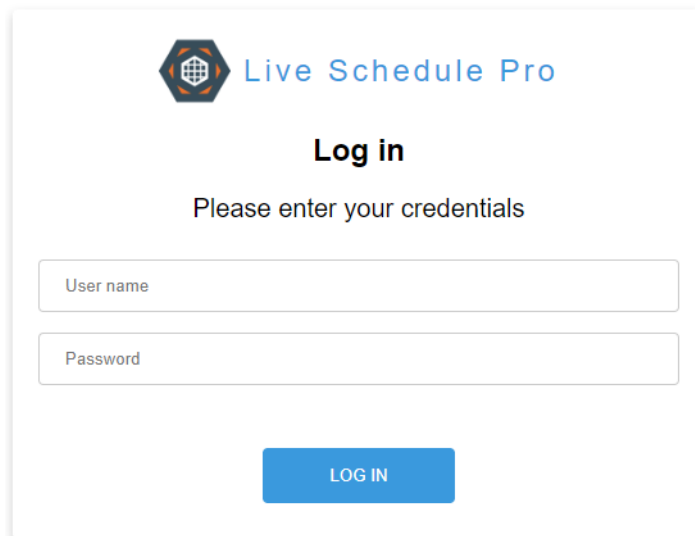
Logging in and Out of Live Schedule Pro

Authentication in Live Schedule Pro is required. To change your password, see [Configuring Live Schedule Pro Credentials](#). Only one user name (*admin*) is permitted.

Note: If you lose your password, reset it by moving the appSettings.general.json file out of the Scheduler folder and then uninstall and re-install Live Schedule Pro. Now, copy all of the settings (minus the username/password) settings to the newly-created json file. Now, you can login with the default credentials again (admin/telestream!1).

Logging In

When you start Live Schedule Pro in Chrome (<http://localhost|<server name>:6500>) with authentication enabled, Live Schedule Pro presents a log in panel:




To log in, enter these default credentials:

- User Name: *admin*
- Password: *live!*

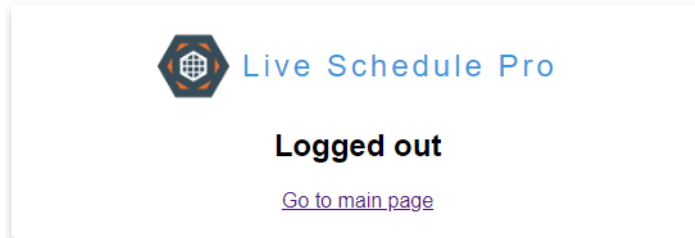
Click LOG IN to authenticate the credentials and display the main window.

Note: To change your password, see [Configuring Live Schedule Pro Credentials](#).

Logging Out

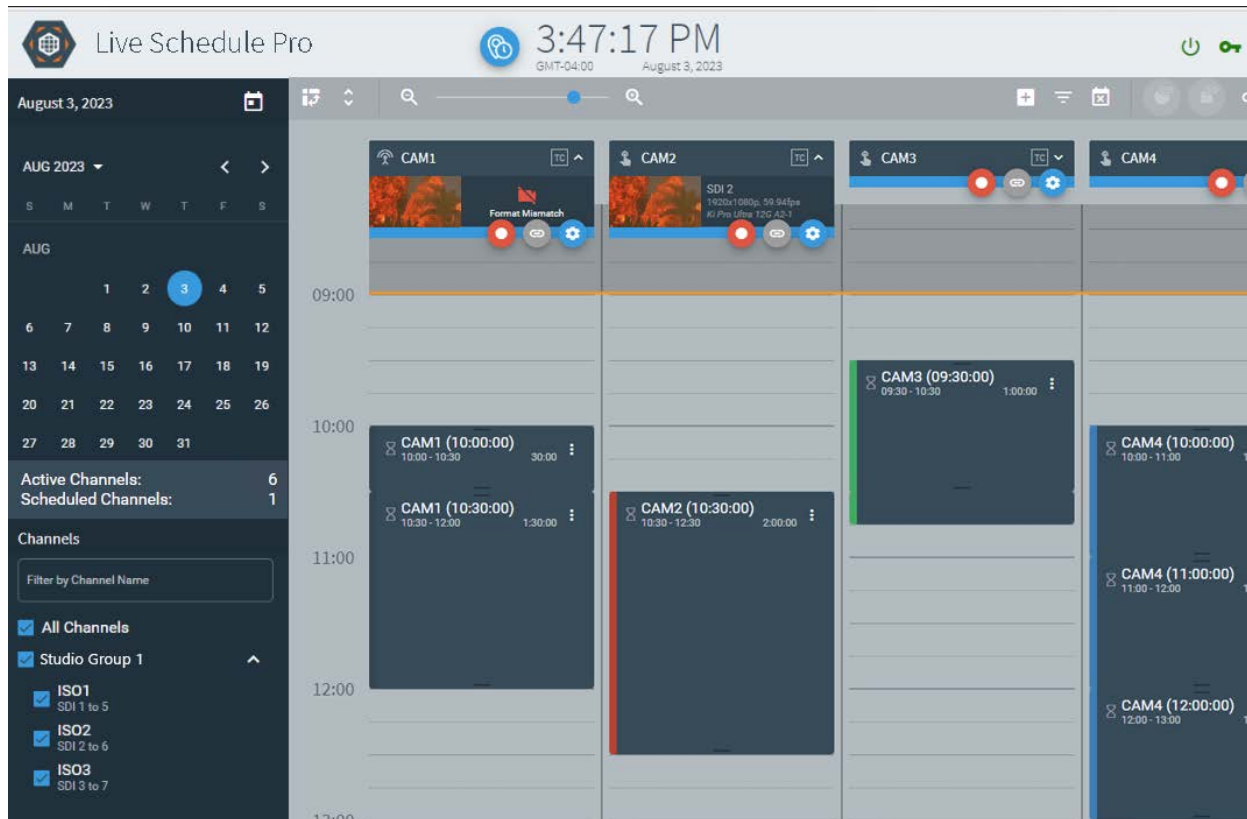
To log out of Live Schedule Pro, close the browser tab or select More  menu > Log Out.

Live Schedule Pro logs you out and displays this panel:



Live Schedule Pro Web App

You use the Live Schedule Pro web app to configure and control Live Schedule Pro, and to create events for SDI and IP sources that you want captured, automatically starting and stopping video capture on an event-by-event basis, with optional source SDI and IP router control.



In this depiction, you select the date from the calendar panel in the upper left; select channels from the channels panel in bottom left. Filtered events are displayed in the main event window on the right, ordered top-down by time and across by channel. Channels are associated with a specific video source, and configured in Vantage workflows and in Live Capture.

Quick Start

After installing Live Schedule Pro for the first time, you should follow these steps to quickly create capture events in Live Schedule Pro and start capturing video:

1. Create and configure video sources—in Source Manager, configure your SDI sources for live ingest, to meet your specifications. Create and configure any IP-based video sources you are going to capture.

See the Live Capture User's Guide > Managing Video Sources.

2. Create Capture workflows— In Vantage Workflow Designer, create and configure a new Capture workflow for each SDI and IP source in Source Manager. Each workflow is connected to one source, and provides a channel for the Live Capture web apps to use or monitor.

See the Live Capture User's Guide > Creating Live Capture Workflows topic for details. See the Vantage Workflow Designer User Guide for general information regarding creating and configuring workflows.

3. Activate your Live Capture workflows—In Workflow Designer, activate each workflow you plan to create events for, so that you can create capture events for this workflow's channel.
4. Verify and configure your channels—Open and log in to Live Schedule Pro ([Logging in and Out of Live Schedule Pro](#)) and verify that all channels that you want to work with display in the Channels panel. Configure each channel as appropriate. See [Working with Channels](#).
5. Create Capture events—In Live Schedule Pro, select a date in the calendar panel, and then create capture events for each channel as appropriate. See [Creating and Working with Events](#).

Note: If your workflow is inactive or configured incorrectly for use in Live Capture, Live Schedule Pro won't display its channel for selection.

Scaling Live Capture

Live Schedule Pro can scale with your Live Capture domain, as you add more Lightspeed Live servers and concurrent live capture capacity.

In the original scheme, scaling occurred by adding more capture servers to a single Live Capture domain—creating an array—and Live Schedule | Live Schedule Pro connected to the domain's database via the Vantage Database Gateway. In this configuration, all channels of the Lightspeed Live Capture nodes associated with the domain are displayed in Live Schedule Pro, and the domain grows in complexity as it is configured to manage the stores and services of each of the Live Capture nodes.

Live Schedule Pro 1.1 and future versions enable you to simultaneously connect to multiple domains dynamically. In this scenario, each domain is often a simpler, single-node (server) domain (though it may be an array as well). This allows an operator to add Live Capture capacity to a Live Schedule Pro-managed capture system quickly. For

example, virtual machine instances, created from a single node domain template, can be added as they come online. This scheme does not require a dedicated SQL server and a multi-server array for all capture nodes, since all capture systems can be managed as independent, single node domains with their own SQL Express database.

For domain connection and event management details, see [Event Management for Multiple Domains](#).


Using the Live Schedule Pro API

You can use the Live Schedule Pro API to create and manage events from your own system or custom program. The Lightspeed Live Schedule Pro API enables scheduling, management, and query of capture events to be controlled manually via the HTTP web service. The API is implemented in the Telestream Live Schedule Pro Service.

The Live Schedule Pro API is described at

`http://<Server> | localhost:6500/help/index.html`

where <Server> is the Lightspeed Live Server host name | IP address or keyword *localhost* when accessed locally.

You can also view Live Schedule Pro API help system directly from Live Schedule Pro's More  menu > REST API Help.

Licensing Live Schedule Pro

Live Schedule Pro is an optional, licensed product that automates Live Capture event scheduling. Live Schedule Pro is not licensed in Vantage. Activating your license is performed in the Live Schedule Pro web app and described in [Managing Your Live Schedule Pro License](#).

To obtain licenses or obtain licensing information or assistance, see [Obtaining Support | Information | Assistance](#).

Installing Live Schedule Pro

Use this chapter to understand and meet server, software, database, and network requirements for Live Schedule Pro, and to install/update Live Schedule Pro.

If you're planning to use Telestream RouteMaster, see [Installing/Updating Telestream RouteMaster](#) to install it on your Lightspeed Schedule Pro server and license it for operation.

Installing Live Schedule Pro is easiest when you plan carefully, and you have a working knowledge of Windows server administration, networking, and installation and configuration of enterprise-class software. Consult your IT group for assistance as necessary.

Note: Go to support.telestream.net/login to download product installers and updates, obtain product support and assistance, and browse user guides, application notes, and integration guides.

Topics

- [Live Schedule Pro Prerequisites](#)
- [Anti-Virus Software Recommendation](#)
- [Licensing Live Schedule Pro](#)
- [Updating Live Schedule Pro](#)
- [Installing Live Schedule Pro](#)
- [Installing/Updating Telestream RouteMaster](#)

Live Schedule Pro Prerequisites

Before you install Live Schedule Pro and start scheduling Live Capture events, make sure that:

- On a Live Capture array—each server is addressable by its server name. Name resolution should be provided through DNS or by entries in each server’s hosts file.
- Each Live Capture workflow has its Capture action configured with Manual | Web Service | Recurring Segment triggers. If not, its channel won’t display in Live Schedule Pro, making it available for creating events. (In your workflow in Workflow Designer, see the Capture action man page for details.)
- Variables and labels (both of which are optional) are defined in Vantage and implemented in a workflow’s Capture action, with values set as appropriate in Live Schedule Pro.

Browser Support

Live Schedule Pro is implemented for viewing in the Chrome browser (minimum version 116; latest version recommended). Other browsers are not supported. Chrome is installed by default on Live Capture servers and configured to operate properly. Windows is configured to permit Chrome to update automatically.

Server Requirements

For best overall Live Capture performance, you should only install Live Schedule Pro on a dedicated Windows server that does not run other high-resource applications. Here are the requirements for servers that host Live Schedule Pro.

Hardware	Requirements
Processor	64-bit single 8-core processor or greater; 8 MB cache or greater recommended.
Operating System	Windows Server 2016 2019 2022 (64-bit) Standard or Data Center Edition
RAM	At least 16GB; 32GB or greater recommended.
Disk space	OS Drive: 256 GB minimum Data Drive: SSD, 500 GB+ recommended
Ethernet	Gigabit Ethernet 1 GigE minimum. Recommend 10GigE.

Note: Automatic Windows, third-party software updates, and automatic restarts should be disabled. Schedule update installations and system restarts only during planned maintenance periods to prevent Live Capture operations from being disrupted.

Firewalls and Port Settings

Telestream recommends that you disable the Windows Firewall on all computers that communicate with or support Vantage and Telestream services. The default Windows Firewall configuration blocks access between services running on multiple Live Capture servers and from other workstations, such as those running Capture client software. If you do run a firewall, these ports must be open to allow Live Schedule to communicate.

Port 6500 should be open on your firewall for Live Schedule Pro to function properly.

For HTTP access to client applications, open port 80.

Live Capture Compatibility

This version of Live Schedule Pro is compatible with Live Capture 3.6.2 or 3.6.3. If you are operating with a previous version of Live Capture, either update Live Capture to 3.6.3 or only use Live Schedule Pro 1.1.

Anti-Virus Software Recommendation

Telestream recommends that you do not use anti-virus software on any servers related to Live Schedule Pro or Live Capture operations. You should not enable real-time scanning.

If you do use anti-virus software, you should identify Live Capture, Live Schedule Pro, and Vantage as safe or trusted applications. Telestream recommends that you disable real-time file scanning, because it will impact performance and potentially lock files being processed, impacting Live Capture and Vantage's ability to operate properly.

Note: Be sure to turn off anti-virus software during Vantage, Live Capture, and Live Schedule Pro installation or install the anti-virus software after installation is complete.

Licensing Live Schedule Pro

Live Schedule Pro is an optional, licensed product that automates Live Capture event scheduling. Live Schedule Pro is not licensed in Vantage. Activating your license is performed in the Live Schedule Pro web app and described in [Managing Your Live Schedule Pro License](#).

To obtain licenses or obtain licensing information or assistance, see [Obtaining Support | Information | Assistance](#).

Updating Live Schedule Pro

Note: Previous versions of Live Schedule | Live Schedule Pro bundled Telestream RouteMaster and automatically installed it. Therefore, uninstalling Live Schedule | Live Schedule Pro here in this task automatically uninstalls Telestream RouteMaster as well.

To continue using Telestream RouteMaster you must install it again. See [Installing/Updating Telestream RouteMaster](#).

To update a previous version of Live Schedule or Live Schedule Pro to the current version, follow these steps:

1. Log in to support.telestream.net/login to download the Live Schedule Pro installer.
2. Make sure that your server has met all of the requirements in [Live Schedule Pro Prerequisites](#) and [Anti-Virus Software Recommendation](#).
3. Make sure that no events are currently running and no events are immediately scheduled.
4. Back up the Live Schedule | Live Schedule Pro database file (see [Backing Up the Database](#)).
5. If you are updating Live Schedule Pro V1.1 on a server with Vantage web apps installed, go to the Windows Control Panel > Programs and uninstall Vantage Web Apps, unless Live Schedule Pro is installed on a Live Capture server—in this case you should not uninstall web apps as it will cause Live Capture to fail to operate.
6. In the Windows Control Panel > Programs, uninstall Telestream Live Schedule Pro. In the Live Schedule Pro dialog, select Automatically close and restart and click OK.
7. After downloading or receiving the LS Pro Installer ZIP file, unzip it, and run the Telestream Live Schedule Pro 1.2 installer on the target server.
8. Read the license agreement and check I accept the terms of the License Agreement if you do agree, and click Install.
The installer executes and completes installation. Click Finish to dismiss it.
9. In the Windows Control Panel > System and Security > Administrative Tools > Services panel, verify that the Telestream Live Schedule Pro Service has started and is running.
10. Perform initial configuration of Live Schedule Pro as appropriate. See [Quick Start](#).

Installing Live Schedule Pro

To perform a clean installation—installing Live Schedule Pro on a server that has not previously had Live Schedule or Live Schedule Pro installed—follow these steps:

1. Make sure that your server has met all of the requirements in [Live Schedule Pro Prerequisites](#) and [Anti-Virus Software Recommendation](#).
2. Go to support.telestream.net/login and log in to download the installer onto the target server.
3. After downloading or receiving the LS Pro Installer ZIP file, unzip it, and run the Telestream Live Schedule Pro 1.2 installer on the target server.
4. Read the license agreement and check I accept the terms of the License Agreement if you do agree, and click Install.
The installer executes and completes installation. Click Finish to dismiss it.

5. In the Windows Control Panel > System and Security > Administrative Tools > Services panel, verify that the Telestream Live Schedule Pro Service has started and are running.
6. Obtain and install your license. See [Licensing Live Schedule Pro](#).
7. Perform initial configuration of Live Schedule Pro as appropriate. See [Quick Start](#).

Installing/Updating Telestream RouteMaster

If you plan to use Telestream RouteMaster for integration with Live Schedule Pro, perform these tasks to install RouteMaster and deploy the license.

Note: If you are using an earlier version of Live Schedule Pro or you are still using Live Schedule, your Live Schedule Pro update process uninstalled Telestream RouteMaster silently. To update to the current version of Telestream RouteMaster or install it for the first time, proceed with these tasks.

Note: The RouteMaster installer file is included in the Live Schedule Pro 1.2 installer ZIP file that you either downloaded or received. To purchase and obtain the Telestream RouteMaster license, contact your Telestream sales representative or authorized Telestream reseller, or contact Telestream Licensing Assistance directly—see [Obtaining Support | Information | Assistance](#).

Installing Telestream RouteMaster

To install Telestream RouteMaster on your Live Schedule Pro server, follow these steps:

1. Open the Live Schedule Pro 1.2 installer folder that you unzipped during Live Schedule Pro update/installation, and copy the Live Telestream RouteMaster 2.6 installer EXE file onto the target IIS server host in your Live Capture domain.
2. Run the RouteMaster_2.6.0.1_install.exe on the target server to start the installer.
3. Select Install Mode—Click Install for all users (recommended) (default).
4. Welcome to the RouteMaster Setup Wizard—click Next to start installation.
5. License Agreement—Read the license agreement and click I accept the agreement if you agree to its terms, and click Next to continue.
6. Select Destination Location—accept the default location, and click Next.
The installer installs the program in `C:\Program Files (x86)\Telestream\RouteMaster\`.
7. Select Components—Select SERVICE: Install RouteMaster as a Windows Service with linked desktop app, and click Next.
8. RouteMaster Mode—Use the default TCP/IP port 7777 and click Next.
9. Select Start Menu Folder—Accept the default TELESTREAM Start Menu folder for the shortcut, and click Next.
10. The installer installs Telestream RouteMaster.

11. Completing the RouteMaster Setup Wizard—check Connect to RouteMaster service and click Finish to complete installation.
12. Create a shortcut on the desktop, configured to use this target: *C:\Program Files (x86)\Telestream\RouteMaster\RouteMaster.exe" -c http://localhost:7777.*

Note: You should always use this shortcut to start the RouteMaster program.

Adding the Telestream RouteMaster License

After installing Telestream RouteMaster, follow these steps to install the license:

1. On the Live Schedule Pro server, copy the Telestream RouteMaster license file that you obtained from Telestream Licensing to *C:\Program Files (x86)\Telestream\RouteMaster*.
2. In the Windows Control Panel > System and Security > Administrative Tools > Services panel, restart the Telestream RouteMaster Service or restart the server before configuring Telestream RouteMaster.

Note: After installing and licensing Telestream RouteMaster, proceed to [Implementing RouteMaster Router Control](#) for configuration guidelines.

Managing Live Capture Events

Scheduling Live Capture events for automated recording means using the Live Schedule Pro web app to identify and manage your source channels, and to schedule, configure, monitor, and manage your Live Capture events on those channels.

Topics

- [Launching the Live Schedule Pro Web App](#)
- [Live Schedule Pro's Web App](#)
- [Displaying the Event Panel by Calendar Date](#)
- [Working with Channels](#)
- [Creating and Working with Events](#)
- [Showing/Hiding Vantage Jobs](#)
- [Avoiding Scheduling Conflicts](#)
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- [Using Metadata Labels in Events](#)
- [Previewing Media with Glim](#)

Launching the Live Schedule Pro Web App

To launch the Live Schedule Pro web app and automatically connect to the Telestream Live Schedule Pro Service, open Chrome (minimum version 116; latest version recommended) and enter `http://localhost:6500/` | `http://<Remote host name>:6500/` in the site bar.

When you are accessing Live Schedule Pro locally (from Chrome running directly on the Telestream Live Schedule Pro Service host), use the keyword `localhost` or the server's host name. When you're accessing Live Schedule Pro remotely (from a workstation that is accessing another computer hosting the Telestream Live Schedule Pro Service), use that host name.

Note: If you are accessing Live Schedule Pro from a workstation other than the Telestream Live Schedule Pro Service host, you may have to add the host's DNS name | IP address to your hosts file. Specifically, access to More > Router Configuration may be de-activated.

Live Schedule Pro's Web App

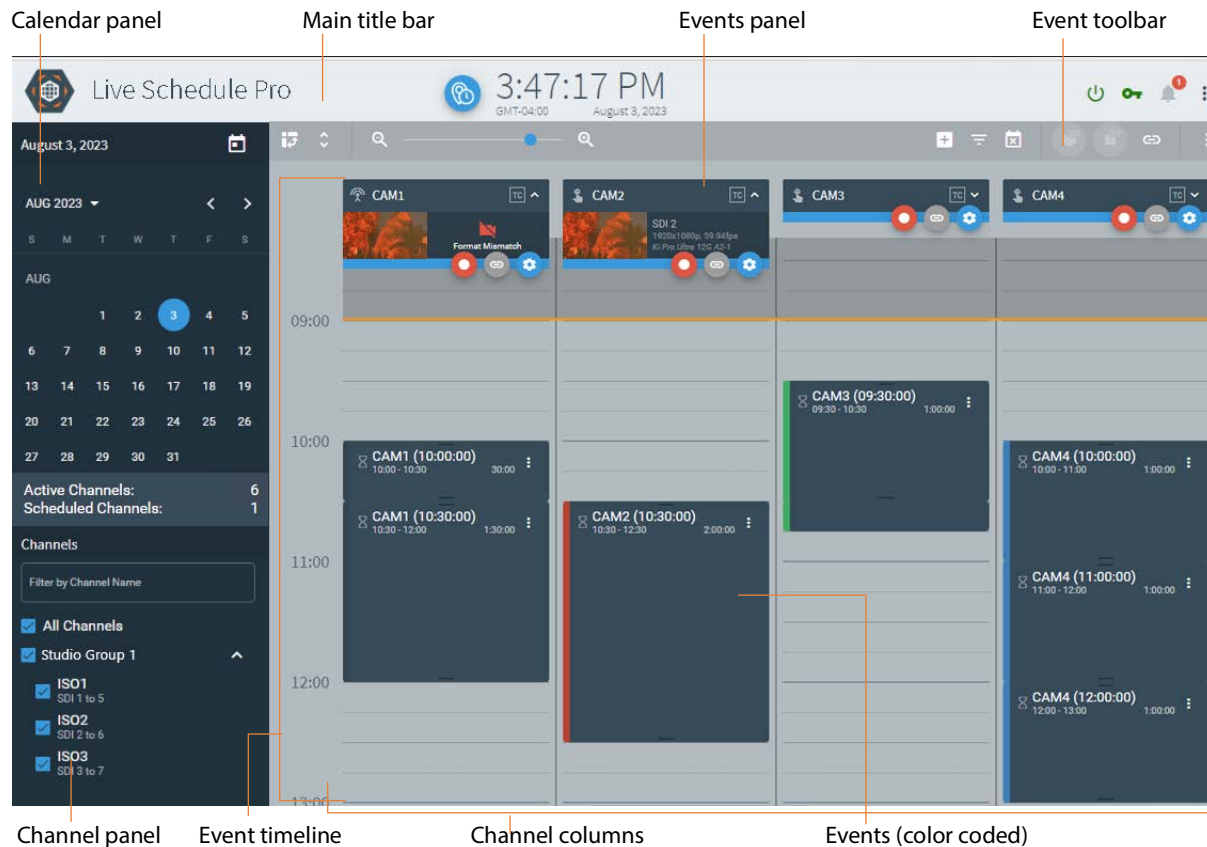
Live Schedule Pro displays events you create directly in Live Schedule Pro. It also displays crash recording events and web service events.

Topics

- [Main Window](#)
- [Using Live Schedule Pro's Title Bar](#)
- [Live Schedule Pro Panels](#)
- [Using the Events Panel](#)

Main Window

Here is a typical view of the main window of the Live Schedule Pro web app:

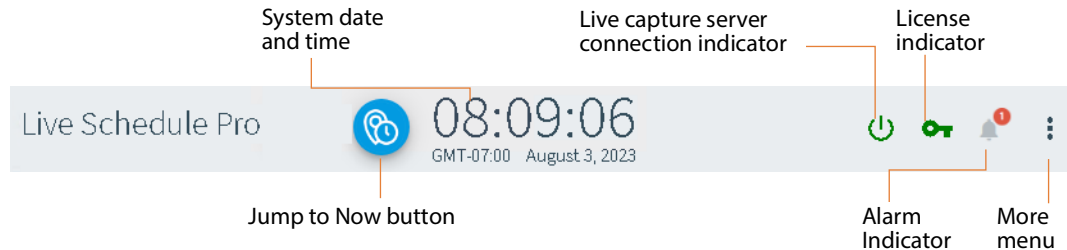


The main window is comprised of the title bar at the top with important information and buttons, and the main menu to access administrative/configuration features. On the left, Live Schedule Pro displays the calendar and channel panels.

The large, central panel is the events panel, which displays all of the capture events you've created, in various colors and patterns to help you understand the state of all your events as Live Schedule Pro executes them in real time.

Using Live Schedule Pro's Title Bar

The title bar provides general information, including computer clock date and time, and connection and license status:

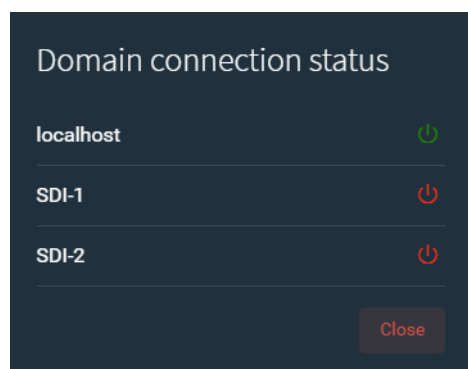


Jump to Now Button—Click to center the events panel on today's date and time.

System Date and Time—Displays the Telestream Live Schedule Pro Service host computer's clock date and time, and time zone of the host. If Live Capture servers are not in the same time zone as the Telestream Live Service (which connects to the Vantage database), you should add a channel offset time to account for the time difference. See [Configuring a Source Channel's Time Offset](#).

Live Capture Server Connection Indicator—When it displays green, Live Schedule Pro is connected to the Lightspeed Live Capture server or, in a multi-domain environment, is connected to all Lightspeed Live Capture servers under event management. When it displays red, the connection (or connections) have failed and you can't control recording. Orange indicates that, in a multi-domain environment, one or more domain connections have failed.

Click the connection indicator to display the Domain Connection Status dialog, with a list of all Live Capture domains under event management in Live Schedule Pro and their connection status:




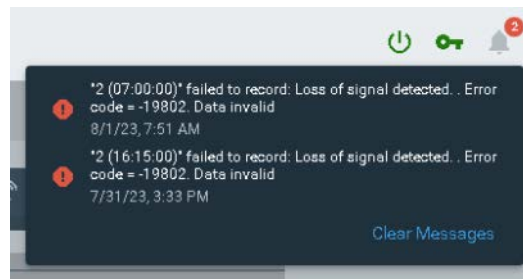
Resolve the problem with any servers that are not connected before continuing work.


To manage multiple domains in your Live Capture array, see [Event Management for Multiple Domains](#).

License Indicator—When the license  button displays green, your license is enabled. When it displays red, the license is expired or deactivated. The license button

displays orange when your maintenance and support license or other entitlements have expired. Click the button to activate or deactivate your license—see [Managing Your Live Schedule Pro License](#).

Alarm Indicator—The alarm  indicator button displays the error count—the number of alarms—recorded since you last checked and cleared them. Click the button to review alarm details and clear the messages:



Main More Menu—Click the Main  menu button in the title bar to configure Live Schedule Pro, perform database operations and review version information or access the Live Schedule Pro REST API documentation.

Live Schedule Pro Panels

Live Schedule Pro's window is comprised of these panels:

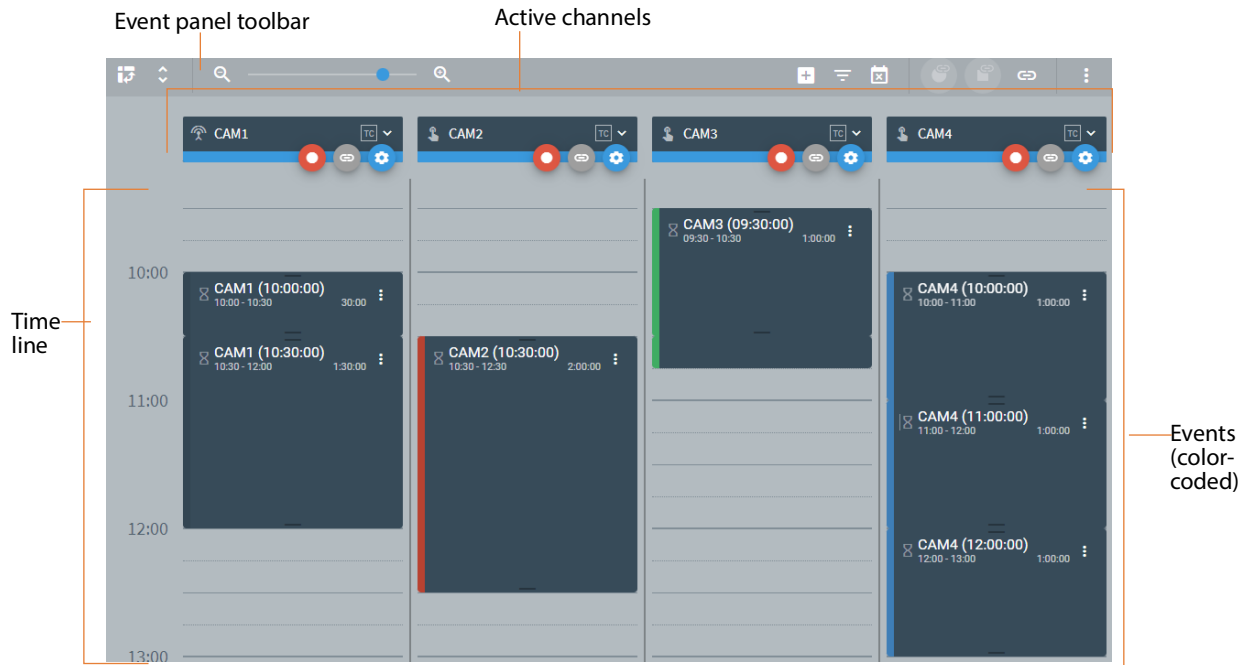
Events Panel—Displays events for the selected channels on the schedule panel's event table, for the selected date ([Displaying the Event Panel by Calendar Date](#)); see [Using the Events Panel](#).

Calendar Panel (upper left)—Displays a calendar, which you use to navigate by year and month, and select the date you want to focus on. When you click a date, the events panel displays the event schedule for that date, by channel. Controls on the calendar panel enable you to select the year and month to display. See [Displaying the Event Panel by Calendar Date](#).

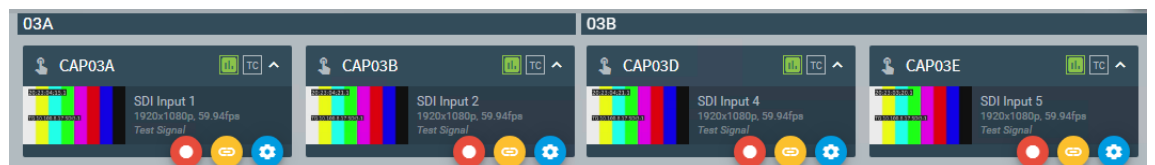
Channel Status Panel (lower left)—Displays the status of all channels in the selected group/nexus (see [Working with Channels](#)), including channel pool indicators if ICM is enabled ([Implementing Intelligent Channel Management](#)). You check the channels that you want to display and work with.

Using the Events Panel

This is a typical view of the events panel—shown here vertically. You can display the panel either horizontally or vertically—enabling you to view events—represented by event cards—left to right in rows, or top to bottom in columns, organized by source channels to suit your preference.



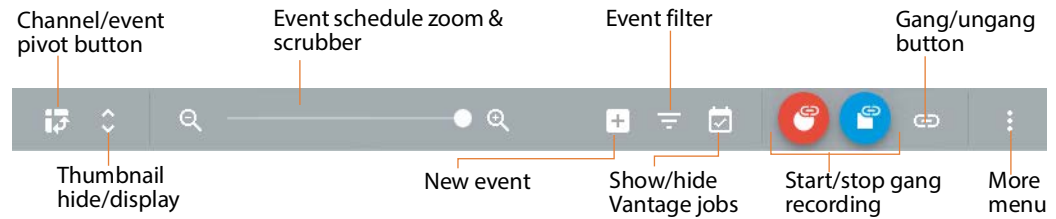
When ICM (*Implementing Intelligent Channel Management*) is enabled and you've organized your channels into pools, the channel cards are organized by pool—where each pool of channels is identified by pool title directly above the cards:




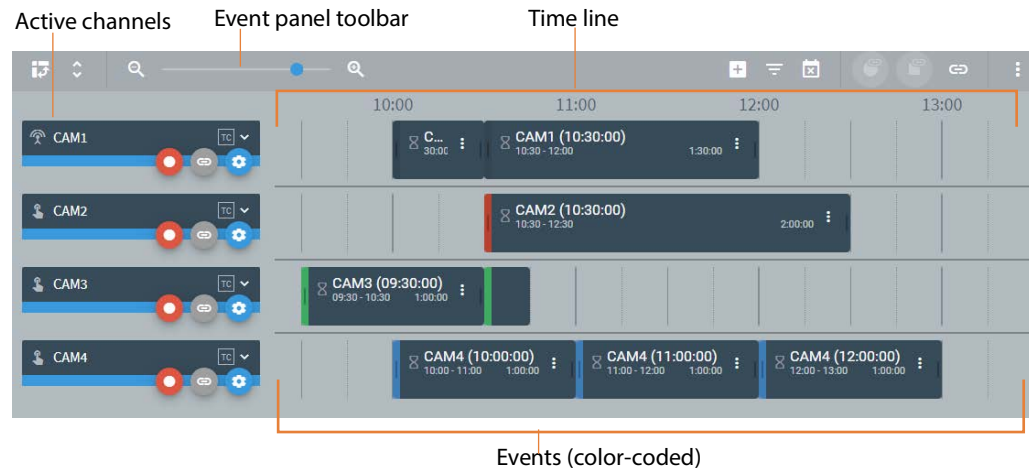
Each row/column is divided into time blocks on a 24-hour period and displays events that have been added, by time. Events are displayed ordinarily, and they are color- and pattern-coded to make it easy to determine their state.


Note: When you've zoomed out far enough in time that the events are too small to display details, hover over an event to temporarily display its event card in full size.

The toolbar provides access to tools that you can use to work with events:





Channel/Event Pivot Button—Click the Channel/Event pivot button  to rotate the event table: orienting the events horizontally by row as shown below, with source channels on the left and events proceeding left to right on the timeline, or as shown above, orienting the events vertically by column, organized by their source channels across as column headers and events proceeding top to bottom on the timeline. In this view, events in the table display vertically (in time order), organized by channel across the top of the grid.

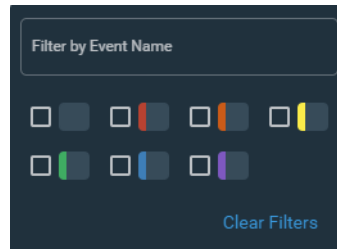



Show/Hide Thumbnails—Click the Show/Hide  button to display or hide the video thumbnail on the channel card. By default, thumbnails are not displayed. Click the thumbnail to display the channel's Preview dialog (see [Viewing a Channel's Source](#)).

Event Schedule Zoom Bar and Scrubber—Use the event schedule zoom bar and scrubber to zoom in and out on the schedule to view events as required (see [Setting the Schedule Time Scale](#)).



New Event Button—Click the  button to display the Configure Event dialog and create and configure a new event (see [Creating and Configuring Events](#)).


Filter Event Button—Click the  button to display the Filter Event dialog and limit the events displayed to those that meet the filter criteria—enter the string—or select an event card color—and press Enter to filter the events that display.




When you've applied a filter, the button displays blue  to indicate the filtered state; events that are excluded display translucent and are disabled. To enable all events, display the filter and clear the field by clicking the X button or simply delete the text string. To display all events, delete the string.

Show/Hide Vantage Jobs—Click the  button to alternately show or hide capture events that you have created directly in Live Capture by starting a crash recording (see [Crash Recording a Single Channel](#)).

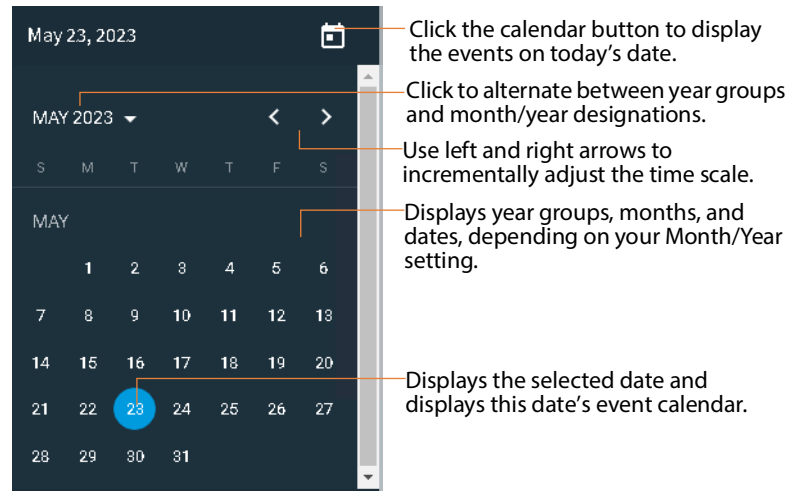
Start/Stop Ganged Event—Click the  button to start a crash recording on all ganged channels. Click the  button to stop the current crash recording.

Gang Channels—Click the  button to gang or ungang all of the visible (selected) channels.

Schedule Menu—Click the  menu to import or export events. This feature is currently inoperative.

Displaying the Event Panel by Calendar Date

You use the calendar panel in the upper left corner of the Live Schedule Pro window to navigate by year and month, and select a date to view its events:



To select a specific year, follow these steps:

1. First, pick a year group—click on the Month/Year picker to display either year groups, or a month and year. For example: 2016-2039, or Dec 2023. Year groups span periods of approximately 20 years.
2. Browse year groups—click the left and right arrows to incrementally move through the groups to locate the group your target year is in.
3. In the year table below the toolbar, click on the year you want to view.
4. With the proper year selected, click on the month, and then the date you want to view.

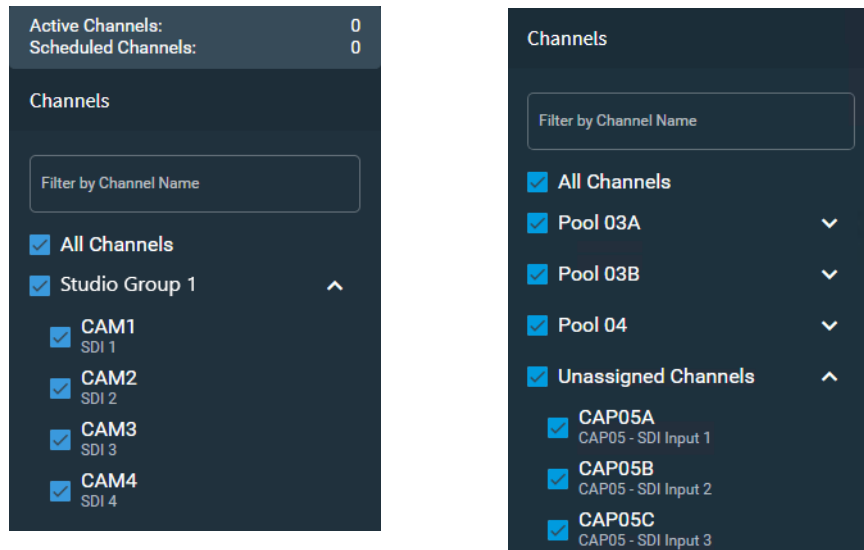
To select a specific month when the year is already correct, follow these steps:

1. Browse months—click the left and right arrows to incrementally move through the months to locate the month you want to view.
2. With the proper month selected, click on the date you want to view.

Working with Channels

The Channel panel—directly below the Calendar panel—displays all of the channels identified by active workflows in all Live Capture systems ([Event Management for Multiple Domains](#)) identified in Live Schedule Pro.

On the left, channels are depicted by nexus, without Intelligent Channel Management (ICM) enabled. On the right, with ICM (see [Implementing Intelligent Channel Management](#)) enabled, channels are displayed by pool, followed by unassigned channels:



Without using ICM, channels are organized by nexus. You define and manage nexuses in the Vantage Management Console. You can filter channels using strings in the Filter field, and you can select sets by nexus, or channels individually, from one or more nexuses.

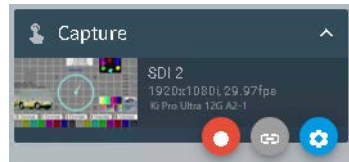
Job Summary

Directly above the Channels panel is the job summary table, where event statistics display in real time. Active channels are channels that are currently recording Live Schedule Pro events. Scheduled channels are channels that have at least one live schedule pro event scheduled for the currently selected day.


Channel Cards


You check the channels that you want to display in the events panel and work with. For each channel you've selected in the channels panel, Live Schedule Pro displays a


channel card and its events. Here is a typical channel card shown expanded, with the components displayed:




The icon in the upper left corner indicates the type of event trigger that the workflow controlling this channel is configured to support:


Manual—the Manual  icon indicates that the Capture workflow for this channel is configured to support capturing via Live Schedule Pro events and crash recording via client applications.

Recurring Segment—the Recurring Segment  icon indicates that the Capture workflow for this channel is configured to support capture via recurring segment events, either from Live Schedule Pro events, crash recording, or events generated via the Live Capture API. Recurring Segment events trigger a repeating segment event that starts and ends at a specific time. Recurring trigger events are not started or stopped as frame accurate recordings—they include extra time for the recording to start and stop.

Web Service—the Web Service  icon indicates that the Capture workflow for this channel is configured to support capturing via Live Schedule Pro events and crash recording via client applications as well as capturing via events generated via the Live Capture API.

The channel card identifies its events by row or column, as displayed by you in the events panel. The channel card includes a Show/Hide  button, so that you can expand it to display its components and work with the channel, or hide it to save window space.

Note: If you have implemented router control, the channel card displays a third row of text to the right of the thumbnail, immediately under the frame size and rate—the mnemonic, or name of the destination.

The channel card also indicates channel status by a colored state bar (see [Event State Color and Pattern Scheme](#)) at the bottom, based on the next event's status in real time. If you've set a source time offset, the offset displays in red at the top of the card, just to the left of the Show/Hide  button (see [Configuring a Source Channel's Time Offset](#)).

For example, here's an event with a 2 hour source time offset has just been queued, so the bar displays yellow—the same as the upcoming event:



You can also gang and ungang channels and crash record the channel, and perform other tasks via the channel menu.

Topics

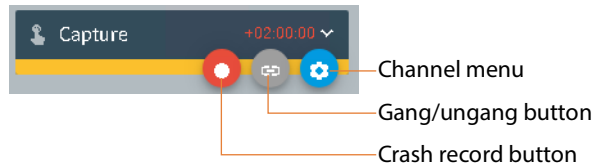
- [Collapsed and Expanded Views](#)
- [Performing Channel-Related Operations](#)
- [Crash Recording a Single Channel](#)
- [Performing Gang Recording](#)
- [Viewing a Channel's Source](#)

Collapsed and Expanded Views

Channel cards have two views: collapsed and expanded, which is controlled by clicking anywhere in the title bar.

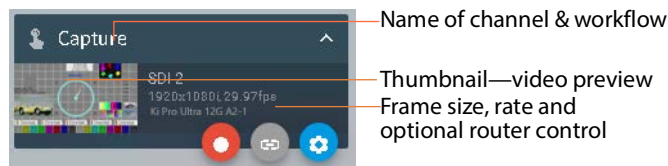
Collapsed View

In collapsed view, only the Capture workflow name and the optional source time offset ([Configuring a Source Channel's Time Offset](#)) is displayed at the top, along with the crash record, gang/ungang and channel menu buttons:

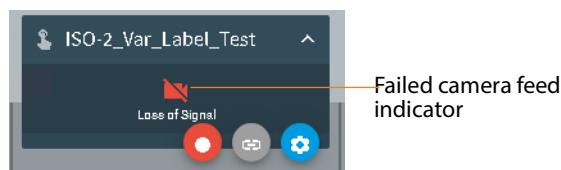


Expanded View

In expanded view, the video thumbnail displays with stream metrics and router details, if enabled, plus warnings:

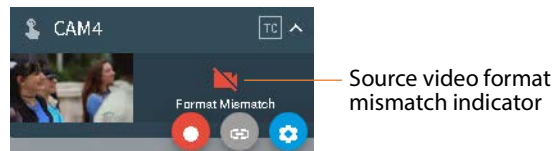


Loss of Signal—Live Schedule Pro alerts you to the problem by displaying a failed camera feed icon instead of the video thumbnail:



Resolve the loss of signal to restore the video stream.


Video Format Mismatch—when you’ve configured your Capture workflow to restrict SDI input to a specific frame type and rate (for example, 1080i@29.97), Live Schedule Pro alerts you to a source video format mismatch by displaying a red camera badge in the channel, with the text *Format Mismatch*:

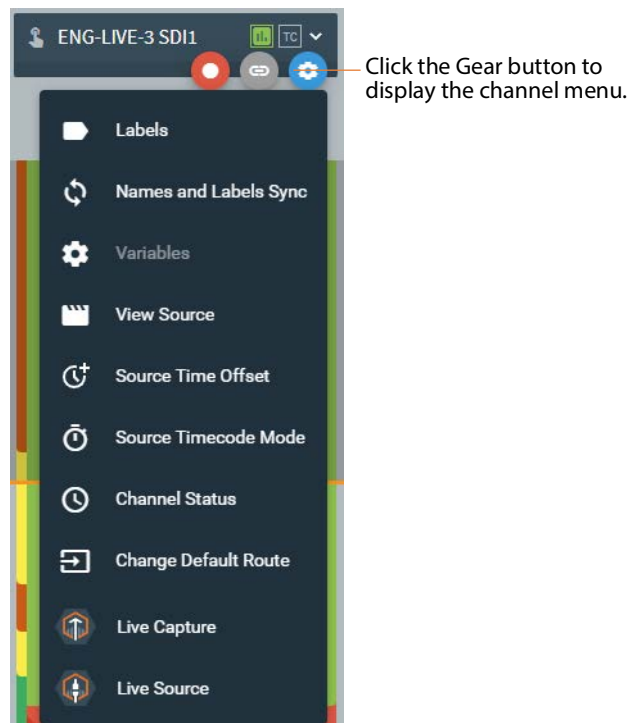


For details about configuring the Restrict Input control in Live Capture, see the Capture action man page in Workflow Designer.

Resolve the mismatch to restore event processing, as appropriate.

Performing Channel-Related Operations

To perform channel-related tasks on a target channel, click on the gear  button and select from the menu:



Operations you can perform via the channel menu...

- **Labels**—Select to modify values in labels attached to this channel’s workflow (see [Setting Channel-level Labels](#)). If the tab is disabled, it indicates that there are no labels in the workflow.

- **Names and Labels Synchronization**—Select to synchronize the value in a label parameter attached to this channel’s workflow (see [Publishing Event Names in Labels](#)) with its event name in Live Schedule Pro.
- **Variables**—Select to modify values in variables used in this channel’s workflow (see [Setting Channel-level Variables](#)). If the tab is disabled, there are no variables in the workflow.
- **View Source**—Select to display the channel’s source dialog which displays a proxy in real time along with details and an audio meter (see [Viewing a Channel’s Source](#)). Or, double-click the thumbnail on the channel card.
- **Source Time Offset**—Select to provide an offset time for events on this channel (see [Configuring a Source Channel’s Time Offset](#)).

The Source Time Offset setting enables Live Capture to use the source timecode and offset it against the Live Schedule host’s clock time. For example, if the Live Schedule server time is 13:00 and an event is scheduled to start at 13:05:00:00 with a source time offset set at -02:00:00:00 then the schedule uses 11:05:00:00 on the source timecode to trigger the recording.

Or, for example, to control a channel on a server that is not located in the same time zone as other nodes on the domain.

- **Source Timecode Mode**—Specifies that captures for this channel should ignore the source timecode or specifies that the channel’s timecode source as Source | Computer Clock | None | Analog LTC. For details, see [Specifying a Channel’s Source Timecode Mode](#).
- **Channel Status**—click to display the Channel Status dialog, listing all scheduled events and recording jobs on this channel (see [Monitoring Channel Status](#)).
- **Change Default Route**—When default routing is enabled, you can specify a route that is different from the system-wide default route. Select from the routes in the menu or select Same as General Settings (see [Implementing RouteMaster Router Control](#)).
- **Live Capture**—Select to display the Vantage web portal on the target Live Capture domain associated with this channel. By default, it displays the Vantage portal associated with the host for the channel. The first time you use this command, you should choose the Live Capture domain for this channel and provide Vantage user credentials for accessing the domain.
- **Live Source**—Select to display Source Manager (`http://<Live Capture server host name | IP address>:8090`) on the target Live Capture domain associated with this channel. Log in with your credentials to view the web app.

Displaying the Vantage Portal

Using the Vantage Portal to access web apps establishes and maintains Vantage login information that is essential to using Vantage web apps.

To display the Vantage portal, enter the Vantage Portal’s URL:

`http://localhost | <Live Capture Server host name> | <IP Address>/Vantage`

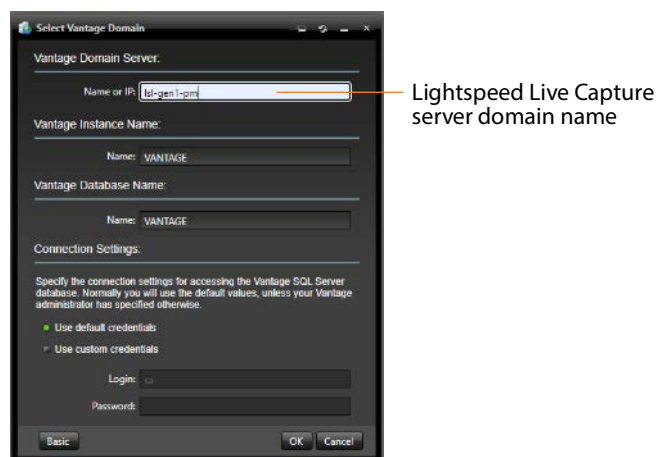
Use the keyword *localhost* when you're using Chrome directly on a single Live Capture server or a domain server where Vantage web apps are installed; use the Live Capture server's host name or IP address when you're launching Live Schedule Pro on a separate workstation via the network.

If your Vantage credentials are current, Vantage displays the Vantage Portal.

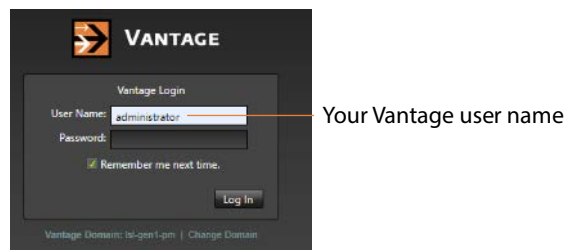
Logging into Vantage

If your Vantage credentials aren't current in Chrome, you're prompted to log into your domain before the Vantage Portal displays.

Enter the server's host name or IP address (typically the Live Capture server) in the Select Vantage Domain panel's Name or IP field:



Click OK to display the Vantage login panel, where you enter credentials:




Enter your Vantage user name (and password if required), and click Log In. The default credentials are *administrator*, with no password. However, a Vantage administrator may have created a Vantage user name for your use.

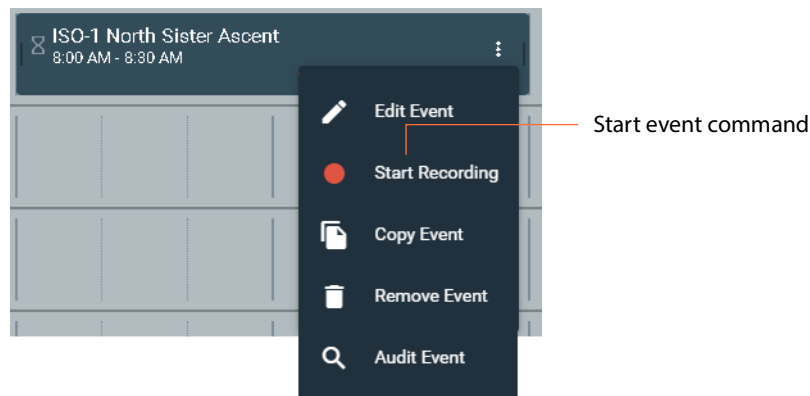
Crash Recording a Single Channel

You can crash record (start recording immediately) a single channel in Live Schedule Pro in different ways.

Note: Live Schedule Pro may display a Labels and Variables dialog when you attempt to crash record a channel, where the workflow requires label or variable values you haven't supplied. Provide the required values and click Start Record to continue.

Starting Crash Recording from the Event Card

To crash record a single channel from an event on the target channel, select Start Recording from event's  menu:



Live Schedule Pro modifies the event's start time and immediately queues it for recording; the stop time is controlled by the event. The event display red, and the Start Recording command changes to Stop Recording.

Starting Crash Recording Directly from the Channel

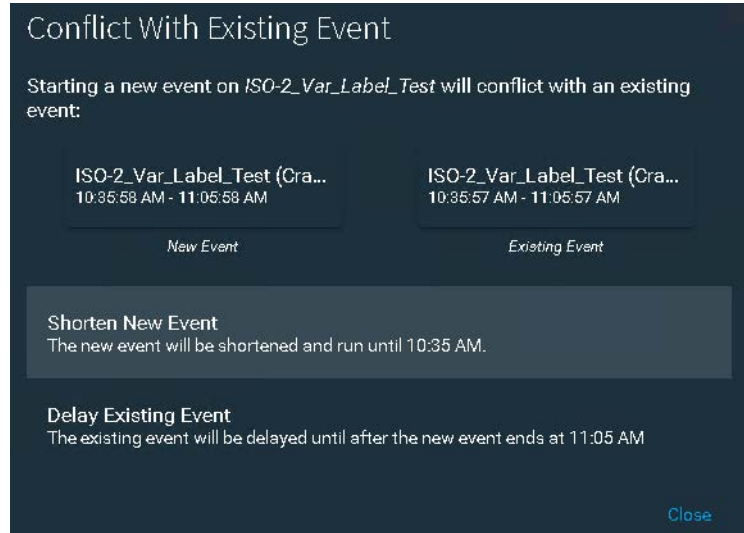
To crash record a channel—where you don't have an event scheduled—click on the Record Now button directly on the channel:



Live Schedule Pro automatically creates an event (named *<Channel Name> (Crash Recording)*), with the event's start time set to the current time for the default duration (see [Setting the Default | Maximum Event Duration](#)), and immediately queues it for recording. The event displays red and the Start Recording button changes to Stop Recording.

Resolving Crash Recording Conflicts with other Events

When you start a crash recording, if there is a conflicting event that prevents Live Capture from starting immediately, Live Schedule Pro displays this message:



This dialog identifies the two conflicting events—the new event on the left, and the existing event on the right.

Choose which option to take in order to resolve the conflict:

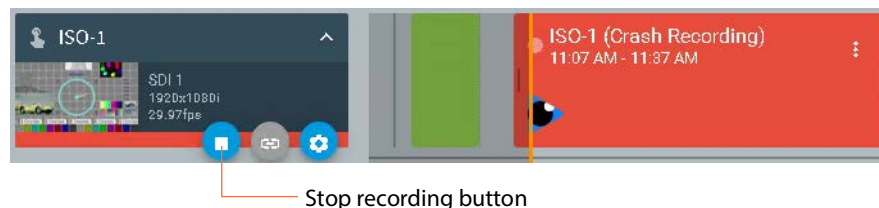
Shorten New Event—Click this option to start crash recording immediately, but stop recording immediately prior to the scheduled event’s start time.

Delay Existing Event—Click this option to start crash recording immediately, and alter the scheduled event’s start time to start immediately after the default event’s duration: one half hour.

Click Close to proceed with crash recording as selected.

Stopping Recording

To stop recording a channel, click on the Stop Recording button on the channel:



Live Schedule Pro stops recording, and adjusts the event’s stop time set to the current time. The event displays green and the Stop Recording button changes to Start Recording.

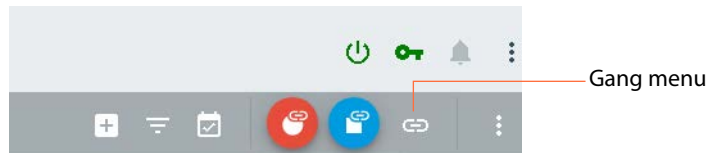
Performing Gang Recording

Gang recording allows you to crash record selected channels simultaneously. You can gang channels in Live Schedule Pro in different ways and crash record them with a single click.

Note: Live Schedule Pro displays a Labels and Variables dialog when you attempt to crash record a channel, where the workflow requires a label or variable you haven't supplied. Provide the label/variable value and click Start Record to continue.

Ganging Channels

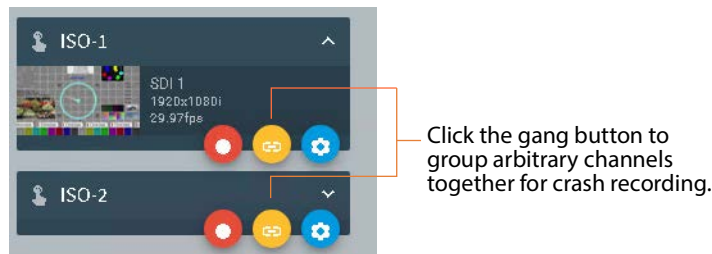
To gang all of the selected channels in the events panel, use the Gang menu in the toolbar:



Select *Gang All* in the Gang menu to gang all displayed channels. The Gang button on each channel displays orange, indicating they are ganged. You can also click any channel's gang button to remove it from the gang before crash recording.

Ganging Selected Channels

To gang selected channels in the events panel, click the Gang button on each individual channel; it displays orange to indicate ganged:



You can add or remove any channel from the gang by clicking its gang button to set the group as needed before crash recording.

Crash Recording Ganged Channels

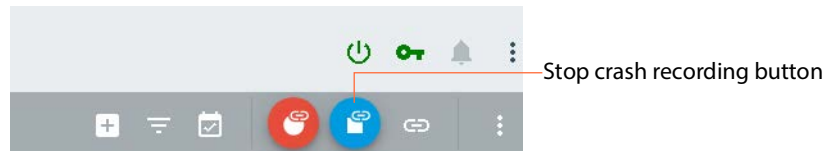
To crash record your ganged channels—click on the Record Now button in the toolbar:



Live Schedule Pro creates an event for each ganged channel, sets the event's start time to the current time, and immediately queues it for recording. The event display red, and enables the Stop Recording button.

Stopping Gang Recording


To stop a gang recording event, click the Stop Crash Recording button in the toolbar:



Live Schedule Pro terminates all of the events underway and sets the end time.

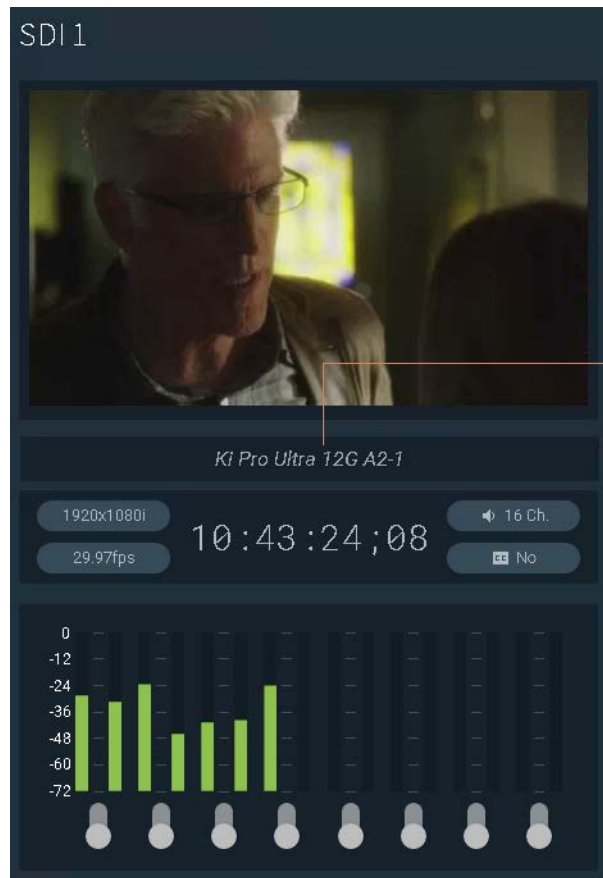
Viewing a Channel's Source

To view a channel's streaming media, double-click on the channel's thumbnail.

Note: Click the Show/Hide  button to display or hide the video thumbnail on the channel card. By default, thumbnails are not displayed.



Live Schedule Pro displays the channel's Video/Audio preview panel:



With router control implemented, the current router channel displays below the video frame.

Video panel—displays the video stream.

Details—Displays media metrics and running timecode. With router control implemented, the current router channel also displays, directly below the video frame.

Audio meter—displays audio meter for each audio channel. Turn audio on and off per channel pair using the controls at the bottom.

Creating and Working with Events

You create events in Live Schedule Pro to submit capture jobs to a Vantage workflow: the time and duration to record a specific source channel, and optional metadata including variables and labels.

You can add two types of events: A one-time event or a recurring event—one that repeats on a regular basis for a specified period of time.

At two minutes prior to an event, Live Schedule Pro queues the event—and displays the event in yellow to indicate the change—locking the channel's live source process. Locking the live source process requires that the signal must maintain its characteristics in terms of frame rate and size or the process will go to loss of signal mode.

Note: The time displayed in the schedule is based on the system time of the server hosting the Telestream Live Schedule Pro Service. If you are scheduling capture events for another time zone, you should set your server's clock to the time zone where recording occurs or be aware of the delta between the two, and set the channel's Source Time Offset accordingly ([Configuring a Source Channel's Time Offset](#)).

- [Event State Color and Pattern Scheme](#)
- [Creating and Configuring Events](#)


Event State Color and Pattern Scheme

Event cards are color-coded to indicate their current, or real-time state:

- Dark Blue—waiting to start a Capture job in Vantage and begin recording.
- Yellow—queued in Vantage (two minutes prior), pending the start of recording. Once an event is queued, a job has been initiated in Vantage and you can monitor it in the Job Status Views web app or directly in Workflow Designer.
- Red—currently recording in Vantage capture workflow.
- Green—recording complete; recording was successful.
- Red striped—recording has failed; it has stopped or complete.
- Pink—A Capture workflow with actions following the Capture action (which succeeded) has had at least one action following the Capture action fail.

Creating and Configuring Events

To create a new event, choose one two ways:

- Click the Add Event  button on the events panel toolbar. Or,
- Double-click on a time block in the in the channel's row or column of the events panel.

When you add an event by clicking in the time block, the Event Name, Channel Group and Channel Name are pre-selected, and the start time is set to the beginning of the time block.

Note: If you include multiple Live Capture domains in Live Schedule Pro with Source Routing enabled—and you haven't set up the router configurations for all of the domains, you may see this error when an event starts: "Failed to record: the input string was not in a correct format".

You can set routes for events, but the events will fail if the Live Capture server executing the event's capture job doesn't have the ports configured.

To resolve the problem, configure the ports in the router settings for each Capture domain.

Typically, you create an event for a single channel. However, you can also create an event that captures multiple channels concurrently. In the Configure event dialog, select the channels you want to capture concurrently and configure as usual. The Routing tab displays routes for each channel you're capturing.

Note: When Source Routing is enabled, abutting events on a given channel cannot have a routing change: The routing change for a queued event disrupts the event and temporarily halts capture.

To edit an existing event, click the More menu on the event card and select Edit to display the same dialog, titled Create Event.

Live Schedule Pro displays the Create | Edit event dialog (event tab shown):

Configure Event

Channels

Event Variables Labels Routing

Name

Description

Start Date 4/11/2024 Start Time 16:27:11

End Date 4/11/2024 End Time 17:27:11

Duration 01:00:00

Rekurs Never

Cancel Save

Event Editing Restrictions

You can edit certain parameters only during specific event states:

- Waiting state—All parameters except the channel and recurs values
- Queued state—End date/time, routing parameters
- Recording state—End date/time, label, and routing parameters.

Note: When editing a recurring segment, if you update a recurring event series from an event that is queued, the edits aren't applied to the queued event per editing rules.

Note: You can modify variables and labels when you're creating an event or while it is waiting for execution. During recording, you can only modify label values.

Live Schedule Pro displays a Labels and Variables dialog when you attempt to crash record a channel, where the workflow requires a label or variable you haven't supplied (see [Using Variables in Events](#)). Provide the label/variable value and click Start Record to continue.

Prior to an event being queued, you can change the start and end times by dragging the Start/End marker to adjust it, or by opening the event and changing the start and end times directly in the panel's controls. If an event is in the Queued or Recording state, you can only modify the end time—you can only modify the start time while the event is in the Waiting state. Once an event is added to the schedule, it remains until manually removed or the automated event cleanup runs, as configured in System Settings (see [Enabling Automatic Event Deletion](#)).

Selecting a Channel

Select the channel(s) to record during this event.

Channels (required)—Specifies the channel or channels to capture. Click the channels menu, and check the channel you want to record. To create multiple, concurrent events across multiple channels with exactly the same configuration, check each channel you want to record and proceed. After creating the events, you can edit them independently.

The remaining controls are organized by tab:

- [Editing Event Values](#)
- [Editing Variables](#)
- [Editing Labels](#)

Editing Event Values

Display the Event tab and configure these controls:

The screenshot shows a dark-themed configuration window for an event. At the top, there are four tabs: 'Event' (selected), 'Variables', 'Labels', and 'Routing'. Below the tabs are several input fields:

- Name:** A text input field.
- Description:** A larger text input field with a small icon in the bottom right corner.
- Event Card Color:** A row of ten colored circles (grey, orange, yellow, green, blue, purple, etc.) for selection.
- Start Date:** A date picker showing '4/11/2024'.
- Start Time:** A time input field showing '16:29:54'.
- End Date:** A date picker showing '4/11/2024'.
- End Time:** A time input field showing '17:29:54'.
- Duration:** A time input field showing '01:00:00'.
- Recurs:** A dropdown menu currently set to 'Never'.

Name (required)—Specifies the display string that identifies this event. Event Name is also passed to the Base name system variable to be used if the Base name is part of a File Name Pattern to control output file name formation.

When you create an event by double-clicking on a channel row, the Event Name is automatically applied and set to [Channel Name]-[Start Time]. You can change this name if desired.

Description—Description of event. Displays directly on the event card.

Event Card Color—Select the color of the event card. Color-based categorization enables you to visually group events belonging to the same show or event, for example.

Start Date (required)—Specifies the date the event starts, selected from date picker or edited directly. Default: current date.

Start Time (required)—Specifies the time in HH:MM:SS format that the event starts. Default: current time.

End Date (required)—Specifies the date the event ends, selected from date picker or edited directly. Default: based on the default event duration (see [Setting the Default | Maximum Event Duration](#)).

End Time (required)—Specifies the time in HH:MM:SS format that the event ends. Default: Duration value plus start time. For channels configured for Manual | Web service triggers, you can schedule events for any date/time in the future, not to exceed 9 hours past the start time. For channels configured with a Recurring Segment trigger, you can record up to 24 hours per day for up to one year (8760 hours).

Note: Workflows that write files into an Avid system have a maximum 6-hour limit.

Events display in Channel Status until they complete, fail, or are removed by deletion or automatic cleanup (see [Enabling Automatic Event Deletion](#)).

You can enter the end time to auto-calculate the duration or manually enter the duration and auto-calculate the end time.

When you create an event by double-clicking on a channel's row, the start time is set to the half hour closest to the location on the timeline where you clicked.

Duration (required). Default: 60 minutes; maximum duration: 9 hours for channels configured for Manual | Web service triggers.

Note: Workflows that write files to an Avid system have a maximum 6-hour limit.

Specifies the event duration, in HH:MM:SS format. You can enter the end time to auto-calculate the duration or manually enter the duration to auto-calculate the end time.

Recurs—Default: *Never*. Select period of time (Daily | Weekly | Monthly) that the recurring event repeats at regular intervals and configure the recurring settings in the example Configure Daily Recurring Event dialog (marked, below in order of display). Select *Never* to create and configure a single-capture event.

Configure Daily Recurring Event

Start
10/11/2023

Occurs Every
1 Day(s)

End After
Date

Recur Until
10/11/2023

Cancel Save

Start (required)—Default: current date. Manually enter the values or use the Calendar date picker.

Occurs Every (required)—Specifies the number of recurring periods for the type or recurrence specified. For example: Occurs every 3 days for a Daily recurring event.

End After (required)—Select Date | Count to control how to specify the End Until value.

Recur Until (required)—For End After: Date, specifies the date that the recurrence should terminate. Manually enter the values or use the Calendar date picker. For End After: Count, specifies the number of occurrences for this event.

Editing Variables

Display the Variables tab to edit them, when variables are specified in the workflow.

Note: When you are creating a multi-channel event (which results in multiple, concurrent events—one for each selected channel), the Variables tab lists each channel's set of variables vertically, by channel name. You should specify each channel's values for use in that event.

You can edit variable values when events are in the Waiting state (both single and recurring). If input variables are used in the workflow, supply the value directly in the workflow (default or action-specific) or display the Variables panel, where you specify values for each input variable required.

You can set variable values at two levels—channel and event—see [Using Variables in Events](#) for details.

Editing Labels

Display the Labels tab to edit them, when labels are specified in the workflow.

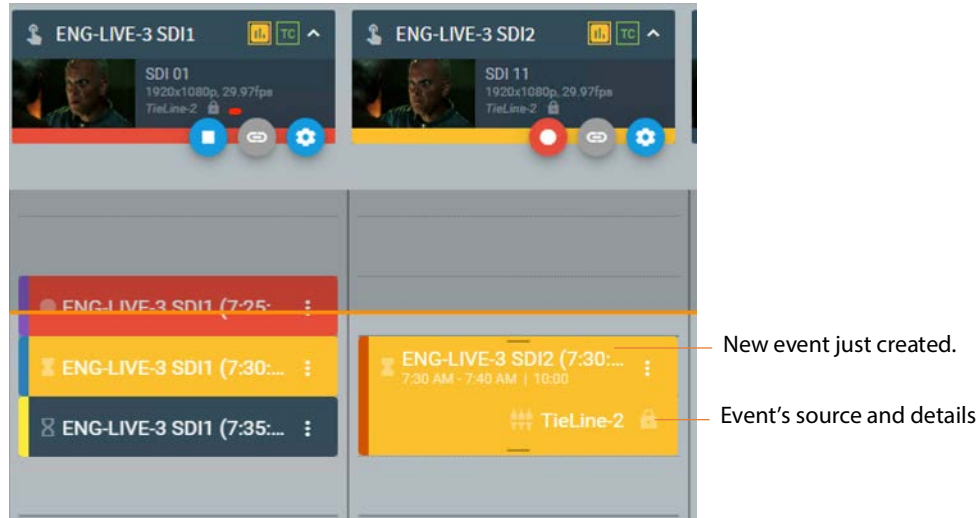
Note: When you are creating a multi-channel event (which results in multiple, concurrent events—one for each selected channel), the Labels tab lists each channel's set of labels vertically, by channel name. You should specify each channel's values for use in that event.

You can edit label values in Waiting | Queued | Recording states for single and recurring events. If labels are used in the workflow, supply the values directly in the workflow or display the Labels panel to modify them.

You can edit label fields at two levels—channel level and event—see [Using Metadata Labels in Events](#) for details.

Saving the Event

When you're done configuring the event, click Save to add this event to the Live Schedule Pro database and display it on the schedule, as shown here:



Note: When Source Routing is enabled, Live Schedule Pro displays the source name and type by icon, plus the lock, indicating whether the route is locked or not.

Showing/Hiding Vantage Jobs

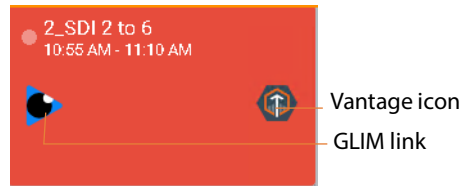
Live Schedule Pro enables Live Schedule Pro to create event cards for events you started directly in Live Capture or via the API. Telestream recommends that when you enable Live Capture events or API-based events, you enable event card creation to have a complete view of all events occurring in the system.

WARNING: *Live Schedule Pro permits you to start a concurrent crash recording when there is an externally-started recording in progress on the channel, even though this practice is not recommended.*

To display jobs created from Live Capture or API submissions, click the Show/Hide button in the title bar:



When you've configured Live Schedule Pro to display Vantage jobs, each time a job is started, Live Schedule Pro automatically creates an event card with a Vantage logo embedded:



The event card optionally displays a GLIM link ([Enabling Glim links](#)) to preview the video. When you click it, if recording is in progress, GLIM attempts to open the file as an Open recording. If the workflow is not configured as an open workflow, GLIM can't open the file until its closed.

In horizontal layout ([Using the Events Panel](#)), expand the channel to show the preview, so that these buttons are visible.

You can't edit or delete externally-generated event cards directly in Live Schedule Pro. They indicate that recording is in progress, and display until the Vantage job expires or the job is deleted in Workflow Designer.

Avoiding Scheduling Conflicts

Live Schedule Pro prevents you from creating overlapping events on the same channel in two ways: Scheduling and crash recording.

- [Avoiding Conflicting Event Schedules](#)
- [Avoiding Conflicting Crash Recordings](#)

Avoiding Conflicting Event Schedules

Best practice is to avoid executing multiple, concurrent recording workflows using the same source to avoid over-provisioning a channel or unbalancing the CPU load.

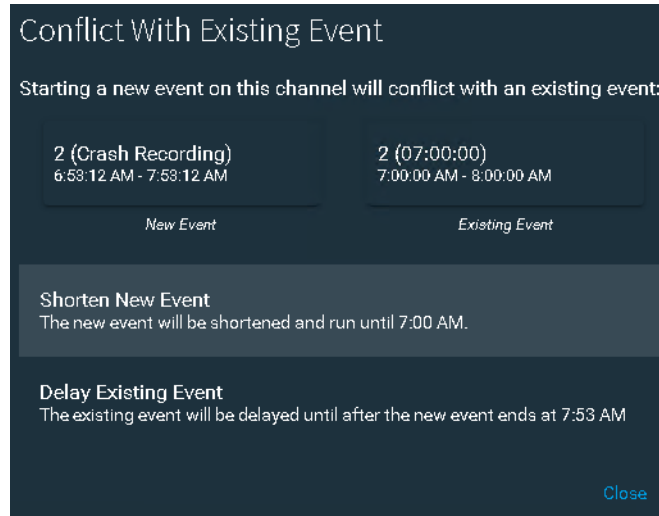
Live Schedule Pro does not allow you to schedule overlapping events. If you attempt to assign a new event to a channel that already has an event scheduled during that time, you are prevented from adding the event:

The screenshot shows the 'Configure Event' interface. At the top, there is a 'Channels' dropdown menu set to '2'. Below this are four tabs: 'Event' (with a red exclamation mark icon), 'Variables', 'Labels', and 'Routing'. The 'Event' tab is active, showing a 'Name' field with the text 'Overlapping event'. Below the name field are four input fields: 'Start Date' (8/1/2023), 'Start Time' (07:00:00), 'End Date' (8/1/2023), and 'End Time' (08:00:00). Below these fields is a red error message: 'Cannot schedule an event which overlaps with other events.' At the bottom right, there is a 'Duration' field set to '01:00:00'.

In this graphic, note the error below the date/time fields. Adjust the date and time to avoid overlap and save the event.

Avoiding Conflicting Crash Recordings

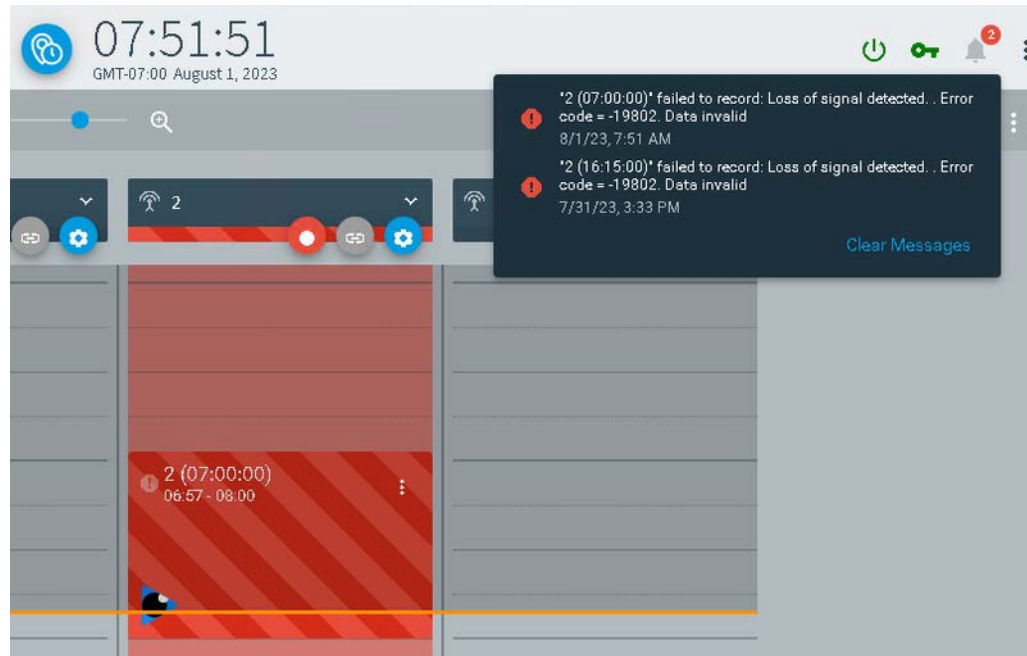
If you attempt to start a crash recording that continues past the start of a previously-scheduled event on the same channel, you are prompted to configure the crash recording to either end when the scheduled event starts or to delay the start time of the crash record to start when the scheduled event ends:



Note that if you want an existing event to start immediately, you can also drag the boundary for the beginning event to the present so it starts immediately.

Resolving Recording Failures

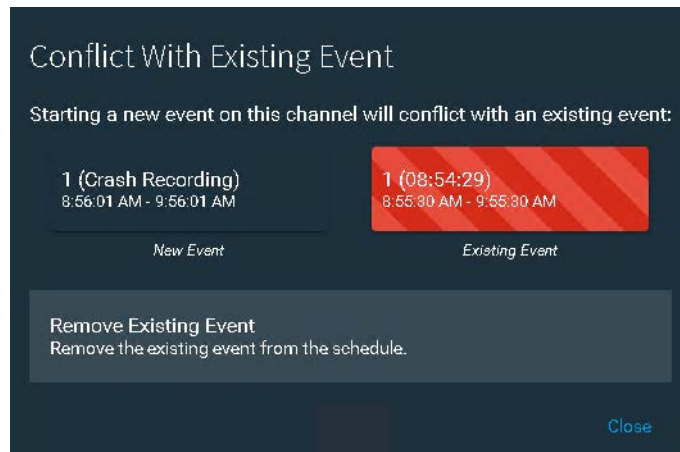
When an event fails to record, Live Schedule Pro indicates the failed event by displaying the event's event card with diagonal red stripes. Information about failures is indicated in the toolbar, with a badge over the alarm icon:



Also, the channel menu for the failed channel also displays diagonal stripes in its status, and for the length of time the failed event was scheduled, a light red overlay displays over the lane.

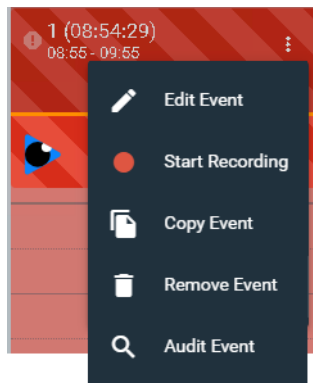
Restarting a Recording After a Failed Event

The event card for a failed event isn't trimmed to the point the failure. If the recording should be restarted immediately by crash recording, Live Schedule Pro displays this dialog:




Select Remove Existing Event to delete the event card for the failed event and click Close so that you can start crash recording.

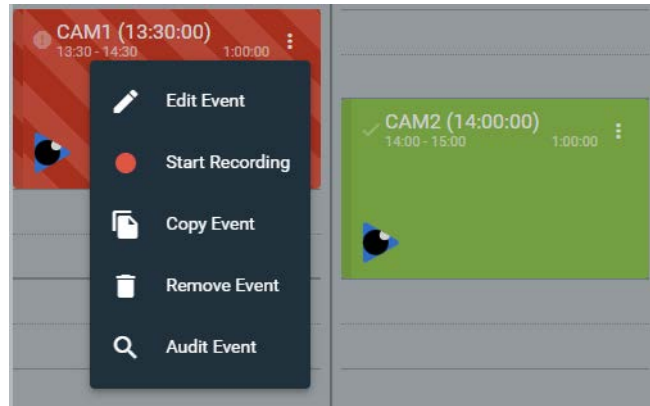
Alternatively, select Remove Event from the event card menu:



Now the channel is available. Start a new scheduled event or crash recording using the normal procedures.


Performing Event-Specific Operations

To perform various operations on an existing event, click the  menu to select the operation, as shown here:



Click an operation to perform:

Editing an Event

To edit an event, select Edit Event from the event's  menu. If the event is being recorded, only those controls are editable are enabled. Live Schedule Pro displays the Edit Event dialog, where you can make changes and save them ([Creating and Working with Events](#)). To edit all controls, stop recording this event before editing it.

Starting | Stopping a Recording

To crash record (or start an event immediately), select Start Recording See ([Crash Recording a Single Channel](#)). To stop recording, select Stop Recording.

Duplicating an Event

Often, when you need a new event, its so similar to an existing one that its easier to duplicate it and make minor changes than it is to create a new one from scratch and configure it. Events that are copied to other channels retain these original parameter values: Start | End | Description | Variable | Label (if present). The Name parameter uses the original value, appending it with (Copy).


Event duplication is limited to channels where the associated labels and variables are identical to the labels and variables in the copied-from channel. Channels that are eligible for event creation are enabled for checking; others are disabled.

Note: You can duplicate an event during any state including Recording, provided that you don't copy it to an active channel (including the originating channel—in this case, change the event time).



To duplicate an event, follow these steps:


1. Identify the event you want to duplicate.

2. Select Copy Event from the event's  menu.
Live Schedule Pro displays the Copy Event dialog, with the event's settings.
3. In the Channels control at the top, check the channel(s) where you want to replicate this event.
Live Schedule Pro enables the event controls. Edit the parameters as required. If recording overlap is detected, the time fields display red—change it so that there is no recording overlap.
4. Click Save to create new events as specified, using the new values.



Editing an Event

There are several ways to edit an event when it is in a Wait state:


- Click on the Edit  button in its toolbar
- Double-click the event
- Click either end of the event and drag it laterally in either direction to select one or more adjacent time blocks (which display in purple).

You can change the start and end time of a scheduled event in the same way as CalDAV calendar events. Prior to an event being queued, you can change the start and end values by dragging the left and right sides (or top/bottom, in vertical mode ([Using the Events Panel](#))) of the event to modify the date/time stamp. Once an event has been queued in Live Capture or it is already recording, you can only edit the end date/time stamp.

Live Schedule Pro displays the Edit Event dialog, which is identical to the Create Event dialog ([Creating and Configuring Events](#)). Review and make changes if required, and click Edit to save it again.

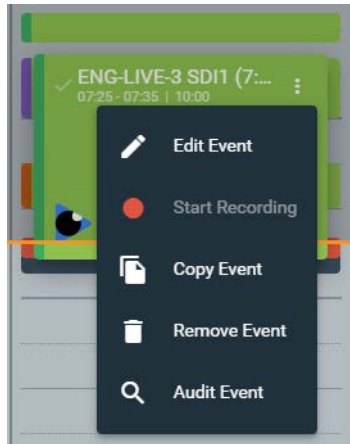
Note: If you change the event start time by dragging the start of the event, the name of the event is not changed. Thus, the time may be incorrect and requires editing manually if you want the name to reflect the new start time.

Removing an Event

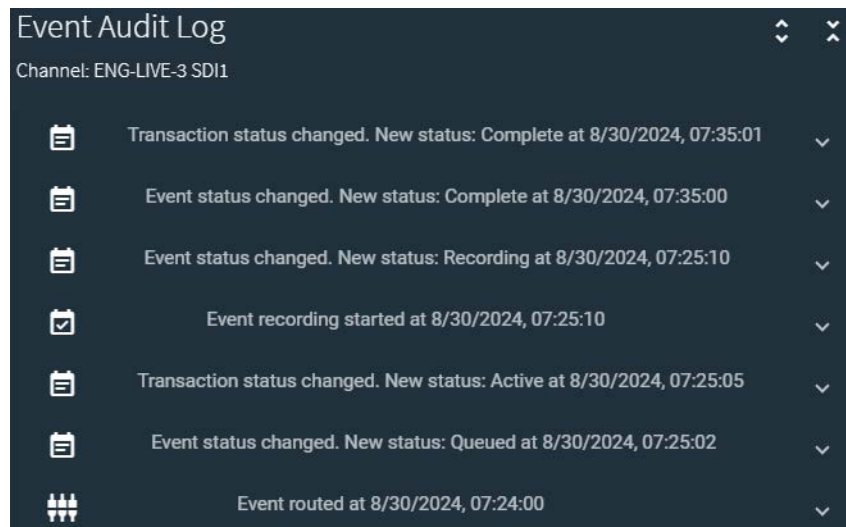
To remove an event, select Remove Event from the event's  menu. Live Schedule Pro displays a Remove Event dialog. Click Yes to confirm deletion. You can delete an event in any state. However, if you delete an event during recording, the recording up to that point is saved. The event stops recording and Vantage Workflow Designer reports the job as complete.

Auditing an Event

To audit an event, select Audit Event from the event panel's  menu:



Live Schedule Pro displays the Event Audit Log for this event:



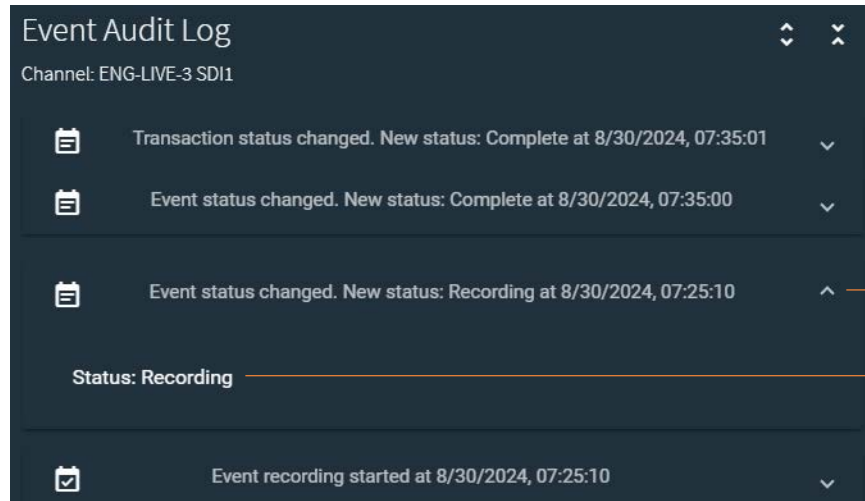
Entries are logged for these events:

- Event Created
- Event Migrate (when this event was created before Live Schedule Pro 1.1)
- Event Details Updated
- Event Recording Started
- Event Status Changed
- Event Route Changed

Entries are listed ordinally by time, with the oldest entry at the bottom.

Viewing Event Details

Use the Expand | Collapse button to the right of an entry to view/hide this entry's details, as shown here, where the third entry is expanded.



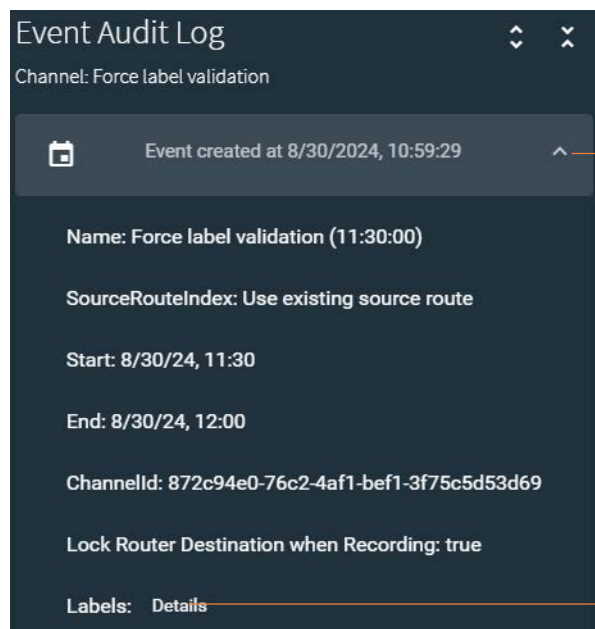
This entry is expanded, showing more details.

Errors, if any, are indicated by a red  icon:

Use the Expand | Collapse buttons at the top right to view/hide details for all log entries for this event.

Viewing Event Labels

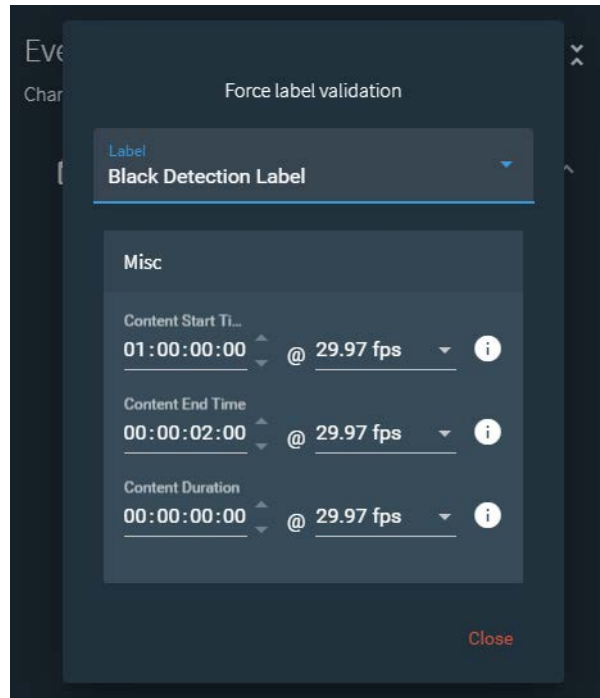
For channels whose Capture workflow has labels, you can inspect their values in the event's entries. Here is an event log for an event on a channel with a label:



Expand any entry to show details.

Click the Details button on the Labels line.

To display the Labels dialog, expand the event, and click on the Details button at the bottom in the Labels row. Live Schedule Pro displays the Label dialog, temporarily obscuring the event log:



In this example, you can see that the label—at the time of the entry in the log, shows the Black Detection label's content start time of 01:00:00:00, ending at 00:00:02:00.

Viewing Event Variables

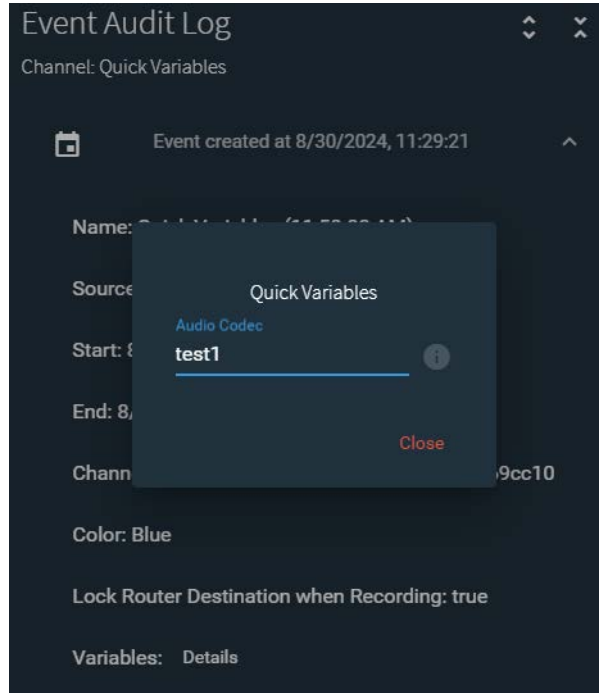
For channels whose Capture workflow has variables, you can inspect their values in the event's entries. Here is an event log for an event on a channel with a variable:

The screenshot shows a dark-themed 'Event Audit Log' window. At the top, it says 'Channel: Quick Variables'. Below that is a header bar with a calendar icon, the text 'Event created at 8/30/2024, 11:29:21', and an expand/collapse arrow. The main content area lists the following details: 'Name: Quick Variables (11:50:00 AM)', 'SourceRouteIndex: Use existing source route', 'Start: 8/30/24, 11:50', 'End: 8/30/24, 12:20', 'ChannelId: ec80f3e2-6acc-4bae-bd56-97489269cc10', 'Color: Blue', 'Lock Router Destination when Recording: true', and 'Variables: Details'. The 'Details' text is underlined and has a blue link icon.

Expand any entry to show details.

Click the Details button on the Variables line.

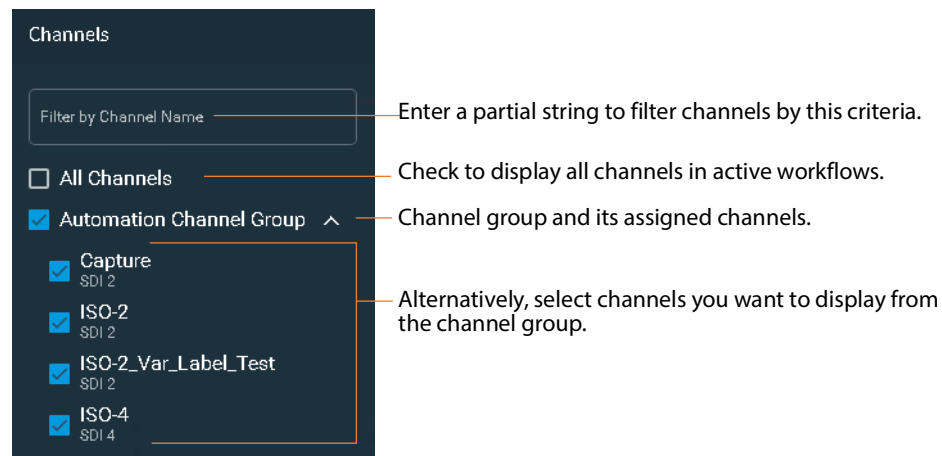
To display the Variables dialog, expand the event, and click on the Details button at the bottom in the Variables row. Live Schedule Pro displays the Variables dialog, temporarily obscuring the event log:



In this example, you can see that the Audio Codec variable—at the time of the entry in the log, shows the value of `test1`.

Displaying Events by Channel

Use the channels panel in the bottom left corner of the Live Schedule Pro window to select or more channels and display their events:



To select channels whose events you want to view, use one of these options:

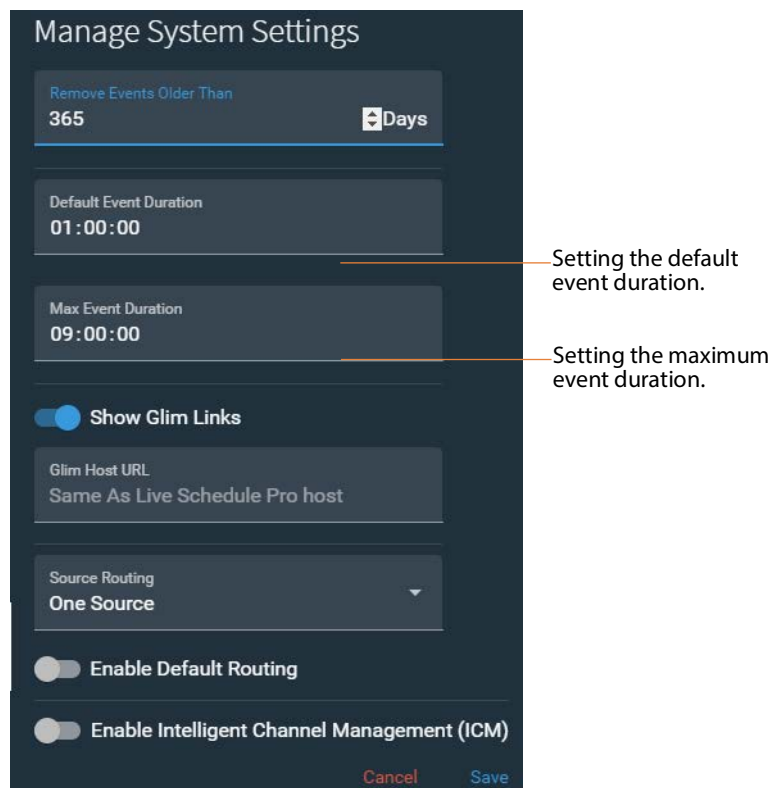
- Select all channels—check the All channels control.
- Select all channels in a channel group—check the target channel group control.
- Select one or more channels—first select the channel group and click the hide/display button to display assigned channels. Now, check those channels whose events you want to display.

Setting the Default | Maximum Event Duration

To set the default event duration and maximum event duration, click the More menu:




Select System Settings to display the Settings panel:



Default Event Duration. Specifies the default duration of events. Default: 01:00:00. Limits: 00:00:00:01 - maximum duration determined by Max Duration value.

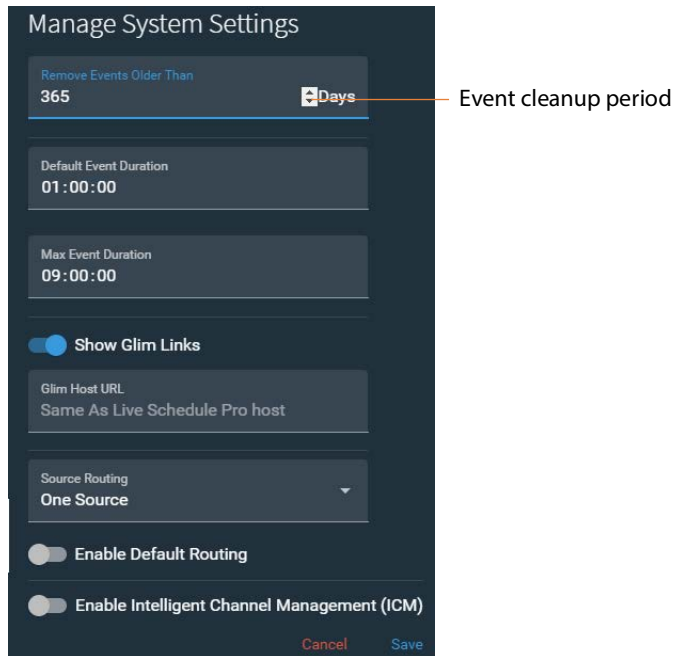
Maximum Event Duration. Specifies the maximum duration of events. Default: 09:00:00. Limits: 00:00:00:01 - 09:00:00.

Enabling Automatic Event Deletion

To adjust how long events remain in the calendar before they are automatically deleted, click the More  menu:



Select System Settings to display the Manage System Settings panel:



To change the time an event is maintained, enter a new value in the Remove Events Older Than field, and save it. All events older than the storage period are automatically deleted.

The default deletion value is 365 days. This setting specifies how long to retain events in days, before automatically deleting them. Maximum: 36500 days.

File deletion is run in 24 hour cycles, based on the Telestream Live Schedule Pro Service start time. For example, if the service is restarted at 2:00 PM, each day at 2:00 PM the events that have expired in the past 24 hours are deleted.

Setting the Schedule Time Scale

To view a longer or shorter time frame in the events panel, use the time scale slider in the event toolbar—drag the button left or right. Or, click on the minus and plus buttons to decrease or increase magnification in 15 minute increments.



As you decrease magnification, the time scale compresses, allowing you to view more time; as you increase, it expands, reducing the period of time that's visible. The major time period displays in the button.

When you decrease the scale and events become so small that the name is clipped, you can hover over the event to temporarily display hover text that displays the entire text in the event's name field.


You can also set the hour format to 12-hour or 24-hour, which also displays in the hour column headers at the top of the schedule. For example, with a 12 hour format, Live Schedule Pro displays 1 o'clock as 1:00 PM; in 24-hour format it displays as 13:00.

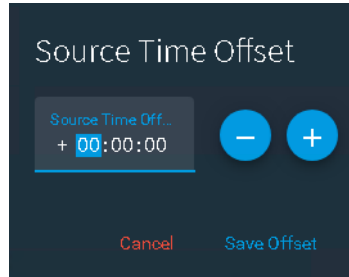
Note: 24-hour time is always used for an event's start and end times and Live Capture expects source timecode to be 24-hour as well.

Configuring a Source Channel's Time Offset

You can apply a time offset to a source channel to allow you to control a channel which has a timecode offset from the Live Schedule server's clock time or originating on a server that is not located in the same time zone as other nodes on the Live Capture domain.

The Source time offset setting enables Live Capture use the source timecode and offset it against the Live Schedule host's clock time. For example, if the Live Schedule server time is 13:00 and an event is scheduled to start at 13:05:00:00 with a source time offset set at -02:00:00:00 then the schedule uses 11:05:00:00 on the source timecode to trigger the recording.

On the target channel, click the gear  button and select Source Time Offset to display the channel's Source Time Offset dialog and set a timecode offset using timecode.




Click the +/- button as required. Enter the HH:MM:SS value, using the - and + buttons to adjust 30 minutes as required, and click Save Offset.

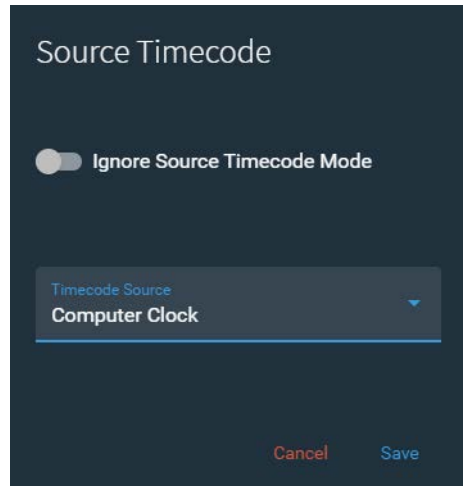
Specifying a Channel's Source Timecode Mode

Live Schedule Pro uses the Telestream Live Schedule Pro Service's host to provide time-of-day computer clock to place events on the schedule and determine the capture start and stop times. The timecode source used in the channel configuration must match this time-of-day timecode to execute the event at the proper time. If the source doesn't match, then the channel must be set to ignore the source timecode ([Specifying a Channel's Source Timecode Mode](#)) or be configured to apply an offset ([Configuring a Source Channel's Time Offset](#)) to align with the source timecode.

In the Source Manager web app, for SDI, specify Timecode Source as either Source | Computer Clock | LTC (except for ST 2110), which must be synced to time of day. If recording must start and end at a precise, frame-accurate timecode, LTC or Source is preferred. For IP sources, Timecode Source must be set to Computer Clock if the ingested stream doesn't have embedded timecode that matches time of day.

Live Schedule Pro, by default, requires that all sources are in sync with the system clock used by the Telestream Live Schedule Pro Service. The Telestream Live Schedule Pro Service submits the event to Vantage just ahead of the actual start time with timecodes for event start and event stop. If the source does not have timecode that is in sync with the system clock, events using that source won't start or stop as expected.

To configure a channel's source timecode mode—ignore this channel's source timecode or specify a specific type of timecode—click the channel's gear  button and select Source Timecode Mode. Live Schedule Pro displays the Source Timecode dialog:



Crash Recording without Source Timecode

Live Schedule Pro supports crash recording that doesn't use the timecode used by the source. When you enable Ignore Source Timecode mode, events generate an immediate start command at the beginning of the event and an immediate stop command at the end of the event.

Note: In this situation, the recording start and stop time is NOT frame-accurate with respect to the system clock.

To specify that captures for this channel should ignore the source timecode, enable the Ignore Source Timecode mode control.

Event Recording with Source Timecode

To specify the channel's timecode source, disable Ignore Source Timecode mode (see [Specifying a Channel's Source Timecode Mode](#)) and select from these options:

- *Source*—Source timecode is time-of-day and matching Telestream Live Schedule Pro Service timecode. Uses the timecode provided in VBI or VANC (SMPTE 12M-2/ RP188) of the selected Lightspeed Live Capture's video input signal. For H.264 or H.265 uses SEI data. For MPEG2, uses GOP header timecode.
- *Computer Clock*—Uses time-of-day clock provided by the Live Capture server. When selected, also configure Compensate for Computer Clock Drift.
- *None*—Specifies zero-based timecode recording. When recording begins, the timecode is set to 00:00:00:00. If Free Run Timecode is enabled, then the timecode inserted into a QuickTime or MXF file auto-increments. Otherwise, every frame in the output file contains timecode 00:00:00:00. Capture displays N/A on the work-

flow thumbnail, indicating that there is no applicable timecode available, and 00:00:00:00 displays in Capture's Preview timecode window.

- *Analog LTC*—Uses the timecode provided on the SDI card's LTC input (marked with an R on the SDI card).

Note: Analog LTC timecode is passed to Live Capture in input frame samples from the SDI card. When a channel is in an LOS state, the LTC timecode is not present and is passed to Live Capture at 00:00:00:00 until a valid signal is present on the input.

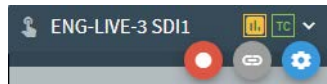
Understanding the Channel Card Channel Pool Icons

When Intelligent Channel Management (ICM) is enabled ([Implementing Intelligent Channel Management](#)), Live Schedule Pro displays a color-coded channel pool icon on each channel card in the top right corner, just to the left of the TC icon.

Channels may be assigned to a pool ([Managing Channel Pools](#)) or left unassigned, as indicated here:

Not Assigned to Pool—Channel Pool Icon Displays Yellow

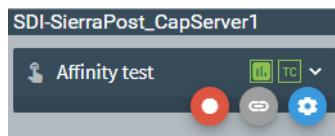
Here, the channel pool icon displays yellow:



This channel is not currently assigned to a pool.

Assigned to Pool—Channel Pool Icon Displays Green

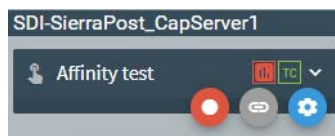
Here, the channel pool icon displays green.



This indicates that this channel is assigned to a pool, and above the channel card the pool to which its assigned is identified. Hover over the channel pool icon to indicate what pool the channel belongs to.

Assigned to Pool—Channel Pool Icon Displays Red

Here, the channel pool icon displays red.



This indicates that this channel is not assigned to a channel pool and Show Unassigned Channels is disabled in System Settings. This only displays temporarily, before the channels are removed.

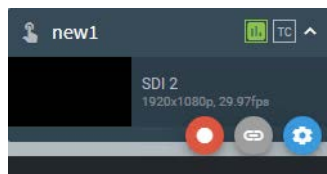
Understanding the Channel Card Timecode Icons

The state of this channel's timecode as well as the timecode mode displays on each channel card, indicated by a color-coded TC (timecode) icon in the top right corner.

Note: You can hover over the TC icon to display state information in real time.

Matching Timecode—TC (TimeCode) Icon Displays Pale Gray

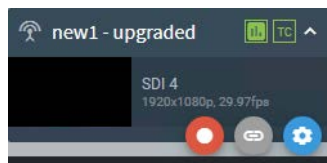
Here, the TC icon displays pale gray. This is the default state, where Live Schedule Pro assumes matching timecode for frame-accurate recordings:



The source timecode is time of day and matches the Telestream Live Schedule Pro Service timecode. Source Timecode Mode is set to Ignore Source Timecode Mode disabled (see [Specifying a Channel's Source Timecode Mode](#)).

In Synch Timecode—TC Icon Displays Green

Here, the TC icon displays green:



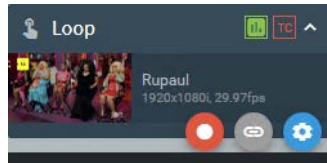
Show Vantage Cards is disabled for channels with Ignore Source Timecode enabled (see [Specifying a Channel's Source Timecode Mode](#)). Cards are not displayed, as these require synchronized timecode.

The source timecode matches the Telestream Live Schedule Pro Service timecode.

The duration information on the channel status card does not display the same level of detail for a recording job for a source that is set to ignore the source timecode. Duration displays, but start and stop times do not.

Mismatched Timecode—TC Icon Displays Red

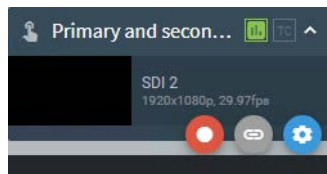
Here, the TC icon displays red:



In this situation the source timecode is not time-of-day and it does not match the Telestream Live Schedule Pro Service timecode, but Ignore Source Timecode Mode is disabled. Scheduled events in this state will fail. Crash recording may work, but duration may be incorrect as well.


Unknown Source Timecode—TC Icon Displays Dark Gray

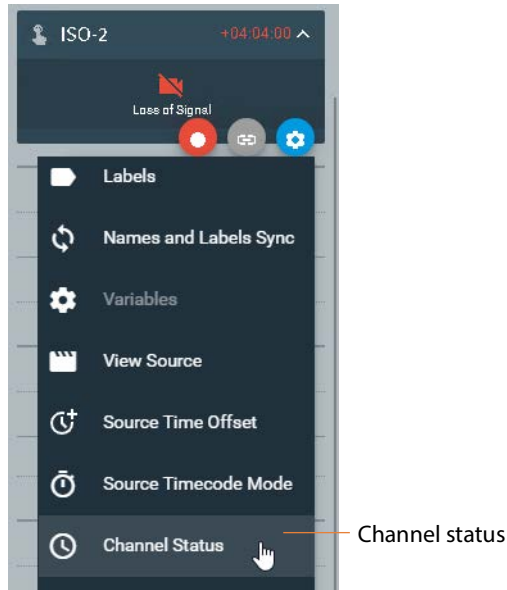
Here, the TC icon displays dark gray:



Show Vantage Cards is disabled for channels with Ignore Source Timecode enabled (see [Specifying a Channel's Source Timecode Mode](#)). Cards are not displayed, as these require synchronized timecode.

Monitoring Channel Status


To monitor a channel's status, click the channel's gear  button and select Channel Status:



Live Schedule Pro displays the Channel Status panel:










Channel Status - ISO-2

Scheduled events

Name	Description	Duration	Start	End
	High Mount Broncos End Zone	01:00:00	14:15:00 25/10/2023	15:15:00 25/10/2023

1 - 1 of 1

Recording jobs

Capture State	Job State	Name	Duration	Primary Output	Secondary Output
		ISO-2 (5:30:00 PM)	00:59:59 21:34:00:00 to 22:34:00:00		
		ISO-2 (3:00:00 PM)	00:59:59 19:04:00:00 to 20:04:00:00		
		High Mount SeaHawks En		ISO-2_SDI 2.mov D:\Live\Store\2fa35863-8857-4ec2-9ec...	



1 - 3 of 3

Scheduled Events Table

The Channel Status panel displays events that are awaiting execution in the upper, Scheduled Events table. Each row represents one event and includes the event name, description, duration, start and end times.

When an event is in the Waiting state, its event record is stored in the Live Schedule database. When an event starts—initiating a job in Live Capture, the Vantage job record is stored in the Vantage database and is only removed when the job expires or is manually removed.

You can perform the following operations on events in this table:

- **Delete**—Click the delete  button to delete the event. You can only delete an event when its in the Waiting state.
- **Edit**—Click the edit  button to display the Edit Event dialog and update its parameters (*Creating and Working with Events*) if the job was started by Live Schedule Pro. You can edit the event when it is in the Waiting | Queued | Recording state.





Recording Jobs Table

The Recording Jobs table—located directly below the Scheduled Events table—displays Vantage recording jobs that are underway or completed.



Recording jobs displays a history of all jobs that have been recorded on the channel—not just those scheduled in Live Schedule. This table includes recordings submitted from all interfaces—Live Schedule, API submission, SCTE-104, and crash recordings.

Details include icons for capture and job states, job name, duration and time code, primary and secondary output locations.

Icons indicate the real-time state of the capture process (represented by the Capture action itself) for this channel’s recording job:

Icon	Recording State
	The current recording is complete.
	In an idled state, either queued for or stopping recording.
	Recording is in progress.
	Recording has failed.

You can perform the following operations on jobs in this table:

- **Copy**—Click the copy  button to copy the fully-qualified path (if it exists) to the primary or secondary output file to the clipboard.
- **Edit**—Click the edit  button to display the Edit Event dialog and update its parameters (*Creating and Working with Events*) if the job was started by Live Schedule Pro. You can edit the event when it is in the Waiting | Queued | Recording state.

Jobs are purged based on expiration rules in Vantage. For details, see the Vantage User’s Guide. Page through the tables using the paging toolbar, at the bottom right of each table.

Using Variables in Events

Variables enable you to assign metadata values dynamically when you create an event, for use in the Capture action of your Live Capture workflows on a job-by-job basis, as required. Input variables are those that are bound to a control in the Capture action's Inspector. Output variables are those that you add to the Capture action by clicking on it and selecting Add Variable. Output variables are not used in the Capture action; they are simply published for use by downstream actions in the workflow, if any.

Note: Live Schedule Pro sets the variables and labels from the templates available when you create an event. Existing (those already on the calendar) events' variables and labels are not modified when variables and labels are later added, or changed at the schedule or channel level.

Before you can assign values to variables in Live Schedule Pro, you must create a Capture workflow, add the input and output variables to actions in the workflow as appropriate to your workflow requirements, and activate the workflow.

Note: Variables that are bound to a control in the inspector or added to the Capture action are automatically displayed in Live Schedule Pro so that you can set their value when you add or edit an event.

You can update variables at two levels:

- Channel level—events that are created for this channel inherit the value assigned unless you override it at the event level (see [Setting Channel-level Variables](#)).
- Event level—The value assigned to variables directly on an event apply only to the individual event, overriding any schedule- or channel-level variable values. (See [Setting Event-Level Variables](#)).

If you don't assign values using at least one of these methods in Live Schedule Pro, the default value (if any) of the variable in Live Capture is used. You should always set a default value for a variable—otherwise, you can't assign a value in Live Schedule Pro either, and it may lead to workflow error, resulting in a capture failure.

Updating Vantage and External Systems

You can attach one or more variables to an event, and then, on a job-by-job basis, provide unique values for the variable. In the Vantage workflow, you can also save the variables as part of a label, along with the other workflow output in a catalog, for use in other workflows or for use externally, in other systems.

Or, you can create a workflow to update metadata in external systems using variables. For example, you can modify your Capture workflow to enable the Update Workflow control, and provide a target workflow to trigger after each job. Now, create the target workflow with a Receive action (so it can be triggered) and then use Populate and Notify actions for example, to transfer new values to an external system.

Publishing Event Names in Labels

The metadata label-event name synch feature enables you to save the name of the event in an associated metadata label.


This feature enables you to create a label in Vantage associated with a workflow, and store the name of the capture event in an event name parameter. The label is passed out of the capture job with the output media, for use in external systems—Avid, for example.

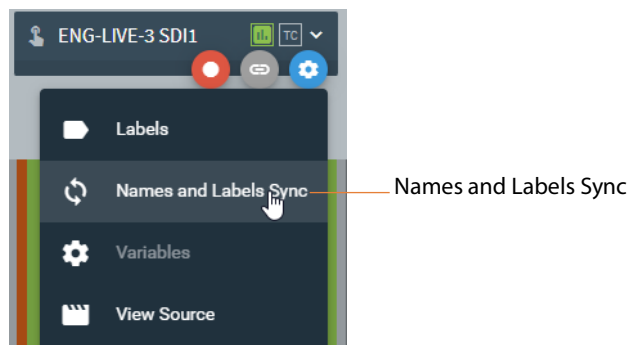
Workflow Implementation

To implement this feature, create (or edit) a label in Vantage Management Console, adding a Text parameter named `Event Name`, for example. Now, add the label to the target workflow.

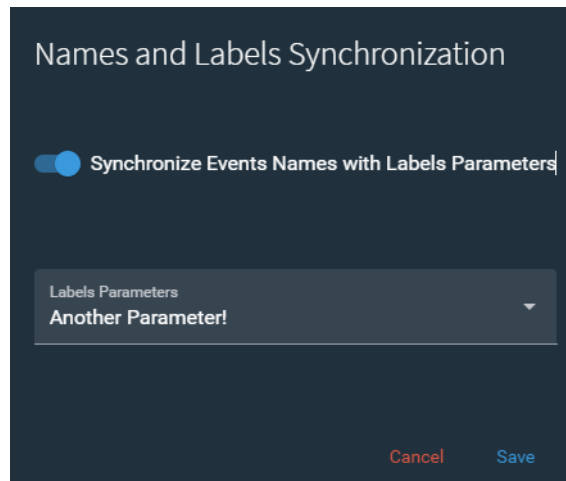
Now, in Workflow Designer, add the label to the Capture or Tape action in each workflow where you want to track the event name for each capture job.

Configuring Event Name Synchronization

To configure and utilize event name synchronization in your events in a given channel, display the Variables dialog using the target channel's gear  button and choose Names and Labels Sync:



Live Schedule Pro displays the channel's Names and Labels Synchronization dialog:



To enable or disable the feature, click the Enable/Disable button.

When enabled, select the label's parameter to synchrony with the event name. Only string parameters may be selected.

Now...


- If you change the name of the event, Live Schedule Pro updates the value of the label's specified parameter.
- If you change the value in the label's parameter, Live Schedule Pro updates the event name directly in Live Schedule Pro.
- If you change the label's parameter externally to Live Schedule Pro, Live Schedule Pro updates the event name as well during execution.
- If the label parameter is updated when the event is in a Recording state, this triggers an update in the Live Capture workflow.

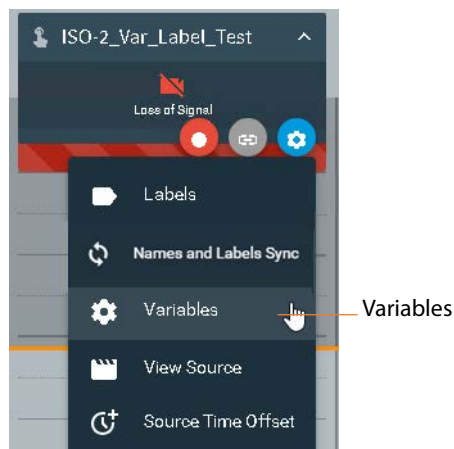
Note: Event names take precedence over parameter values—so if you change both the event name and parameter at the same time, both are updated with the event name value.

Setting Channel-level Variables

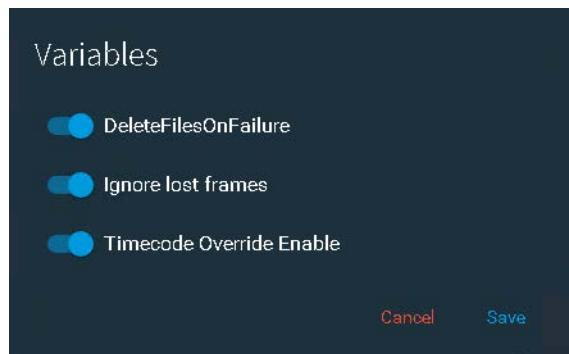
When one or more variables are specified in your workflow’s Capture action—for which you want the same value for every event on a specific channel—you can set it once at the channel level, instead of setting it on each individual event.

Note: When you use the variables in an event on this channel, it inherits the channel-level value automatically when you create the event. However, you can also override a channel-level variable’s value by editing it directly in the event.

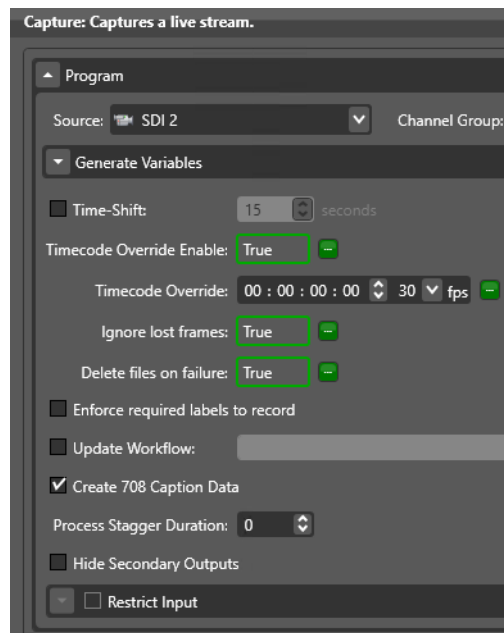
To update variables at the channel level, display the Variables dialog using the target channel’s gear  button and choose Variables:



Live Schedule Pro displays the channel’s Variables dialog:



Here’s an example of the associated Capture action inspector depicting the same variables:

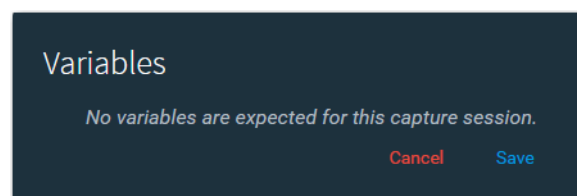


In this example, the three variables are True/False variables bound to controls in the Capture action. Thus, you enable them to specify True; disable them to specify False.

For each variable you want to update, enter/update the value and click Save.


These values are inherited by each event you create for this channel, but may be overridden at the individual event level.

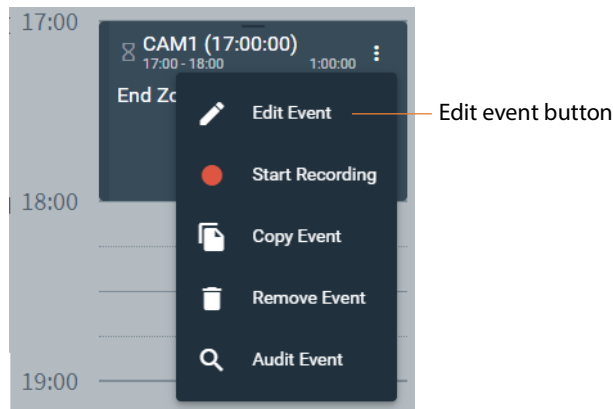
Note: When Live Schedule Pro displays the Variables panel as shown here—with no variables—it means that the workflow you are using for this event has no variables assigned. Return to Workflow Designer—add variables to the workflow and activate it.



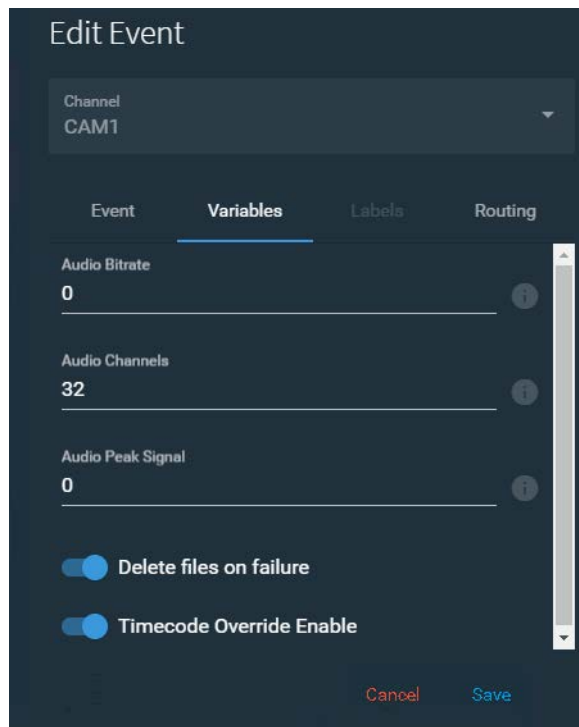
Setting Event-Level Variables

Event-level variables override the Capture action’s default settings as well as channel-level variable settings.

To update variables on an event you’re creating, display the Variables panel. To update variables on an event which you’ve already created, double-click the event or click the edit  button in the event menu:



Live Schedule Pro displays the Edit Event dialog—display the Variables panel:



Update each variable as appropriate, then click Save. This value overrides values entered at the workflow and channel level. When you’re done updating variables, click Save to update the event.

Using Metadata Labels in Events

Labels enable you to collect and organize metadata associated with an event (typically by updating the label in the Capture action or via variables during Capture workflow execution), and then storing the labels with its media for utilization after the job ends.

Before you can modify label fields in Live Schedule Pro, you must create a Live Capture workflow, create the label or select an existing one in your domain, add the labels as appropriate to your workflow actions, and activate the workflow.

You can edit metadata labels at two levels:

- Channel-level—all events on the channel inherit the assigned value, and it may be overridden by a specific event ([Setting Channel-level Labels](#)).
- Event level—Only this event uses the values in the label ([Setting Event-level Labels](#)).

Note: A practical example of updating a label here in Live Schedule Pro, and submitting it to the Capture workflow for use during the job is illustrated in the Live Capture User Guide > Prototype Capture Workflow—Labels & Variables topic.

Note: You can update labels and variables prior to adding an event to the schedule or while the event you added is in the waiting state.

If you don't update fields in a label using at least one of these methods in Live Schedule Pro, the default value (if any) in the label specification in the Capture action is used. If no value is assigned, it may lead to an error in your workflow. For information on creating and managing labels for use in your workflows, see [Creating Labels and Variables for Use in Workflows](#) in the Vantage User Guide.

Updating Vantage and External Systems

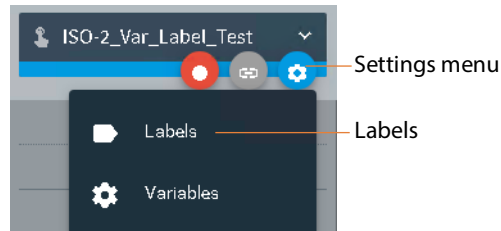
You can attach one or more labels to an event, and then, on a job-by-job basis, provide unique values for the fields in the label. In the Vantage workflow, you can also save the label along with the other workflow output in a catalog, for use in other workflows or for use externally, in other systems.

Or, you can create a workflow to update metadata in external systems using variables. For example, you can modify your Capture workflow to enable the Update Workflow control, and provide a target workflow to trigger after each job. Now, create the target workflow with a Receive action (so it can be triggered) and then use Populate and Notify actions for example, to transfer new values to an external system.

Note: If you plan to transform labels to variables, you require at least one metadata license per domain.

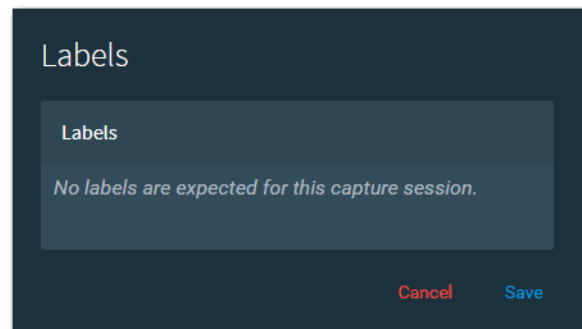
Setting Channel-level Labels

Channel-level labels override the label's default settings in the Vantage workflow. To update labels at the channel level, display the channel's Settings menu and select Labels:

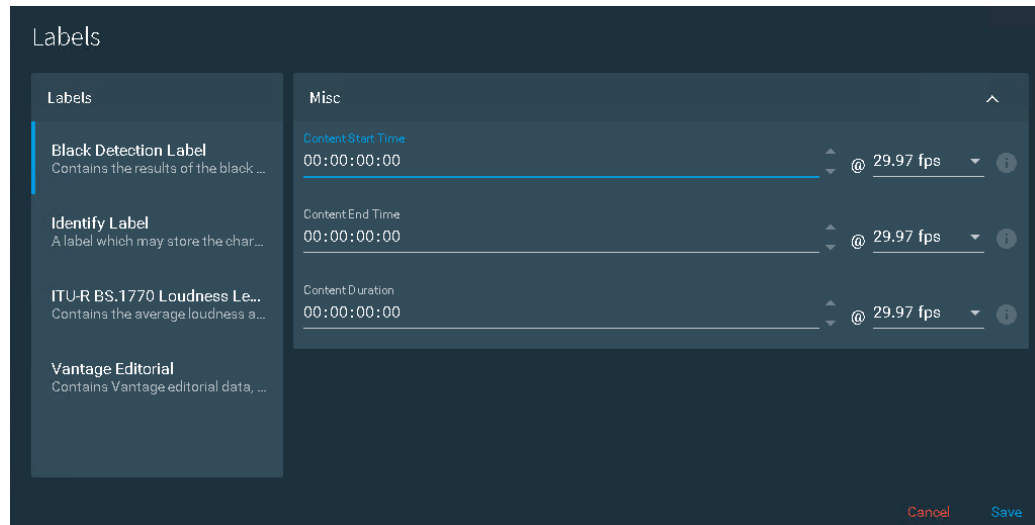


Live Schedule Pro displays the Labels dialog, and lists each label attached to the workflow for this channel:

Note: If Live Schedule Pro displays the Labels panel as shown here—with no labels—it means that the capture workflow you are using for this event has not been configured to expect any labels. Return to Workflow Designer and add the required labels to your workflow and activate it.




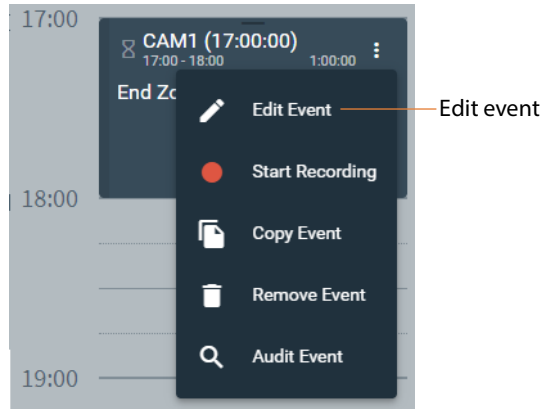
Live Schedule Pro displays the Labels panel with the labels in the Capture action of the workflow being utilized:



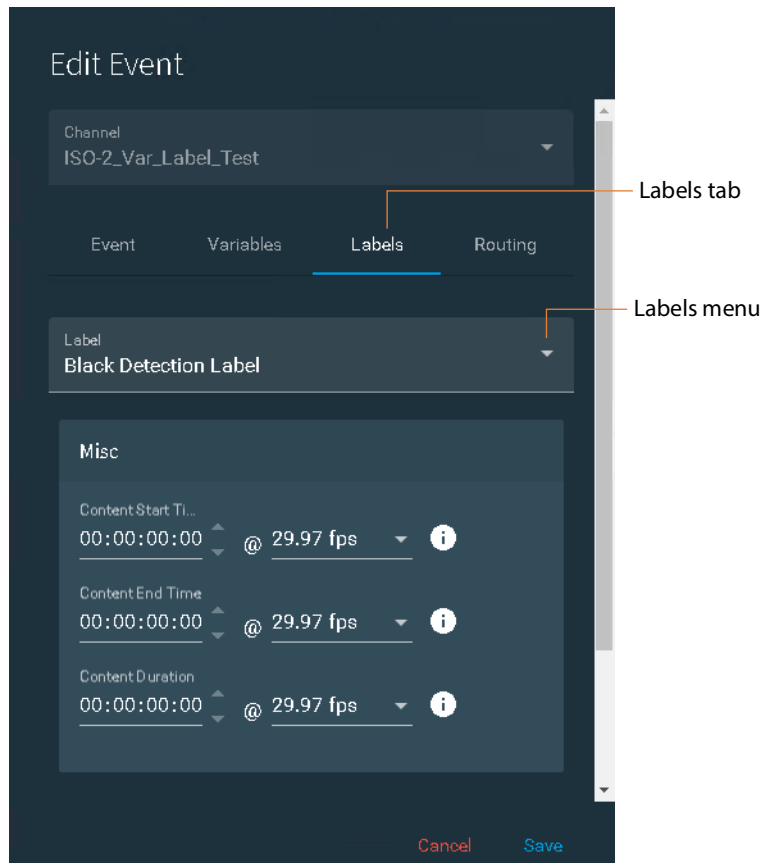
Select each label that you want to update, enter/update each field's value, and then click Save. These values are inherited by all future events you create for this channel, but may be overridden at the individual event level ([Setting Event-level Labels](#)).

Setting Event-level Labels

To update labels for a specific event, click the More  button in the event card's toolbar and select Edit Event:



Live Schedule Pro displays the Edit event dialog—click the Labels tab:



Select each label (if you have multiple) from the Label menu to update, enter/update the field values, then click Save.


Previewing Media with Glim

Glim—a Telestream video preview and management product—enables you to remotely view and inspect media files without a proxy. Glim can view growing files during capture in open workflows.

Note: Telestream’s Glim is a separately licensed product—contact Telestream for more information. See [Obtaining Support | Information | Assistance](#).

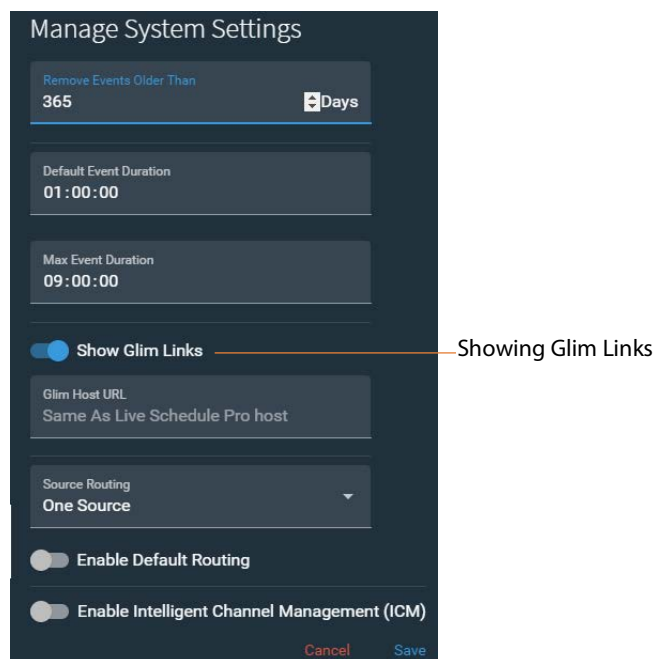
You can download and install Glim from Telestream’s Download Center at dynamic.telestream.net/downloads/login.asp.

Enabling Glim links

To display Glim links on your event cards, click Live Schedule Pro’s More  menu...



and select System Settings to display the Manage System Settings dialog:



Update these two controls and click Save:

Show Glim Links. Enable Show Glim Links when you have Glim installed, and you want to display Glim links on each event when the file is available. If you enable Glim links but don’t install Glim, the link can’t be resolved—Chrome reports this error: This site can’t be reached.

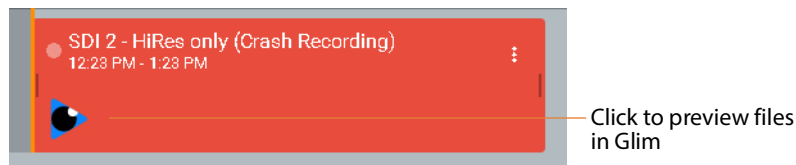
Glim Host URL. When Show Glim Links is enabled, specifies the URL of the Glim program's host (*localhost* | Windows Domain Name | IP Address) at port 5000. For example: `http://localhost:5000/`. If left empty, the URL is formed for launching Glim from the Telestream Live Schedule Pro Service host.

If Glim is running on a remote server, the paths to the media must be accessible to GLIM for playback. Generally, Capture workflows should be configured to write to UNC paths, and you'll need to enable Allow UNC Locations in Glim.

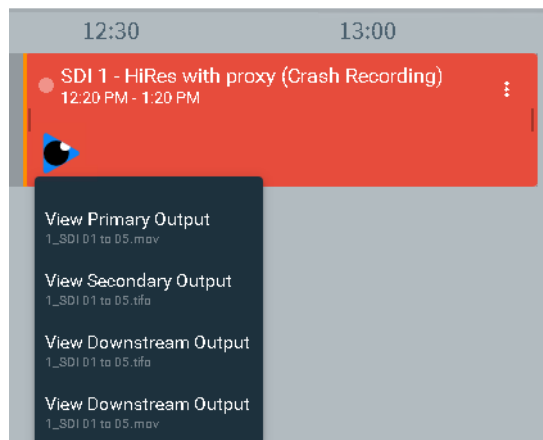
Previewing Media

When you enable Glim, jobs created from Live Schedule Pro events and externally-created events display the Glim button, which you can click to play the file in GLIM. If your Capture workflow also contains Copy actions, the Glim menu also lists the copied files so that you can preview them as well.

When a Live Capture workflow is configured to record in open mode, the files are ready to opened about ten seconds after recording starts. Glim links display as soon as a path for the output file is recorded in the Vantage database. However, only open workflows allow you to open the file before capture is complete.



If the workflow generates multiple output files (for example, hi-res and proxy,) click on the GLIM link and select from the files in the Glim menu:



If the events panel is in horizontal mode (where channels are to the left in a column—[Using the Events Panel](#)), expand the channel to display the thumbnail and the Glim link.

Using Source Routing

You can utilize SDI and IP (ST 2110) source routing when RouteMaster software is installed, licensed and integrated in Live Capture (see [Implementing RouteMaster Router Control](#)).

Topics

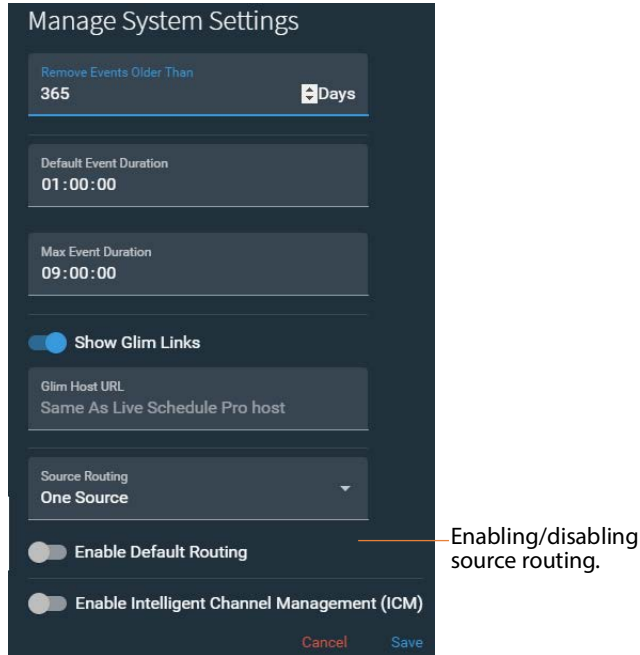
- [Enabling | Disabling Source Routing](#)
- [Configuring SDI Routing on Events](#)
- [Configuring IP \(ST 2110\) Routing](#)
- [Enabling | Disabling Default Routing](#)

Enabling | Disabling Source Routing

To enable (or disable) source routing, click Live Schedule Pro's More  menu...



and select System Settings to display the Manage System Settings panel:



Enabling Source Routing

To enable RouteMaster source routing....

Select Source Routing > One Source for single SDI or IP (ST 2110) sources to specify that the SDI | ST 2110 source is specified as SingleLink in Source Manager

OR

Source Routing > Four Sources for QuadLink 3G | 12G SDI sources to specify that the source is specified as QuadLink in Source Manager.

Note: You can only use QuadLink for SDI router feeds, not ST 2110 sources.

When source routing is enabled, Source Routing controls display at the bottom of the Create event dialog, where you can apply routing specifications.

Next, specify which sources you want displayed for potential selection when you're configuring a routing change in an event.

Disabling Source Routing

When RouteMaster is not implemented, to disable source routing, select Source Routing > Disabled and click Save.

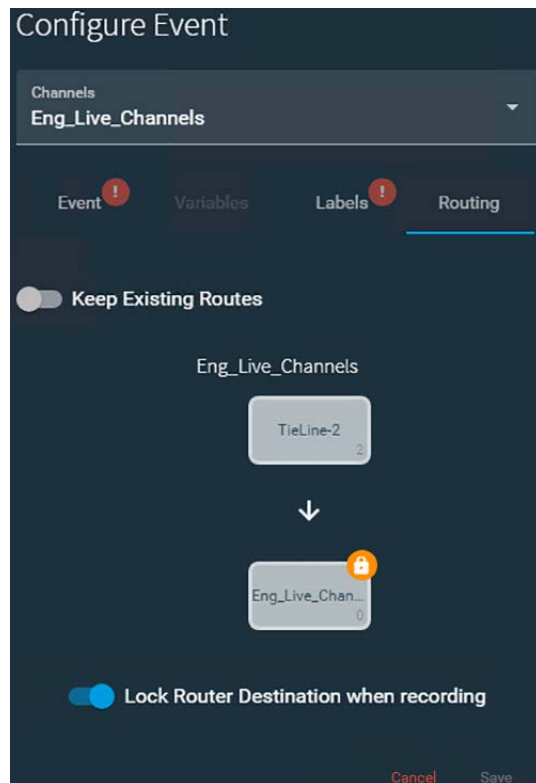
Configuring SDI Routing on Events

If you have installed Telestream RouteMaster and enabled routing control ([Enabling | Disabling Source Routing](#)), display the Routing tab to dynamically re-configure (route) sources on a channel-by-channel basis. You can edit routing settings in any state for single and recurring events.

Note: Using the Routing tab for a specific channel during event creation is functionally equivalent (but more convenient) to using the Router Configuration dialog and selecting that channel (SDI port) and configuring its routing there.

If you are creating events for multiple channels, each channel's route is displayed vertically in this tab, which you can edit it as appropriate. You are warned if changing routing for an event in progress that it may disrupt the recording.

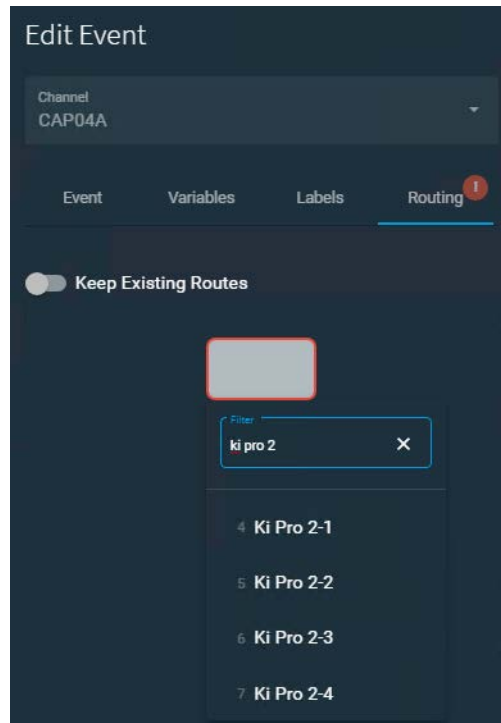
Live Schedule Pro displays the Configure | Edit event dialog:



When you add an event, select one or more channels from the available set—all routes are configurable in the routing table, arranged vertically.

Keep Existing Routes—To maintain the current source for this channel as configured, enable this control. By default, an event maintains the existing route, so that you don't have to define routing for each event.

When you disable Keep Existing Routes, you can change the route for this event, as shown here unless the route is locked (see below):

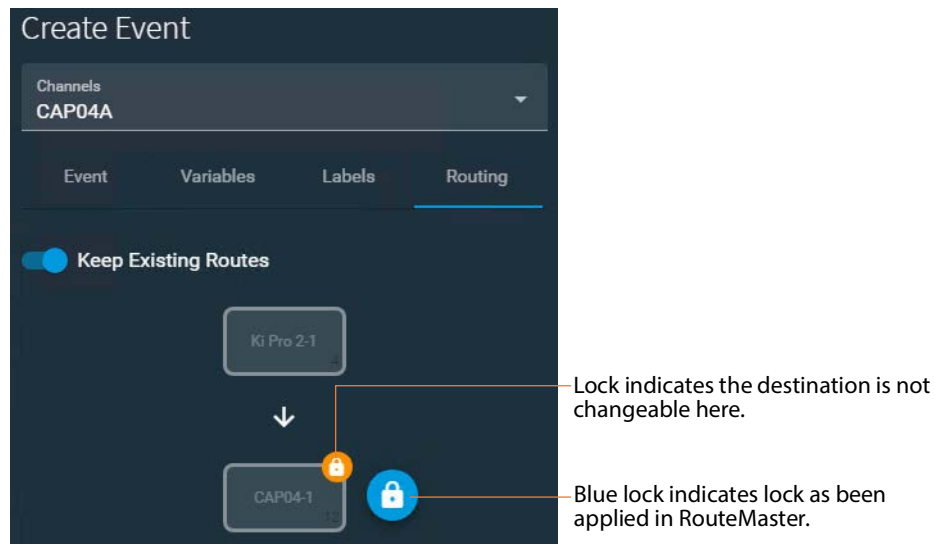


The list of sources is controlled by the sources in Router Configuration you've enabled for selection—they display an eye icon. See [Implementing RouteMaster Router Control](#).

Note: You can also change the route while recording is pending or in progress. You are warned if changing routing for an event in progress that it may disrupt the recording.

Lock Router Destination When Recording—Default: Locked. Displays only when Keep Existing Routes is disabled to allow you to set a route other than the default.

When locked, no other device with access to the router can change the channel's destination for the duration of the event, from queue time to end of the event.



When you lock the destination, when the event is recording the channel, other events that are created for that channel also indicate the lock status. In this case since the destination was locked by an event, the lock icon is enabled and allows you to unlock the channel. If you do unlock it, Live Schedule Pro prompts you for confirmation: Are you sure you want to unlock the selected destination?

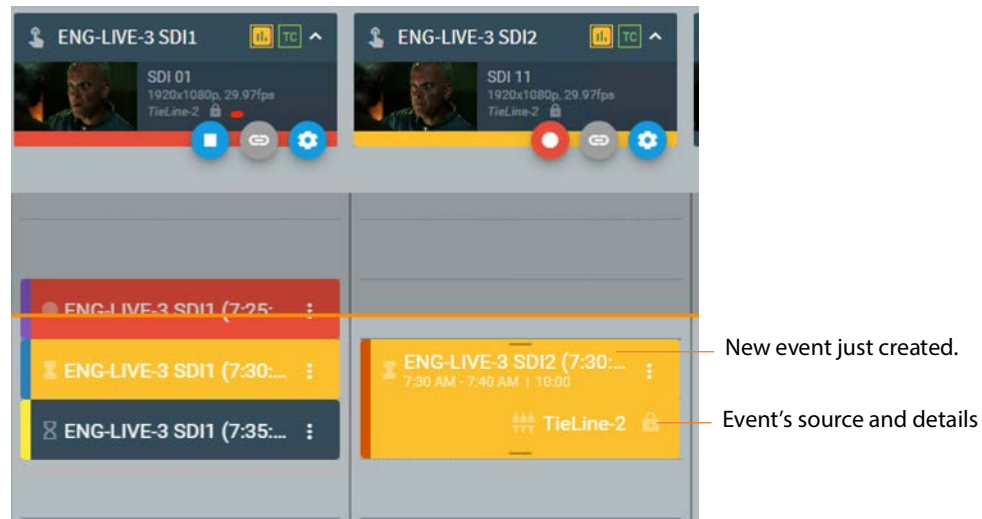
The lock state is also represented in the Route Configuration panel. Locking may be implemented directly in the Router Configuration Control Panel (More > Router Configuration), in order to lock the channel statically, without the lock state being tied to an event (see [Locking a Channel](#)).

Source Routing. The Source and Destination controls (following) only display when source routing is enabled (see [Enabling | Disabling Source Routing](#)). Abutting events (two adjacent events, separated in time by the queue time (two minutes) or less on a given channel cannot have a routing change: the routing change for a queued event disrupts the ongoing event.

Source. Specifies the input source from your router. Manually enter the source name or select it from the menu. As you begin typing, only those sources that contain the string display, enabling you to quickly identify and select the source that you want to use.

Destination. Specifies the label identifying the target of the router. (See [SDI Router Configuration](#)).

Click Save to update the configuration and close the dialog. Live Schedule Pro displays it on the schedule, as shown here:



Note: When Source Routing is enabled, Live Schedule Pro displays the source name and type by icon, plus the lock, indicating whether the route is locked or not.

When an event configuration has a change in routing, the event card displays the routing source at the bottom part of the event card.



Note: In the event panel's horizontal layout ([Creating and Working with Events](#)), disclose the channel lane to show the bottom half of the card.

Configuring IP (ST 2110) Routing

To configure source routing for ST 2110 sources, you must use Source Manager—RouteMaster configuration and event-based routing is only effective for SDI sources.

Note: You can also use Source Manager for routing SDI sources. However, source routing on an event-by-event basis can conveniently be performed directly in the Create Event dialog ([Configuring SDI Routing on Events](#)) when you're adding an event. You can also use the RouteMaster Configuration dialog ([SDI Router Configuration](#)) for system-wide source routing configuration.

Follow these steps in Source Manager to use RouteMaster to control ST 2110-based input:

1. Open Workflow Designer and deactivate all Capture workflows.
2. Launch Source Manager in Chrome—<http://localhost:8090/sources>, for example.
3. Select the ST 2110 input that you want to associate with a router destination and click the edit button to display the Configure Source dialog (partial shown):
4. In the Description field, define the route used by RouteMaster by using the keyword *destination*. You associate the Lightspeed Live IP input with the router connection—enter *destination* followed by a colon (:) and the number of the output from the router that is connected to the Lightspeed Live IP input.

For example: Router output 152 is specified as `destination:152`.

Note: Some routers use 0 as the output index offset, so consider the offset when entering the value. In this case, router output 1 should be entered as `destination:0`.

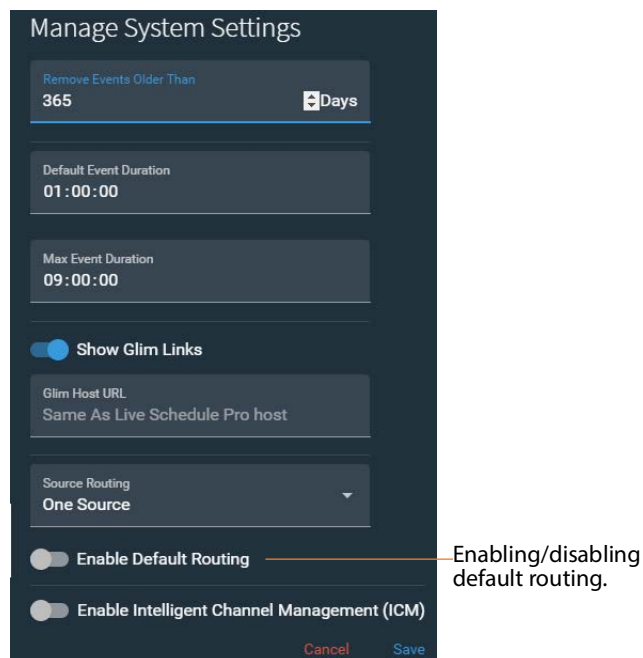
5. Click Save to update the source specifications and dismiss the dialog.
6. Open Workflow Designer and deactivate all Capture workflows.

Enabling | Disabling Default Routing

Default Route is also known as *route parking*. When you are using RouteMaster, you can optionally specify a default route that is always routed to the destination, except when recording is in progress. To enable (or disable) default routing, click Live Schedule Pro's More \vdots menu:



Select System Settings to display the Manage System Settings panel:



Disabling Default Routing

To disable activating a default route, disable Enable Default Routing and click Save.

Enabling Default Routing

To enable a default route, enable Enable Source Routing and then select the route source from the menu. This route is applied to all events in all channels, system-wide, unless you override it on a specific channel.

Modifying the Default Route on a Specific Channel

When default routing is enabled, you can specify a route that is different from the system-wide default route. Click the gear button on the channel and select Change Default Route. In the Default Route dialog, select from the routes in the menu or select Same as General Settings to return it to use the system-wide setting.

Managing Live Schedule Pro

Managing Live Schedule Pro involves more than just working with channels and their events— it also includes optional integration of SDI and IP source router control—plus configuration, licensing, and other managerial tasks including database operations and troubleshooting.

Topics

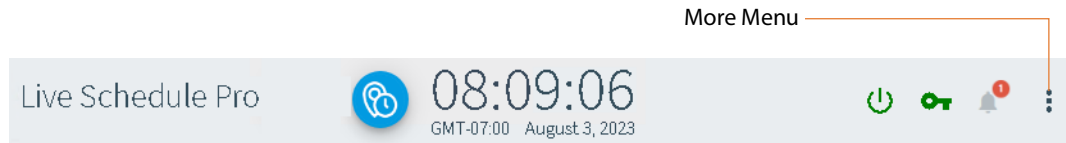
- [Event Management for Multiple Domains](#)
- [Implementing RouteMaster Router Control](#)
- [SDI Router Configuration](#)
- [Managing Your Live Schedule Pro License](#)
- [Accessing Documents and Contacting Telestream](#)
- [Managing User Preferences](#)
- [Configuring Live Schedule Pro Credentials](#)
- [Performing Database Operations](#)
- [Troubleshooting](#)
- [Managing System Logs](#)
- [Implementing Intelligent Channel Management](#)

Event Management for Multiple Domains

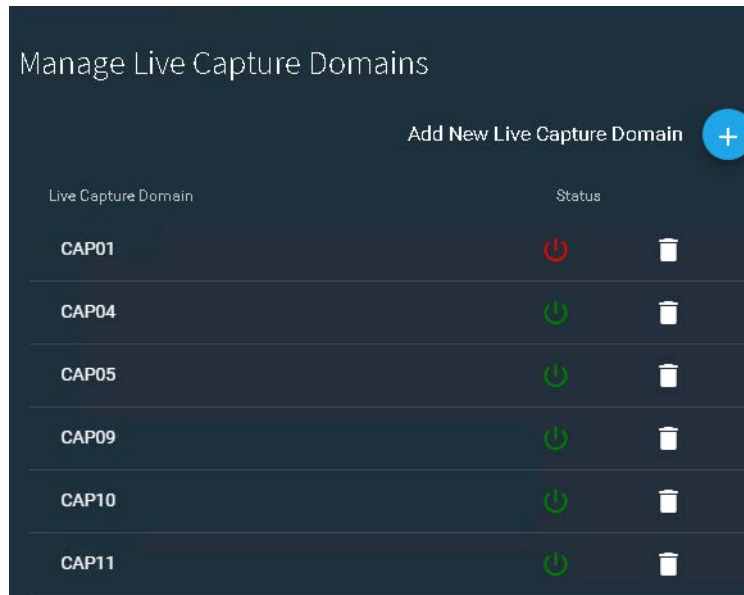
You can scale Live Schedule Pro to create and manage events across multiple Live Capture domains, where each domain may be a single node or an array (multi-server domain), where each server hosts a Vantage Live Service. These domains are often simpler to configure, and may be on-premise or virtual machines.

Note: A Live Capture domain—a Vantage domain that includes Lightspeed Live Capture—the *localhost* domain is automatically added to Live Schedule Pro and functions the same as in previous Live Schedule Pro versions. If Live Schedule Pro is running on a server other than the first (or only) Live Capture domain, you'll have to add it manually and delete the *localhost* entry.

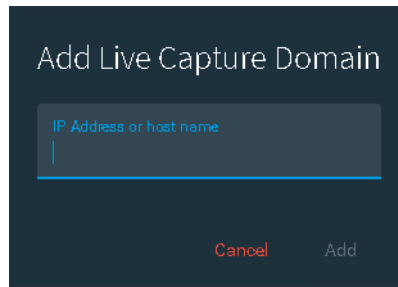
To manage multiple domains, select  More > Manage Live Capture Domains:



Live Schedule Pro displays the Manage Live Capture Domains dialog:

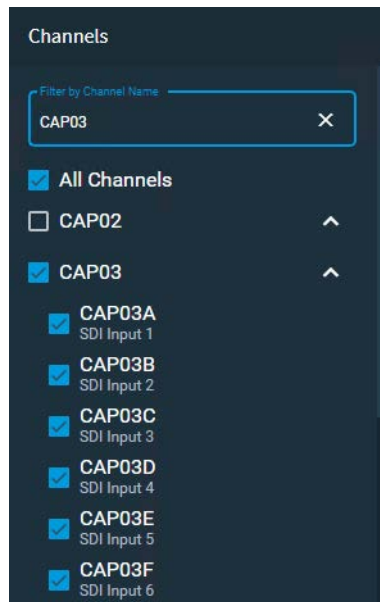


Adding a New Domain—Click the add  button to add a new Live Capture domain. Live Schedule pro displays the Add Live Capture dialog:




Enter the IP address or DNS name of the Live Capture domain server. Or, in the case of a Live Capture domain, the IP address | DNS name of the database server for the domain. Click Add to add it to the set and verify that the connection indicator displays green or resolve the connection.

If the domain has activated channels (active workflows), they display immediately in the Channels panel:



In the Channels pane, channels are listed per channel group, along with the source channel name.

Removing a Domain—Click the Delete  icon of the Live Capture domain you want to remove from event management.

Implementing RouteMaster Router Control

Optionally, you can integrate Live Schedule Pro with Telestream RouteMaster for unified SDI and IP (ST 2110) (via SDVN) router control.

Note: Telestream RouteMaster is an optional, licensed program. Integration with Telestream RouteMaster requires Telestream RouteMaster installation and a license from Telestream. Contact your Telestream sales representative or reseller to purchase Telestream RouteMaster and obtain the installer and license.

The maximum router size permitted is 8192 x 8192. Router source/destination names are refreshed once per hour by default.

Key Features

- When source routing ([Implementing RouteMaster Router Control](#)) is enabled, you can configure events to change router sources using the Source and Destination names as defined by the router (crosspoint names/mnemonics) during event configuration (see [Creating and Configuring Events](#)).
- You can define a list of Telestream RouteMaster sources (see [SDI Router Configuration](#)) in Live Schedule Pro Settings to constrain the sources available to an event.
- You can filter the list of source routing fields when setting routes (see [Creating and Configuring Events](#)).
- When Keep Existing Routes is disabled, the operator can make routing switches when adding a new event.
- You must add router destination information in the SDI source configuration (see [Implementing RouteMaster Router Control](#)), enabling Live Schedule Pro to associate a channel with a specific destination.

Note: To avoid having events associated with a channel change the routing settings during events in progress, you should only have a single active workflow using a given source. Only one event should have router control for a given channel at a time, including queue time.

Supported Downstream Router Protocols

Telestream RouteMaster can control downstream routers using these protocols:

- Blackmagic Videohub
- Evertz/Quartz Type 1
- GVG Jupiter ASCII
- GVG Native
- Harris LRC
- Harris/Leitch Passthru
- Kramer 2000 and 3000
- Nevision Sublime MRP
- Nevision Compact NCB
- NewTek NDI
- NVision Compact Router
- NVision NV9000
- PESA P1N
- Pro-Bel SW-P-02 General Switcher
- Pro-Bel SW-P-08 General Remote
- Sierra Aspen
- Utah Scientific RCP3

Integration Tasks

Before you can use Telestream RouteMaster, perform these tasks:

1. Purchase Telestream RouteMaster, install it and add the license ([Installing/Updating Telestream RouteMaster](#)).
2. Configure Telestream RouteMaster ([Configuring Telestream RouteMaster](#)).
3. In Live Schedule Pro, enable source routing ([Configuring Live Schedule Pro Source Routing](#)).
4. Define a list of Telestream RouteMaster sources (see [SDI Router Configuration](#)) in Live Schedule Pro Settings to constrain the sources available to an event.
5. In Live Schedule Pro, crash record target channels and verify that the source you've routed is correct ([Crash Recording a Single Channel](#)).


Configuring Telestream RouteMaster

Follow these steps to enable and configure Telestream RouteMaster:



1. Open the Telestream RouteMaster program from the desktop shortcut (don't run the RouteMaster executable).
2. Select Settings > Configure Router to display the Manage Routers dialog. It should display a connection on port 7777.
3. In the Routers panel on the left, check Start Running Automatically to enable the Telestream RouteMaster Service to start automatically when the server reboots.
4. In Manage Routers, add your router(s). Select each router in turn, and use the tabs to configure it as appropriate for your environment:
 - In the Connection tab, select the protocol—for example, Blackmagic Videohub. Check TCP/IP (Ethernet) and specify the router's IP address and port or click Default to set the default port. Click OK to save settings and close the dialog.
5. In Settings > Configure Clients > Websockets and Panels, under WebSocket Port, set the WebSocket Port to 810, which is required for Live Schedule Pro to connect to the Telestream RouteMaster program.
6. Click OK to save these settings and close the dialog.
7. Click Run to verify that it can connect to the router. The RouteMaster program should connect and enumerate all the router mnemonics—source and destination names. See status line at bottom of window.

Configuring Live Schedule Pro Source Routing

In Live Schedule Pro's More  menu, select System Settings. Select One Source in the Source Routing menu to display source routing options in events that you create.

SDI Router Configuration


In the Telestream RouteMaster Program, use the Router Configuration dialog to associate router destinations with Lightspeed Live Capture Server input SDI ports, which is required for event-driven route switching.

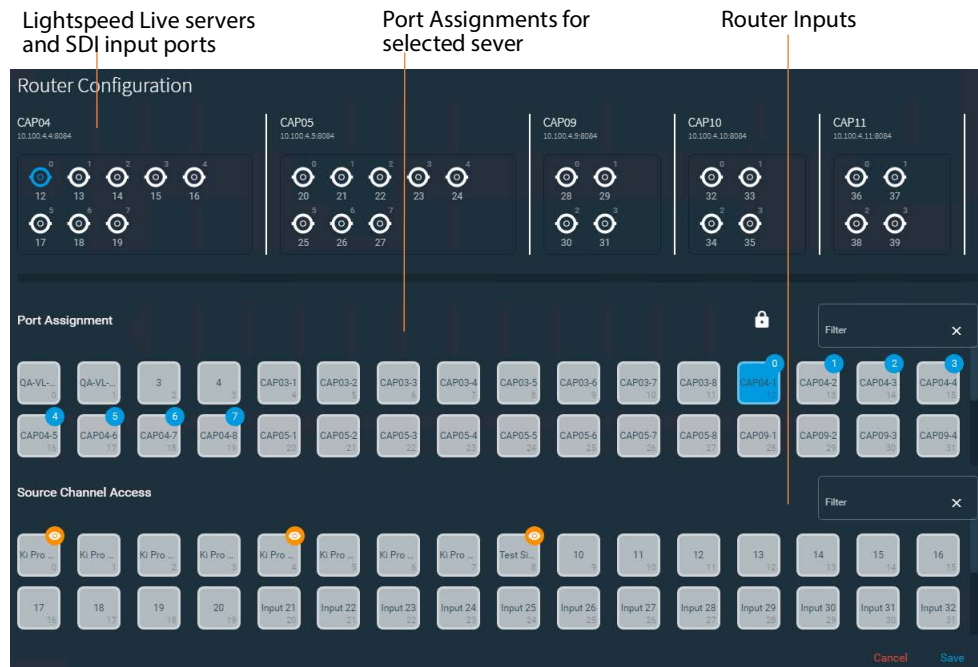
Based on this configuration, you can select the available sources as you add and configure events (see [Creating and Configuring Events](#)).

Note: If your Router Configuration dialog doesn't display the Port Access and Source Channel access tables, make sure that Source Routing is enabled in System Settings—specify One Source only (see [Configuring SDI Routing on Events](#)). Then, close and re-open—or refresh—your browser. Make sure that each Lightspeed Live Server you're configuring has an active workflow so it is recognized by Live Schedule Pro and displays in the Router Configuration dialog.

For information about using Telestream RouteMaster, see the RouteMaster User Guide at rascular.com.

Note: If you are accessing Live Schedule Pro from a workstation other than the Telestream Live Schedule Pro Service host, access to More > Router Configuration may be de-activated. You may have to add the Telestream Live Schedule Pro Service host's DNS name | IP address to your hosts file to resolve the issue.

Click the More  menu > Router Configuration to display the Router Configuration dialog:



The Router Configuration dialog enables you to assign SDI router labels/mnemonics to SDI ports on each Live Capture Server in your Live Capture server/array. (The Router Configuration dialog does not support ST2110 sources).

The dialog displays router information in three tables, which you use to view and control video source utilization in each event you add:

Lightspeed Live Server—This top table depicts each Lightspeed Live Server (with its IP address below the name) in your array, based on at least one capture workflow referencing a source on that server (even if it is not an SDI source). For each server displayed and selected, its SDI inputs are shown and selectable to the outputs of the router.

Note: If you don't have an active workflow running in Vantage that references the server, it won't display here.

The number above the SDI port is its port number; the number below the SDI port is the connected router's port number.

Select an SDI port on a server to highlight it in blue. As you select an SDI input, the associated output of the router in the Port Assignment row also displays in a blue circle.

Port Assignment—This second table depicts the router you are connected to. In this example, the server is connected to a 40-port router. Use the scroll bars to display all ports.

The labels in the Telestream RouteMaster program's Output column (each label also has a zero-based index value) represent the router's SDI output port. These are labels, not video streams; the stream may be changed in Telestream RouteMaster or in a video router; it would be transparent to Live Capture. When you select an SDI input port in any Capture server in the top row, the output associated with an SDI port on that server displays in blue; its index in a blue circle on the output indicates it is in use.

Each port displays its mnemonic in the box; hover over it to display the full mnemonic. Use the Filter control to enter strings to show only those ports that satisfy the string. Delete the string or click X to display the complete list.

Use the lock button to lock the router destination specified for the SDI port, preventing modification during event creation. A lock is added to the badge on the port assignment.

Source Channel Access—The third table (router sources)—displays an indexed list of router inputs defined in the routers and collected by Telestream RouteMaster. Use the scroll bars to display all inputs.

Each port displays its mnemonic in the box; hover over it to display the full mnemonic. Use the Filter control to enter strings to show only those ports that satisfy the string. Delete the string or click X to display the complete list.

Making a Source Input Selectable

Use this table to limit the inputs that are available for selection during event creation as depicted by an eye symbol; they are not available by default: if all are unavailable, all of them display for the operator to choose from. If one or more are made visible, only visible sources display for selection in the Create Event dialog's Routing tab (when Keep Existing Routes is disabled), so that you can select from these ports.

To add an input to the selection list in the Create Event dialog, click on it. Route Configuration adds an eye icon; click it again to remove it from the list and remove the eye icon.

Locking a Channel

When you select an SDI input, the associated port is also selected. Use the Lock button to lock the route, so that the channel is protected—no other device that has access to the router can change the channel's destination.

Live Schedule Pro displays a lock on the route in Create Event dialogs as well, to prevent the ingest operator from making source changes in Live Schedule Pro events (see [Creating and Working with Events](#)).

Associating a Router Output with an SDI Port

SDI ports in the Capture Server display two numbers. The top number is the index of the port, and does not change. The bottom number (or question mark if unassigned) displays the index of the mnemonic you've assigned it.

To assign an output defined in Telestream RouteMaster to a specific SDI port, follow these steps:

1. Click on the Capture Server's SDI port you want to assign. It displays blue.
2. Now, click on the output port label in the Port Assignment row that you want to assign to the selected port. The bottom number or ? character changes to the index of the selected port.
3. Continue selecting SDI ports and assigning output ports as required.
4. When you're done, click Save to update the settings and close the dialog.

Disconnecting Router Output from an SDI Port

To dis-associate a route from a given SDI port:

1. Click the SDI port on the target Capture Server to select it. Its associated label from the router in the Port Assignment row displays highlighted.
2. Click the router label to deselect it.
3. Save the configuration and dismiss the dialog.

Managing Your Live Schedule Pro License

Live Schedule Pro is implemented as a Windows service with an embedded web app. It requires a license, obtained from Telestream. Live Schedule Pro also provides an optional maintenance and support license, in addition to the utility license.

Note: You can activate/deactivate the license on a server with or without Internet access. For online activation, port 443 must be open.

Live Schedule Pro is controlled by per-node licensing. The number of Capture servers that can be controlled by each Live Schedule system is determined by the license. Each Capture server you control with Live Schedule Pro requires a license.


For a multi-node system, the Telestream Live Schedule Pro Service detects a server when the first Capture workflow on that server is activated, and enables servers up to the licensed capacity in alphabetical order by the Windows name.

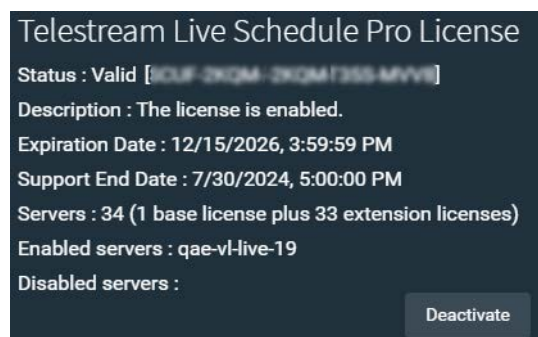
When a server beyond licensed capacity is detected (as a result of a Capture workflow on that server being activated), an error displays to indicate the server is not enabled. Events added with channels that use that server fail to record, and an error displays at the time the recording starts.

To manage your license, open the Live Schedule Pro web app and display the Telestream Scheduler License panel: Click the License Indicator button—the license button—in the tool bar (top-right corner of window).

- [Activating a License on a Server with Internet Access](#)
- [Activating a License on a Server without Internet Access](#)
- [Deactivating a License Online](#)
- [Deactivating a License Offline](#)

Viewing your License Details

Live Schedule Pro provides a maintenance and support license, in addition to the utility license. To view your license details, click the license  button (it may display red) to display the Telestream Live Schedule Pro License panel:





The utility license expiration date displays in the Expiration Date field. The maintenance and support license expiration date displays in the Support End date field.

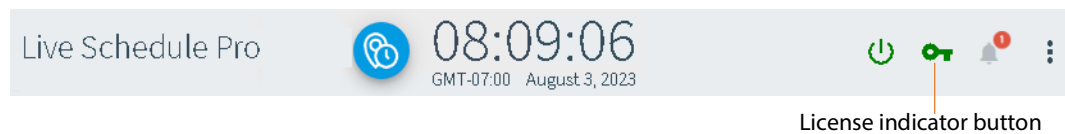
Activating a License on a Server with Internet Access





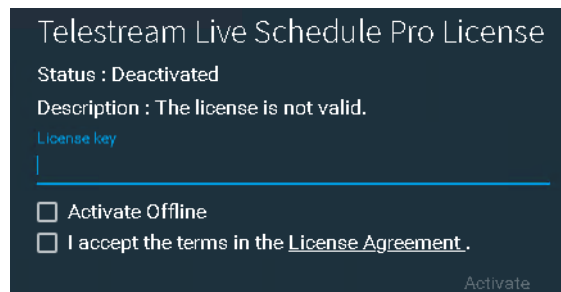
You perform all license activation and management directly in the Live Schedule Pro web app. Follow these steps to activate a Live Schedule Pro license when the server hosting the Telestream Live Schedule Pro Service has Internet access:

Note: If the license button is green , your license is already activated. If the button is orange , your utility license is valid but your maintenance and support license is expired or you don't have one.


1. Obtain a license from Telestream—see [Obtaining Support | Information | Assistance](#).
2. Open the Live Schedule Pro web app in Chrome—
`http://localhost:6500` | `http://<LiveCaptureServer>:6500`. For details, see [Launching the Live Schedule Pro Web App](#).



3. Click the red | orange license  button in the toolbar to display the Telestream Live Schedule Pro License panel. If the button is green, your license is already activated. If the button is orange , your utility license is valid but your maintenance and support license is expired or you don't have one.



4. Open the file and copy the entity key-pair value, and paste it in the license key you obtained from Telestream.
5. Read the license terms by clicking the License Agreement link. Check the I accept the terms... checkbox if you agree to the terms, and click Activate.

When your license has been successfully activated, the Live Schedule Pro license panel indicates the successful activation of the license by displaying the license status as Valid and displays the expiration date. The license  button displays green.

6. Click away from the Live Schedule Pro license panel to close it.
7. Save a copy of the license number in case you need to re-apply it.


Activating a License on a Server without Internet Access

Follow these steps to activate a Live Schedule Pro license when the server that hosts Telestream Live Schedule Pro Service doesn't have Internet access. Activation (and license management) is performed directly in Live Schedule Pro.

Note: If the license  button displays green, your license is already activated.


Follow these steps:

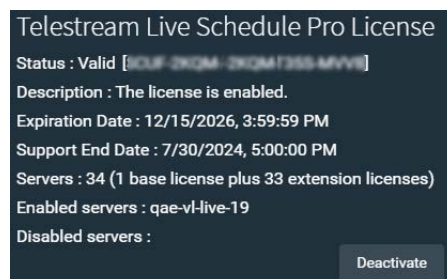
1. Obtain a license from Telestream. See [Obtaining Support | Information | Assistance](#).
2. On the server hosting the Telestream Live Schedule Pro Service, open Chrome and enter this URL:
`http://localhost:6500/license/id?key=[YourLiveScheduleKey]`.
Live Schedule Pro returns a string of characters similar to this: `GXTTCIIUWUCXSGHB-WUOGJWLAWUIOKXKUWUISSOGJ7FOMBNHE3DENZNGVDEGNRNH`.
3. Copy and paste this string into a text file that you can save locally or access on another computer. Or, send it to the email address used on the other computer.
4. On the computer with Internet access, open <https://cws.telestream.net/offlineactivation.aspx>.
5. Enter the string returned by Live Schedule Pro in [Step 2](#) and click Submit.
Telestream creates the off-line activation code and downloads it in a file.
6. Move the file to a folder on the Live Schedule Pro server.
7. In the browser, enter this URL: `http://localhost:6500/license/activate-offline?key=[YourLiveScheduleKey]&license=[Path/To/File]`
8. Open/refresh the Live Schedule Pro web app.

When your license has been activated, the license  button displays green. Click the license button to display the Live Schedule Pro license panel, where it should indicate the successful activation of the license by displaying the status as Valid.


Deactivating a License Online

To deactivate a license online, follow these steps:

1. In the Live Schedule Pro web app, click the license  button to display the Schedule License panel:



2. Click Deactivate.
3. In the Deactivate panel, confirm by clicking Yes.

Live Schedule Pro deactivates the license; the license  button should display red. Live Schedule Pro displays the panel again, showing the status as deactivated.

Deactivating a License Offline


Offline license deactivation and transfer must be arranged through Telestream. Contact Telestream Support ([Obtaining Support | Information | Assistance](#)) and advise that you want to deactivate your Live Schedule Pro license which was activated offline, for transfer to another system or remove entirely.

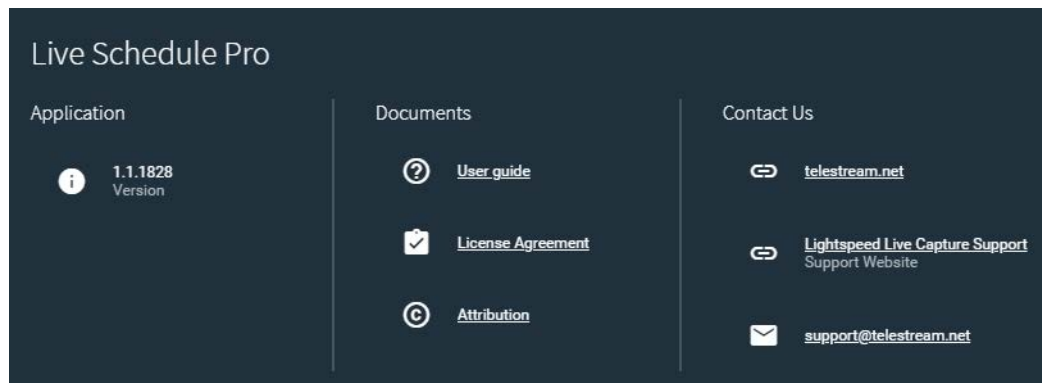
When advised, remove these JSON file folders from the server where the Telestream Live Schedule Pro Service is installed:

- `C:\ProgramData\Telestream\Licenses\`
- `C:\Windows\System32\config\systemprofile\AppData\Local\Telestream\Licenses\`.

to complete deactivation of a license which was activated off-line.

Accessing Documents and Contacting Telestream

Click Live Schedule Pro's More  menu > About to display the Live Schedule Pro information panel:



Use this dialog to determine your application's version, access this guide and other Live Schedule Pro-related documents, and find out how to contact Telestream for assistance.

Application

Version. Displays the version of Live Schedule Pro you are using.

Documents

User Guide. Displays the Live Capture User Guide (this document) in PDF format. This guide is also published on the [Telestream web site](#) and on the Lightspeed Live installation USB drive.

License Agreement. Displays the Live Schedule Pro end user license agreement.

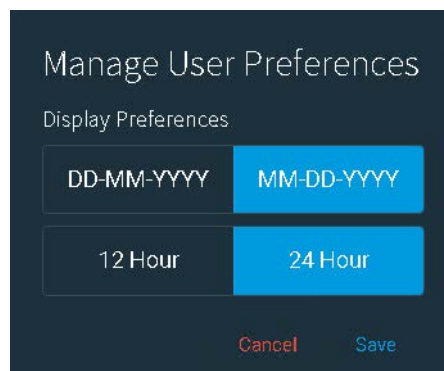
Attribution. Displays acknowledgments to use of third-party software libraries and third-party licenses.

Contact Us

Use these methods to communicate with Telestream. See also [Obtaining Support | Information | Assistance](#).

Managing User Preferences

Select **⋮ More > User Preferences** to display the Manage User Preferences dialog—where you can choose how to display time and dates—and make adjustments:



Display Preferences. Specifies the format you want to use to display dates and times in events and elsewhere in Live Schedule Pro:

Date: Select *DD-MM-YYYY* | *MM-DD-YYYY*.

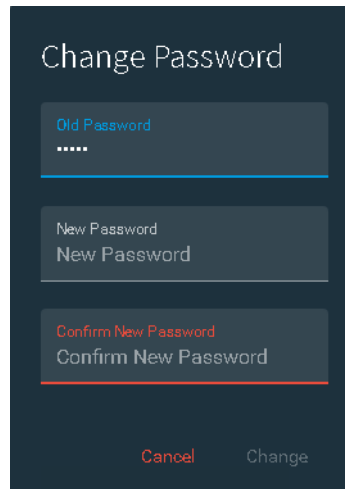
Time: Select *12 Hour* | *24 Hour*. The time is displayed in your specified format at the top of the schedule, along with the time zone and date.

Click **Save** to update your preferences.

Configuring Live Schedule Pro Credentials

The permanent user name is *admin*; the default password is *live!*

To change the admin user's password, select **More > Change Password** to display the Change Password dialog:

A dark-themed dialog box titled "Change Password". It contains three input fields: "Old Password" with a blue label and masked dots; "New Password" with a blue label and the text "New Password"; and "Confirm New Password" with a red label and the text "Confirm New Password". At the bottom, there are two buttons: "Cancel" in red and "Change" in white.

Enter your current password, then enter your new password twice. Click **Change** to update the password.

Note: A service restart isn't required for the change to take effect. If you want to verify the change, log out of Live Schedule Pro and then log back in with the new password.

Performing Database Operations

You can back up and restore your Live Schedule Pro database as required, for archival and disaster-recover purposes.

Backing Up the Database

In Live Schedule Pro, select the **More** **More** menu **> Backup Database** to create a SQLite database file in the browser's user download folder, with this naming convention:

SchedulerDb-YYYY-MM-DDTHHMMSS.

For example: `SchedulerDb-2023-08-24T085404.db`.


When the backup operation is complete, the browser briefly displays an alert, informing you of completion.

Information regarding SQLite is at <https://www.sqlite.org/>.

Note: Backup/Restore database operations are intended to support disaster recovery. It is not meant to create a portable record of events, so the database must be restored to the same Live Schedule Pro system, with the same active workflow and channel configuration that existed at the time the backup occurred.

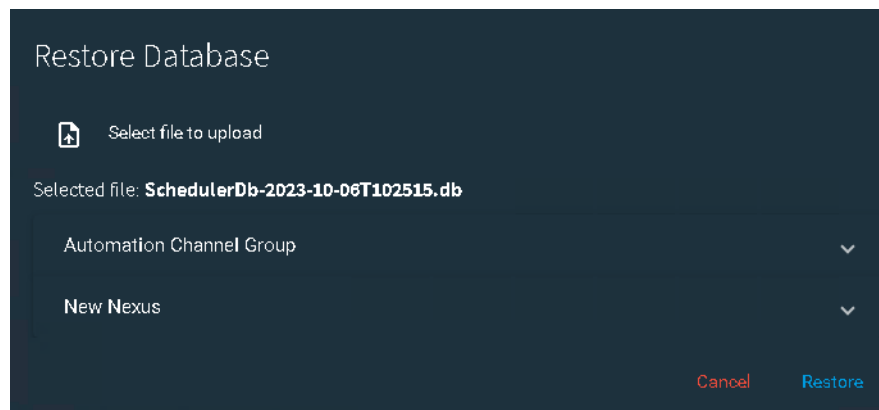
Importing Live Schedule Pro Events

To import a database backup file previously created from the same Live Schedule Pro system, follow these steps:

1. In Live Schedule Pro, select More  menu > Restore Database. Live Schedule Pro displays this dialog:



2. Click in the Select... field—Live Schedule Pro displays an OS-level File Open dialog.
3. Navigate to the location of the SQLite database file you want to restore and click Open. By default, it is located in the browser users download folder.
4. Back in the Restore Database dialog, it displays the file name and the list of channel groups with details. Review to verify, and select another file if required.



5. Click Restore to replace the existing database records with the records contained in the backup file.
6. Live Schedule Pro displays a confirmation dialog. Click Yes to continue or No to cancel.

Live Schedule Pro immediately replaces the database contents and you can continue your work.

Troubleshooting

Use the following topics to identify problems and fix them.

Resolving connection problems with web apps

When using Live Capture web applications on a workstation and connecting to a Capture server over the network, you may experience certain connection problems when you are not using DNS. For example, you may see a No Event message instead of video thumbnails. Or, video previews don't display or the web app doesn't indicate connection to the required services.

The Live Schedule Pro web app must be able to resolve all the host names of the IIS/ Live Schedule Pro and Capture servers. For example, if you are running Live Schedule Pro outside of the subnet of the Telestream Live Schedule Pro Service and Live Capture Service servers and it can't resolve the host names, the hosts file of the client workstation must be configured to match IP addresses to host names for all required servers in the Live Capture array.

To facilitate connections on servers | workstations that do not utilize external DNS for name resolution:

- Capture arrays require connections using host names, not IP addresses
- If external DNS isn't available, host name resolution should be configured as described.

Update the *hosts* file on the computer you are using to run the web applications. This procedure describes how to correct this problem for Mac OS and Windows workstations.

Updating the hosts File on Mac OS

On a Mac OS computer, add the server IP address and host name to the *~/etc/hosts* file and save it. Perform the following steps:

1. Open the Terminal application—go to Application > Utilities and double-click Terminal.app.
2. Enter `sudo nano/etc/hosts` and press Return.
3. Enter the administrator password for the computer and press Return.
4. Position the cursor after all of the text in the window and type the IP address of your Lightspeed Live Capture server. For example: `102.54.94.97`
5. Press the tab key, then type the host name of the Lightspeed Live Capture server. For example: `CaptureServer1`
6. Press Ctrl-O and Return.
7. Press Ctrl-x to exit.
8. Flush your DNS table by executing `sudo killall -HUP mDNSResponder` in Terminal.
9. Quit the Terminal application.

Updating the hosts File on Windows

On a Windows computer, add the IP address and host name to the *hosts* file and save it. Perform the following steps:

1. In File Explorer, navigate to: `C:\Windows\System32\drivers\etc.`

2. Open the *hosts* file in Notepad.
3. On a new line, enter the IP address of your Lightspeed Live Capture server.
 For example: 102.54.94.97
4. Press the tab key and enter the host name of your Lightspeed Live Capture server.
 For example: CaptureServer1
5. Save the file and close Notepad.

Live Capture workflows are active but channels don't display

If your workflow is active, but its channel doesn't display, check the trigger type in the Capture action. Supported trigger types are: Manual | Web Service| Recurring Segment Trigger types.

If the workflow is set to use CalDAV or DAI (SCTE-104) triggers, the associated channel won't be displayed in Live Schedule Pro.

Recurring segment events don't start | end on exact frame

Capture operations for recurring segment events is not always frame-accurate with regards to event start and end times.

Waiting events don't start on time

Live Schedule Pro requires all sources to use the same time of day reference, and the server computer clock running the Live Schedule Pro must match this time.

For example, a Live Schedule Pro event that is set to start at 10 o'clock depends on the timecode of the source input to cross 10:00:00;00 to start recording. Arbitrary embedded source timecode cannot be used. Optimally, embedded timecode or LTC reference that matches time of day should be used. Live sources channels can also be set to use Computer Timecode that matches the Live Schedule Pro server time, but frame accuracy cannot be guaranteed for this use case, particularly when timecode resets at midnight.

Can't create an event at current time after stopping an event externally

This situation can occur when you stop a capture operation in Live Capture or stop the capture job directly in Vantage Workflow Designer, rather than in Live Schedule Pro.

Telestream recommends that you do not implement multiple, concurrent recording workflows on a given channel—it can lead to imbalanced CPU loads. If the recording event was stopped externally, the duration of the event isn't updated in Live Schedule Pro. In this situation, you must delete the completed event from Live Schedule Pro before you can start a new recording that runs at the same time on that channel.

Event card links to Glim aren't displayed

You have installed Glim and enabled it in Live Schedule Pro. However, your schedule is configured to display in horizontal mode and the Glim links are hidden.

To resolve the issue, expand the events to show the preview and view the full height of the event, including the Glim links.

Glim opens a file but won't play it

If the Live Capture action is configured to create an open file, Glim is able to open and play the recording in progress. However, if the Capture action is not operating in open mode or the format doesn't support open playback, Glim can't open the file until recording has completed and the file is closed.

Potentially, the Capture workflow isn't writing to a UNC path that is accessible by the GLIM server. GLIM requires configuration to access network shares. For details, see the Glim User Guide.

I created and started a Tape workflow, but its channel doesn't display

Live Schedule Pro does not create events for tape-based capture. Live Schedule Pro is incompatible with Tape workflow processing.

The Glim link is no longer available after 24 hours

Live Capture workflows expire after 24 hours by default, and at expiration the output file is deleted. When this occurs, the Glim link is removed from the event because the file is no longer accessible from the original location.

If you want to retain files, modify the expiration period in the Capture action.

Opening the routing panel causes an error

When you open the routing panel, Live Schedule Pro displays an error:
"An unexpected error occurred invoking GetVisibleRouterSources on the server. Websocket exception: Unable to connect to the server"

When Source Routing is enabled, the Telestream RouteMaster Service must be running. Also, verify the Telestream RouteMaster configuration—click the Telestream RouteMaster shortcut on the desktop and verify that Start Running Service Automatically is enabled so that the service starts when the server is rebooted.


Live Schedule doesn't display channels | won't connect to server

- Verify that the Telestream Live Schedule Pro Service is running
- Verify that the Vantage Live Service is running

- If the services have been interrupted or restarted while the Live Schedule Pro web app is open, refresh the browser to obtain connection status.

I can't work with an event I've created

I created an event, but I can't operate on it.

Resolution: If there is a string in the event filter (as indicated by a blue  filter button) and it excludes the event you're trying to use, the event displays translucent—and you can't interact with it. Click on the Filter button and delete the string or click the X button to clear the filter and enable all events.

Managing System Logs

Lightspeed Live Schedule Pro log files can provide valuable information about various Live Schedule Pro operations.

The log files are intended for use by Telestream Customer Service to troubleshoot problems. Consider obtaining the log files before contacting Customer Service so you can email them to Telestream as part of the support process.

Here's how to access the logs and control the level of information that is recorded.

Accessing Live Schedule Pro Log Files

Live Schedule Pro log files are written to `C:\ProgramData\Telestream\Scheduler\`.

Controlling Logging Settings

The information written to the log files can be changed by modifying the settings in the configuration file: `C:\Program Files\Telestream\Live Schedule Pro\appSettings.json`.

CAUTION: Before making changes to configuration files, make backups by copying the existing file and saving it in a safe location.

To change trace logging, change the minimum log level in the Serilog block:

```
"Serilog": {
  "MinimumLevel": {
    "Default": "Information"
```

Change the Default key-pair value to one of the keywords below and restart the Telestream Live Schedule Pro Service. You can also override specific components, as listed.

Keywords (from most restrictive to most verbose):

- *Fatal*: The most critical level; logs fatal events that demand immediate attention.

- *Error* (default): When functionality is unavailable or expectations broken.
- *Warning*: When service is degraded, endangered, or may be behaving outside of its expected parameters.
- *Information*: Information events describe things happening in the system that correspond to its responsibilities and functions. Generally these are the observable actions the system can perform.
- *Debug*: Debug is used for internal system events that are not necessarily observable from the outside, but useful when determining how something happened.
- *Verbose*: Verbose is the noisiest level, rarely (if ever) enabled in production.

Implementing Intelligent Channel Management

Intelligent Channel Management (ICM) enables operators to schedule an event to capture any channel added to a preset pool of channels, so they don't have to manually search for a channel that is available in a given time slot.

Topics

- [Overview](#)
- [Enabling | Disabling ICM](#)
- [Managing Channel Pools](#)

Overview

To configure Live Capture for operation with ICM, you should create a set of functionally equivalent Capture workflows in Vantage, each with specific encoding requirements and a unique input for every source channel you want included, on the Live Capture server(s).

A typical use case is where you have multiple Live Capture domains, and you create a set of workflows for SD or HD, or a set of workflow ProRes, or DNxHR. Now, you can control your source video via source routing, and ICM can balance workflows for a given encoding profile across multiple server, improving resource usage automatically.

Because this feature is designed to automatically select any workflow in the set, independent of system load or socket load balance, you should ensure that there aren't more active workflows than the server can sustain if all are activated simultaneously.

Note: The requirement that the workflows are identical is not enforced. If you are adding a channel to the pool that doesn't have the same variable or label requirements, you are warned that you're adding an unmatched channel.

After you enable ICM and create one or more channel pools, they are referenced as channel targets when you create a new events, in addition to individual unassigned channels.

When you create an event using a channel pool, Live Schedule Pro cycles through the channels in the pool that can schedule a recording in the given time slot, and automatically creates the event in one of the available channels.

If there isn't an available channel for an event, you are prompted to choose another channel pool or an unassigned channel for the target.

If source routing is enabled and the event requires a routing change, the routing tab in the Create Event dialog displays a channel pool routing destination. At the time the event starts, the route change is set using the actual route destination of the channel used for recording.

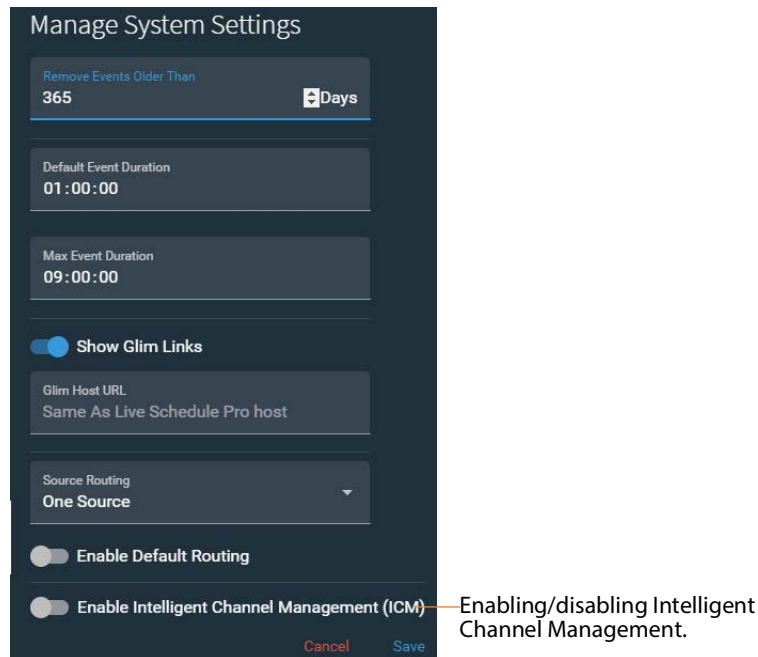
Note: If you are using ICM with source routing, all of the channels in ICM should use different sources (unique ports in RouteMaster Configuration). If you use the ICM with channels that share the same source, events may fail.

Enabling | Disabling ICM

To enable (or disable) ICM, click Live Schedule Pro's More  menu:



Select System Settings to display the Manage System Settings panel:



Enabling Intelligent Channel Management

To enable ICM, select Enable Intelligent Channel Management (ICM)

When you enable ICM, additional controls display below:

Show Unassigned Channels. Enable Show Unassigned Channels when you want to show channels that are unassigned in addition to those in the pool for selection when creating or copying an event. If you only want to select channels in the pool, disable this control.

ICM Channel Selection Mode. Select *Round Robin* | *Random*.

Round Robin—Selects the first channel of the first (or only) server, then the first channel of the next server, until the first channel of each server is used, then uses the second channel of each server used, incrementing by server and then by channel.

Random—Both server and channel selection is randomly selected.

Click Save to update these settings and close the dialog.

Disabling Intelligent Channel Management

To disable ICM, deselect Enable Intelligent Channel Management and click Save.

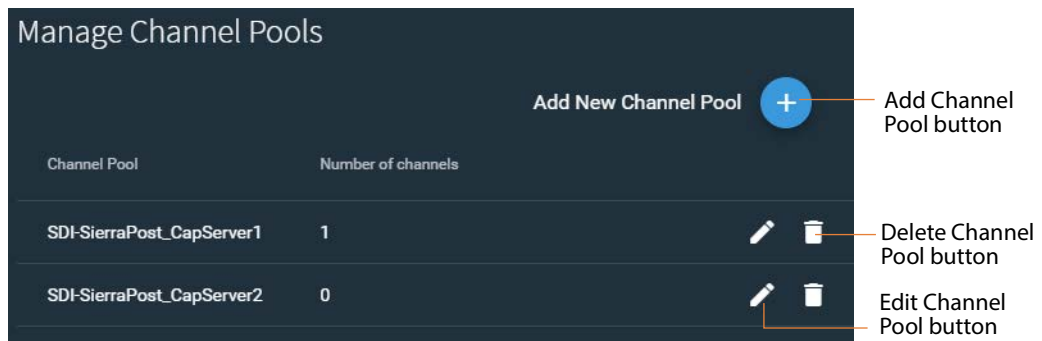
Managing Channel Pools





When you have Intelligent Channel Management (ICM) enabled ([Enabling](#) | [Disabling ICM](#)), you can organize your channels into pools, for convenient filtering of channels by operators and reducing schedule creation effort.

To manage your channel pools, click Live Schedule Pro's More  menu:






Select Manage Channel Pools (this entry doesn't display if you haven't enabled ICM) to display the Manage Channel Pools panel—shown here with a couple of pools added:



Channel Pool	Number of channels	
SDI-SierraPost_CapServer1	1	 
SDI-SierraPost_CapServer2	0	 

Annotations:

- Add New Channel Pool  Add Channel Pool button
-  Delete Channel Pool button
-  Edit Channel Pool button

Use this dialog to add, edit, and delete pools as needed.

Creating | Updating a Channel Pool

To create a new channel pool, click the blue Plus icon in the upper right corner of the dialog. To update an existing pool, click the Edit icon on the target pool.

Live Schedule Pro displays the Manage Channels Pools dialog:

Create Channel Pool

Name
Eng_Live_Channels

Available Channels

- Force label validation
- Jobs for Scheduler
- NDI tests
- NDI tests - TIFO
- Primary, secondary, copy
- Quick Variables

Channel Pool's channels

- Affinity test
- ENG-LIVE-3 SDI1
- ENG-LIVE-3 SDI2
- IP source

Cancel Save

In the Name field, provide the channel pool a practical name.

Now, drag and drop channels from the Available Channels list into the Channel Pool's Channels list, organizing it with the set of channels you want in this pool. Click Save to update Live Schedule Pro with this channel pool.

Deleting a Channel Pool

To delete an existing channel pool, click the Delete icon on the target pool. Deleting a pool doesn't delete channels, just the collection of channels.

