HAIVISION

KB Encoder/Transcoder 5.9
User's Guide

HVS-ID-UG-KB-5.9

Edition Notice

About Haivision

Founded in 2004, Haivision is now a market leader in enterprise video and video streaming technologies. We help the world's top organizations communicate, collaborate and educate. Recognized as one of the most influential companies in video by Streaming Media and one of the fastest growing companies by Deloitte's Technology Fast 500, organizations big and small rely on Haivision solutions to deliver video. Headquartered in Montreal, Canada, and Chicago, USA, we support our global customers with regional offices located throughout the United States, Europe, Asia and South America.

Trademarks

Disclaimer

Contents

About This Document

Conventions

The following conventions are used to help clarify the content.

Typographic Conventions and Elements

Italics	Used for the introduction of new terminology, for words being used in a different context, and for placeholder or variable text.
bold	Used for strong emphasis and items that you click, such as buttons.
`Monospaced`	Used for code examples, command names, options, responses, error messages, and to indicate text that you enter.
>	In addition to a math symbol, it is used to indicate a submenu. For instance, **File** > **New** where you would select the New option from the File menu.
…	Indicates that text is being omitted for brevity.

Action Alerts

The following alerts are used to advise and counsel that special actions should be taken.

> ✅ **Tip**
>
> Indicates highlights, suggestions, or helpful hints.

> ⚠️ **Note**
>
> Indicates a note containing special instructions or information that may apply only in special cases.

> ⓘ **Important**
>
> Indicates an emphasized note. It provides information that you should be particularly aware of in order to complete a task and that should not be disregarded. This alert is typically used to prevent loss of data.

> ⚠️ **Caution**
>
> Indicates a potentially hazardous situation which, if not avoided, may result in damage to data or equipment. It may also be used to alert against unsafe practices.

> ⚠️ **Warning**
>
> Indicates a potentially hazardous situation that may result in physical harm to the user.

Obtaining Documentation

This document was generated from the Haivision InfoCenter. To ensure you are reading the most up-to-date version of this content, access the documentation online at **https://doc.haivision.com**. You may generate a PDF at any time of the current content. See the footer of the page for the date it was generated.

Getting Service Support

For more information regarding service programs, training courses, or for assistance with your support requirements, contact Haivision Technical Support using our Support Portal at: **https://support.haivision.com**.

Getting Started

This section describes how to access and navigate the KB web interface.

Topics Discussed

- Logging into the Interface
- Logging out of the Interface

Logging into the Interface

> ⚠ **Caution**
>
> For security purposes, Haivision strongly advises you to change the default passwords during initial configuration.

To access the interface:

1. Enter the appropriate URL in your browser for the encoder/transcoder. For instance, `https://<ipaddress>` or `https://<hostname>`

   Where:

   - `<ipaddress>` is the address of the system where the software is installed.
   - `<hostname>` is the system's hostname.

2. If you encounter a Security Certificate warning, click **Proceed anyway** (or equivalent) to accept the certificate and continue to the Welcome screen. See **Supplying KB with a TLS/SSL Security Certificate** for more details.

   > ℹ **Note**
   >
   > Recent OS updates (particularly macOS 10.15 and iOS 13, see **https://support.apple.com/en-us/HT210176**) block access to websites with TLS certificates that have a validity window of more than 825 days. Previous versions of KB ship with a self-signed certificate with a 10-year expiration, while KB 5.5 ships with a self-signed certificate with a 2-year expiration. Therefore, new installs are not affected by this issue. However, if you have upgraded from a previous version to version 5.6 or later, you must generate a new certificate to allow access. From a computer that can access the server, use an administrator account to regenerate a new self-signed certificate. See **Renewing a Security Certificate** for details on how to do this.

3. > ℹ **Note**
   >
   > The factory-set credentials are provided in the *Important Notice* document. If the credentials have changed, check with your system administrator.
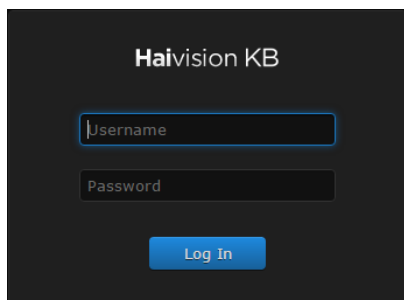
4. Click the **Log In** button.

After you successfully log in, you are taken to the Channel Control Center screen. Please see **Touring the Interface** for details of this screen, or continue to **Introducing the Interface**.

Related Topics

- **Introducing the Interface**
- **Channel Control Center Screen**
- **Logging out of the Interface**
- **Managing Users**

Logging out of the Interface

To log out of the interface:

1. When logged into the interface, click the **Log Out** link at the top right corner of any screen.
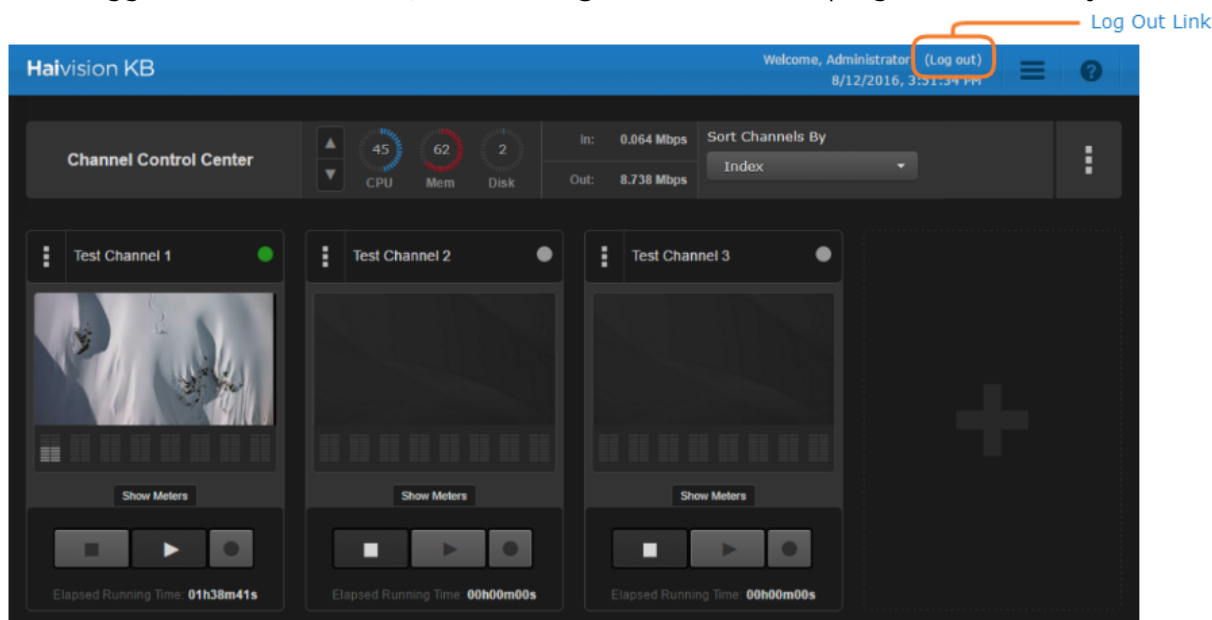
After you click the **Log Out** link, the Welcome screen re-appears.

Related Topics

- **Logging into the Interface**

Touring the Interface

After logging in, the Channel Control Center is displayed. By clicking on the ☰ icon, you can access the following screens:

- **Channel Control Center**
- **Event Schedule**
- **Recordings**
- **Administration**
- **About KB**

The following content provides a tour of each of these screens.

Topics Discussed

- **Introducing the Interface**
    - **Title Bar**
    - **Common Screen Elements**
    - **Status Indicators**
    - **Website Notifications**
- **Channel Control Center Screen**
    - **Channel Window**
    - **Channel Details Screens**
        - **Channel Details: Channel Configuration Screen**
        - **Channel Details: Channel Status Screen**
        - **Channel Details: Channel Event Schedule Screen**
        - **Channel Details: Notification Log Screen**
    - **Dashboard or System Status Bar**
- **Event Schedule Screen**
- **Recordings Screen**
- **Administration Screen**
- **About Haivision KB Screen**
- **Set Device Label**
- **Reboot/Shutdown Screen**

Introducing the Interface

The interface is an intuitive graphical user interface that puts all KB encoder tasks at your fingertips. With a click of a button, you switch easily between creating channels, scheduling events, managing recordings, and administering the system. The interface groups management tasks into the following screens: **Channel Control Center**, **Event Schedule**, and **Administration**. These screens use a consistent layout with common screen elements to simplify your experience. The following sections describe these common elements.
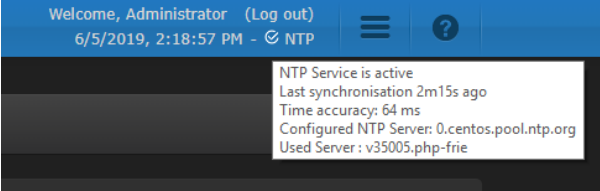
> ❗ **Important**
>
> Only use standard alphanumeric characters, with no special characters other than the underscore, in any data entry field in the KB Encoder/Transcoder.
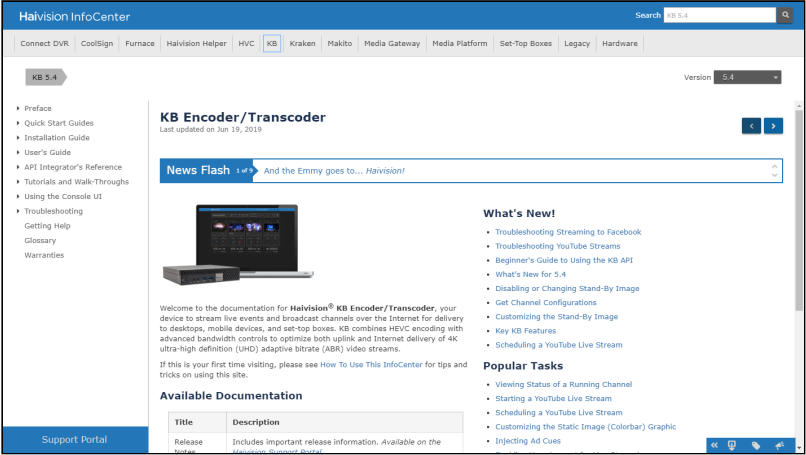
- **Title Bar**
- **Common Screen Elements**
- **Status Indicators**
- **Website Notifications**

Title Bar

The title bar is available from every screen and displays current information, alerts, as well as access to the main menu and help system.

Icon	Name	Description
—	Product Logo	Clicking on the logo returns you to the Channel Control Center.
—	Password Status	Typically blank. However, if the default passwords have not been changed, "(Unsecure Passwords)" appears next to the KB logo.
—	License Status	Typically blank. However, if the current system is not licensed, "(Unlicensed)" appears next to the KB logo.
—	Current User	Indicates the current logged-in user.
—	Log Out Link	Clicking this link logs you out of the interface. See **Logging out of the Interface** for more details.
—	Date/Time	The current time on the KB Encoder/Transcoder adjusted to the timezone of your browser.
⊘ or ⊘	NTP Status	When checked, indicates that the KB device time is synchronized via NTP. Hovering over the NTP Status area pops open a tool tip that provides information on the current NTP server, the last synchronization, and the time accuracy.
≡	Menu Button	Clicking the icon provides access to the KB screens/pages: **Channel Control Center**, **Event Schedule**, **Recordings** , **Administration**, **About KB Encoder**, and **Reboot/Shutdown Screen**.
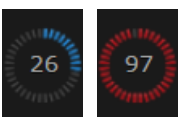
Icon	Name	Description
❓	Help Button	Clicking the icon opens the Haivision InfoCenter to access the latest KB documentation. Requires access to the Internet.

Related Topics

- **Channel Control Center Screen**
- **Event Schedule Screen**
- **Recordings Screen**
- **Administration Screen**
- **Common Screen Elements**

Common Screen Elements

Common screen elements within the interface include the following:

Name	Description	Icon Used in Text	Screenshot Examples
Options menu	The title bar contains an options menu icon. Clicking on it opens a menu of the main screens of the interface.	☰	
More Options menu icon	The Channel Control Center screen contain a more options menu icon. Clicking on it opens a menu of secondary functions not directly available via buttons on the interface.	⋮	
Performance meter icon	A circular meter indicates the percent usage of certain statistics of the system. The actual percentage is displayed as text within the circle, while the circle gives a quick glance view of the percentage. The color of the circle also changes from blue to red after the percentage crosses a warning threshold.	N/A	

Related Topics

- **Channel Control Center Screen**

Status Indicators

Status indicator lights are available throughout the interface to give you an at-a-glance indication of the current status.
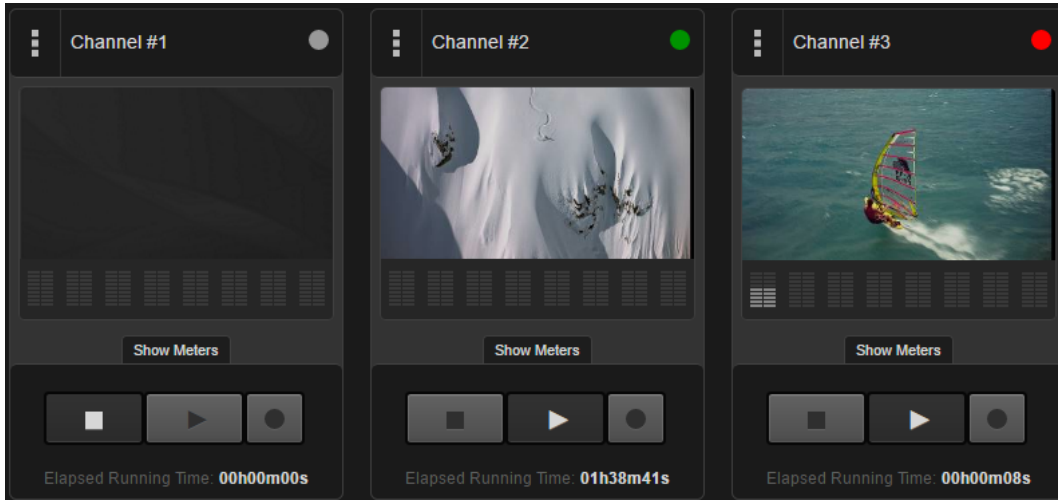
Status	Description
⚪	Indicates the session has not yet been initiated.
🟢	Indicates normal operation.
🟠	Indicates there may be a problem. Hover your cursor over the indicator light to get specifics regarding the status.
🔴	Indicates there is a problem and that an action may be required. Hover your cursor over the indicator light to get specifics regarding the status.

Related Topics

- Channel Control Center Screen
- Channel Details: Channel Status Screen

Website Notifications

Website notifications are shown in the banner when various runtime alerts are triggered on the system, including:

- Starting/Stopping a channel
- Starting/Stopping a recording
- Scheduling an event
- Editing an event
- An error occurs

The notifications include an icon to indicate the severity of the issue:

Icon	Description
✔	Informational

Icon	Description
!	Warning
✖	Error

The website notification automatically disappear after 5 seconds. You may close the popup immediately by clicking the **X** button. If a popup occurs prior to the previous one disappearing, the popups are stacked.
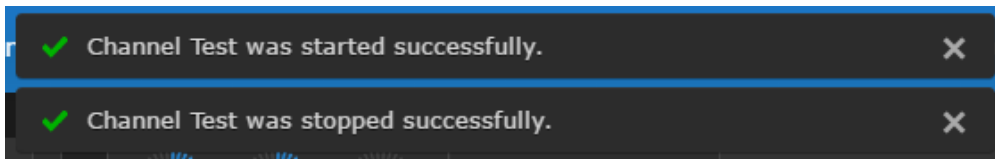
See **Configuring Alerts** for more details about enabling/disabling website notifications.

Related Topics

- **Channel Details: Notification Log Screen**
- **Configuring Alerts**

Channel Control Center Screen

The Channel Control Center allows you to manage video encode sessions. As shown in the following figure, it contains:

- **Dashboard or System Status Bar**—displays overall system performance
- **Channel Windows**—list of all currently configured channels

The Channel Control Center also allows you access to the channel details screens, which are described in **Channel Details Screens**. See **Accessing Channel Details** for how to get to the channel details screens.
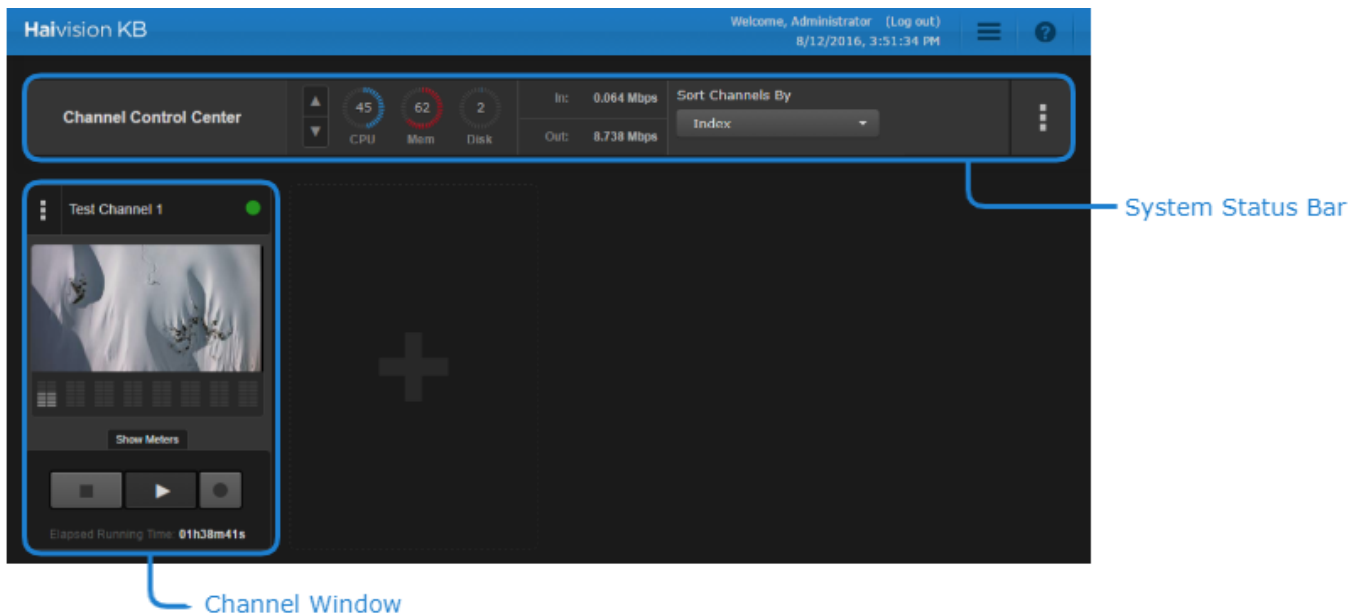
Related Topics

- **Dashboard or System Status Bar**
- **Channel Window**
- **Channel Details Screens**

Channel Window

The channel windows in the Channel Control Center allow you to preview channel content, control the channel, and edit the channel options.

Icon	Name	Description
⋮	Options Menu	Clicking the icon opens a menu to the following options: • **Channel Details** • **Schedule Event** • **Export Channel** • **Duplicate Channel** • **Delete Channel** • View > Source Info—When enabled, overlays the name of the input source in the channel preview
🟢 (color varies)	Channel Status	Color of the icon indicates the channel status. See **Status Indicators** for details.
—	Channel Preview	Preview video of the channel. Double clicking on the preview takes you to the **Channel Details Screens**.
—	Volume Meters	Eight pairs of graphical audio volume meters.

Icon	Name	Description
—	Show Meters	Clicking the text shows channel statistics meters. • CPU % utilization • Virtual memory usage • Memory usage
■, ▶, ●	Channel Controls	Controls to: • ■ **Stop a channel** • ▶ **Start a channel** • ● **Start a recording** and **Stop a recording** ⚠ **Note** Channels created by Haivision Connect cannot be controlled using the KB user interface. Therefore, the channel controls are not shown for those channels.
—	Elapsed Running Time	Amount of time channel has been running.

Related Topics

- **Status Indicators**
- **Channel Control Center Screen**

Channel Details Screens

The channel details screens encompass four different screens as follows:

- **Channel Configuration**—various options for advanced configuration of the channel
- **Channel Status**—detailed channel status for when the channel is running
- **Channel Event Schedule**—list of events scheduled for the channel
- **Notification Log**—list of alerts for the channel

At the top of each of these screens is a toolbar for switching between these screens and for controlling the channel:
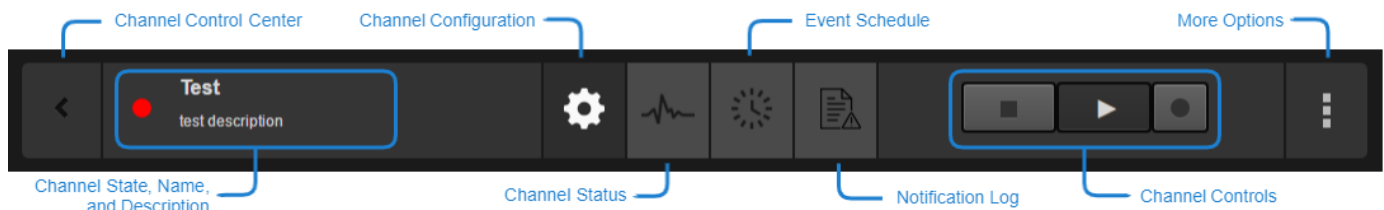
The toolbar consists of the following:

Icon	Name	Description/Links
◀	—	Clicking icon returns you to the Channel Control Center
● 1	Channel state	See **Status Indicators** for details.
—	Channel name and description	Double clicking the text opens a window to edit the name and description.

Icon	Name	Description/Links
⚙	Channel Configuration	Clicking icon takes you to the Channel Configuration Screen.
⎍	Channel Status	Clicking icon takes you to the Channel Status Screen.
☼	Event Schedule	Clicking icon takes you to the Event Schedule Screen.
📄	Notification Log	Clicking icon takes you to the Notification Log Screen.
■, ▶, ●	Channel Controls	Controls to: • ■ **Stop a Channel** • ▶ **Start a Channel** • ● and **Stop Recording** ⚠ **Note** Channels created by Haivision Connect cannot be controlled using the KB user interface. Therefore, the channel controls are not shown for those channels.
⋮	More options	Clicking the icon opens a menu to the following options: • **Export Configuration** • Edit Name/Description

[1] Color of icon depends on current channel state.

Related Topics

- **Channel Details: Channel Configuration Screen**
- **Channel Details: Channel Status Screen**
- **Channel Details: Channel Event Schedule Screen**
- **Channel Details: Notification Log Screen**

Channel Details: Channel Configuration Screen

The Channel Configuration screen provides advanced configuration options that aren't available in the Create Channel Wizard. It also allows you to edit the channel settings after the channel was created.

To access the channel's Channel Configuration screen:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Click ⋮ next to the channel you wish to configure and click **Channel Details**, or double-click the channel preview of the channel you wish to configure.
3. Click the ⚙ icon.

As shown in the figure below, the Channel Configuration screen is split into three sections:

- Source—Includes a set of input source parameters
- Encoders—Includes sets of video and audio encoder parameters
- Destination—Includes sets of stream outputs and recordings outputs parameters

The following buttons are also available on the Channel Configuration screen:

Icon	Name	Description/Links
—	Apply button	After changing any settings using the following buttons, the Apply button is enabled and must be clicked to save any new settings.
＋	Add button	Clicking the button adds an additional encoder or destination. See Adding Parameter Sets for details. The Add button is not available for input source.
⚙	Edit button	After clicking any of the parameter sets, the Edit button within the section is enabled. Clicking it opens the corresponding Edit Parameters window. See Editing Parameter Sets for details.
▨	Duplicate button	After clicking on one of the encoder or destination parameter sets, the Duplicate button within the corresponding section is enabled. Clicking it duplicates the selected parameter set. See Duplicating Parameter Sets for details. The Copy button is not available for the input parameter set.
🗑	Delete button	After clicking on one of the encoder or destination parameter sets, the Delete button within the corresponding section is enabled. Clicking it deletes the selected parameter set from the channel. See Deleting Parameter Sets for details. The Delete button is not available for the input parameter set.

Related Topics

- **Using the Channel Configuration Screen**

Channel Details: Channel Status Screen

To access the channel's Channel Status screen:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Click ⋮ next to the channel you wish to see the detailed status of and click **Channel Details**, or double-click the channel preview of the channel you wish to see the status of.
3. Click the ∿ icon. Ensure the channel is running to see the detailed status information. Else, the Channel Status screen is blank.

As shown in the figure below, when the channel is running, the Channel Status screen is split into four collapsible sections:

- Channel Status Information — Includes channel performance metrics.
- Input — Includes input source details, such as an input video preview, audio channel information, audio gain adjustment buttons.
- Outputs — Includes information about each output stream.
- Recordings — Include disk space statistics and active recording file information.
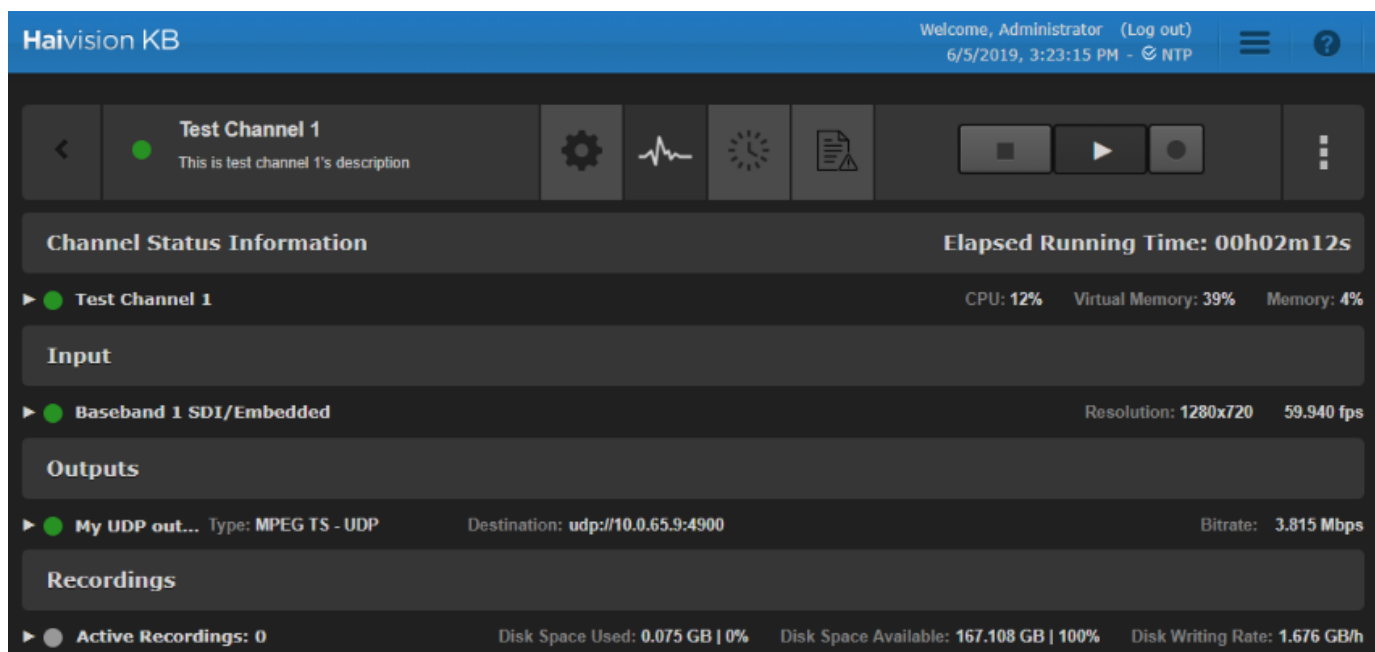
See **Viewing Status of a Running Channel** for how to use the Channel Status screen and more details about each of the four sections.

Related Topics

- **Channel Control Center Screen**
- **Viewing Status of a Running Channel**

Channel Details: Channel Event Schedule Screen

To access the Channel Event Schedule screen:

1. Click the ☰ icon, and click **Channel Control Center**.

2. Click ⋮ next to the channel you wish to see the event schedule and click **Channel Details**, or double-click the channel preview of the channel you wish to see the event schedule.
3. Click the ⟳ icon.

As shown in the figure below, the Channel Event Schedule screen lists existing events assigned to the selected channel.
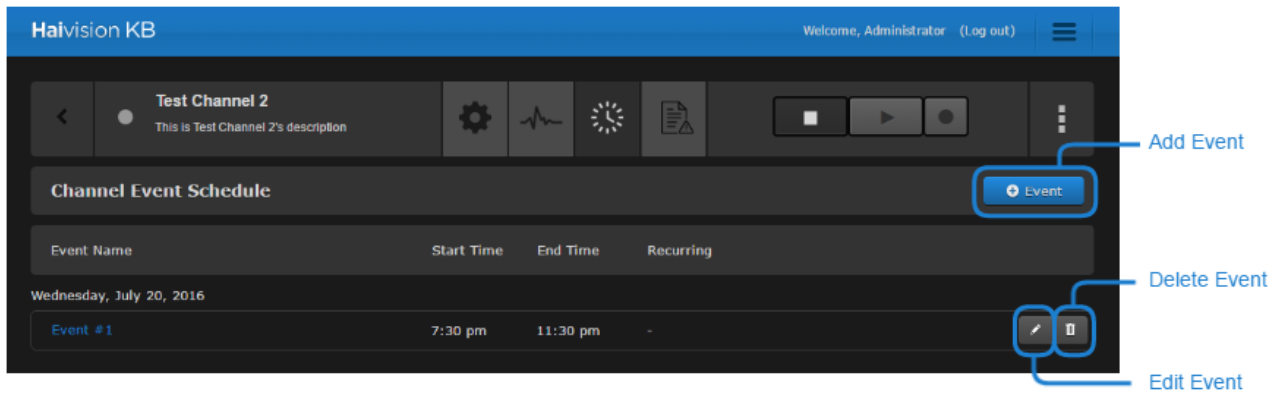
The following buttons are also available on the Channel Configuration screen:

Icon	Name	Description/Links
—	Add Event	Clicking this button opens the Schedule Event window to add an event to the corresponding channel. See **Creating an Event** for details.
✏	Edit Event	Clicking this button opens the Schedule Event window for editing the corresponding event. See **Editing a Scheduled Event** for details.
🗑	Delete Event	Clicking this button deletes the corresponding event. See **Deleting a Scheduled Event** for details.

See **Scheduling Events** for more details on scheduling events.

Related Topics

• **Scheduling Events**

Channel Details: Notification Log Screen

To access the channel's Notification Log screen:

1. Click the ☰ icon, and select **Channel Control Center**.
2. Click ⋮ next to the channel you wish to see the notification log and select **Channel Details**, or double-click the channel preview of the channel you wish to see the notification log.
3. Click the 📄 icon.

> ✔ **Tip**
>
> The Notification Log screen is cleared each time the channel is started.

As shown in the figure below, the Notification Log lists various messages about the channel.

If there are more than 20 messages, the following buttons appear at the bottom of the Notification Log screen,
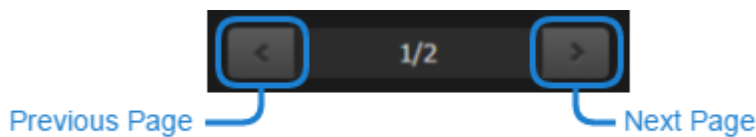
Icon	Name	Description/Links
<	Previous Page	Clicking this button takes you to the previous page of notifications.
>	Next Page	Clicking this button takes you to the next page of notifications.

The messages supplied on the Notification Log screen are also available in the application logs. See **Accessing Reports (Logs)** for details on downloading the application logs. A list of all possible signals is also available in **Channel Signals** in the *API Integrator's Reference*.

Related Topics

- **Website Notifications**
- **Configuring Alerts**
- **Accessing Reports (Logs)**
- **Channel Signals**

Dashboard or System Status Bar

The dashboard or system status bar in the Channel Control Center displays overall system performance metrics.

Icon	Name	Description
▼	Show Channel Meters	Clicking the down arrow shows all channel meters.
▲	Hide Channel Meters	Clicking the up arrow hides all channel meters.
—	Overall System Meters	Various statistics of the system: • CPU % utilization • Memory usage • Disk usage • HEVC encoder usage • Input/output network bit rates
—	Sort Channel	Click the dropdown to select how the channels are sorted in the Channel Control Center: • Index — Channels are sorted by their UUID. • Name — Channels are sorted alphabetical by channel name. • State — Channels are sorted by their state.
⋮	More Options	Clicking the icon opens a menu to the following options: • **Add Channel** • **Export Channel(s)** • **Import Channel(s)** • **Delete Channel(s)**

Related Topics

- **Channel Control Center Screen**
- **Common Screen Elements**

Event Schedule Screen

> ℹ **Important**
>
> In the past, each scheduled event counted against the number of channels you have licensed. For instance, if you had four (4) channel licenses and scheduled five (5) events to run at the same time, the last one would fail as it exceeded the license limit. Now, licenses are no longer reserved for *idle* events and are not included against the license limit.
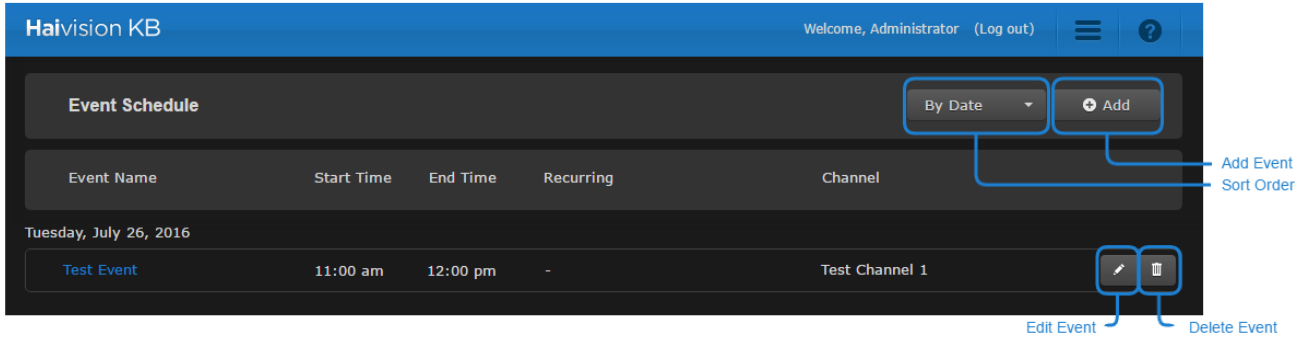
Icon	Name	Description
▼	Sort Order	Clicking the icon allows you to sort events by date or channel name.
✚	Add Event	Clicking the **Add** button allows you to add an event. See **Creating an Event** for details.
✏	Edit Event	Clicking the icon allows you to edit the corresponding event. You may also click on the Event Name to edit the event. See **Editing a Scheduled Event** for details.
🗑	Delete Event	Clicking the icon deletes the corresponding event. See **Deleting a Scheduled Event** for details.

Related Topics

- **Scheduling Events**

Recordings Screen

> ⓘ **Note**
>
> While any user can download recordings, you must be logged in as haioperator or haiadmin to delete those files.

As shown in the following image, the screen consists of:

- A status bar with:
  - **All** – checkbox that allows you to quickly select all items listed.
  - **Actions** – dropdown menu that provides the options to export, download, or delete the items selected.
  - Free space/Capacity – showing the current available space and drive size, as well as a visual gauge indicating the space available.
- A KB Drive navigation bar that if you drill down into a folder, includes:
  - Back button (<) that returns you to the KB Drive directory.
  - Breadcrumbs that help identify the folder currently displayed.
- The remainder of the screen is a listing all recordings showing the channel, folder/file name, recording duration, file size, and recording date information for each. The recordings are listed as individual files (for example, a single recording for a channel) or as a folder of multiple files (for example, multiple recordings of the same channel).

	Clicking the folder icon opens the folder and lists the files within it.
	Clicking the up arrow icon returns you to the KB Drive directory.
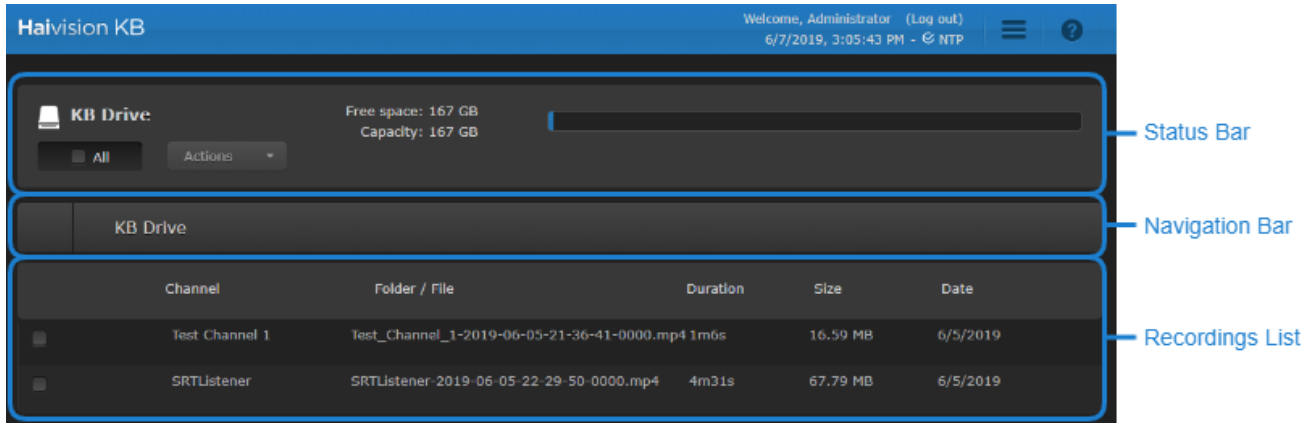
Related Topics

- **Working with Recordings**
- **Downloading Recordings**
- **Exporting Recordings**
- **Deleting Recordings**

Administration Screen

The Administration screen allows you to perform all admin functions of the system:

- Viewing system activity
- Viewing reports/logs
- Configuring alerts
- Managing disk space
- Licensing
- Configuring network settings
- Configuring the WiFi Access Point
- Changing the default stand-by image
- Configuring notifications
- Configuring SSL Certificates
- Updating KB software
- Managing user accounts

> ℹ️ **Note**
>
> You must be logged into the `haiadmin` account to access the Administration screen.

As shown in the following figure, each administration screen is available from the left sidebar and is grouped under Dashboards, Configuration, and User Administration headings. When clicking one of the screen listings, the content is displayed in the right portion (or pane) of the Administration screen.

Administration Pages   Page Content
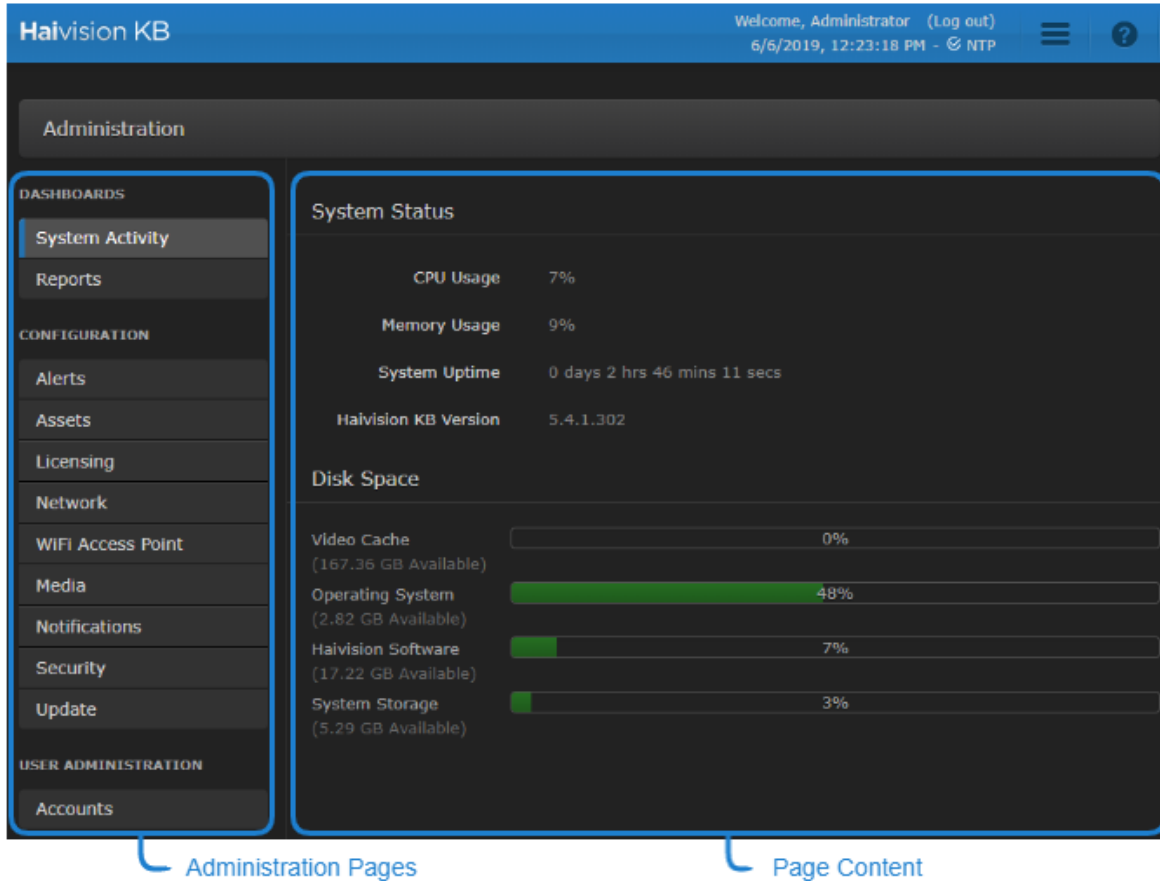
See **Administering the KB Encoder** for details about each available administration task.

Related Topics

- **Administering the KB Encoder**

About Haivision KB Screen

The About KB Encoder screen shows you the current Haivision KB encoder version/build number and copyright information.

To access the About Haivision KB screen:

1. Click the ≡ icon and click **About Haivision KB** from the dropdown menu.
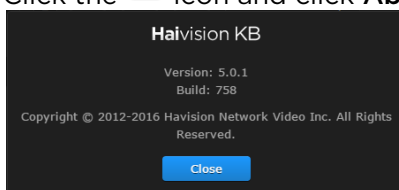
2. Click **Close** to return to the previous screen you were on prior to step 1.

> ✅ **Tip**
>
> When requesting assistance, provide the version and build number displayed on this screen to the support representative.

Related Topics

- **Updating the KB Encoder**

Set Device Label

The Set Device label screen allows the operator and administrator accounts to add a custom string to your browser tab and to the title bar.

To use the Set Device Label screen:

1. Click the ☰ icon and click **Set Device Label** from the dropdown menu.
2. Enter the desired device label in the Device Label textbox.
3. Click the **Set Label** button.

Your browser tab's title and the title bar are updated as shown below:
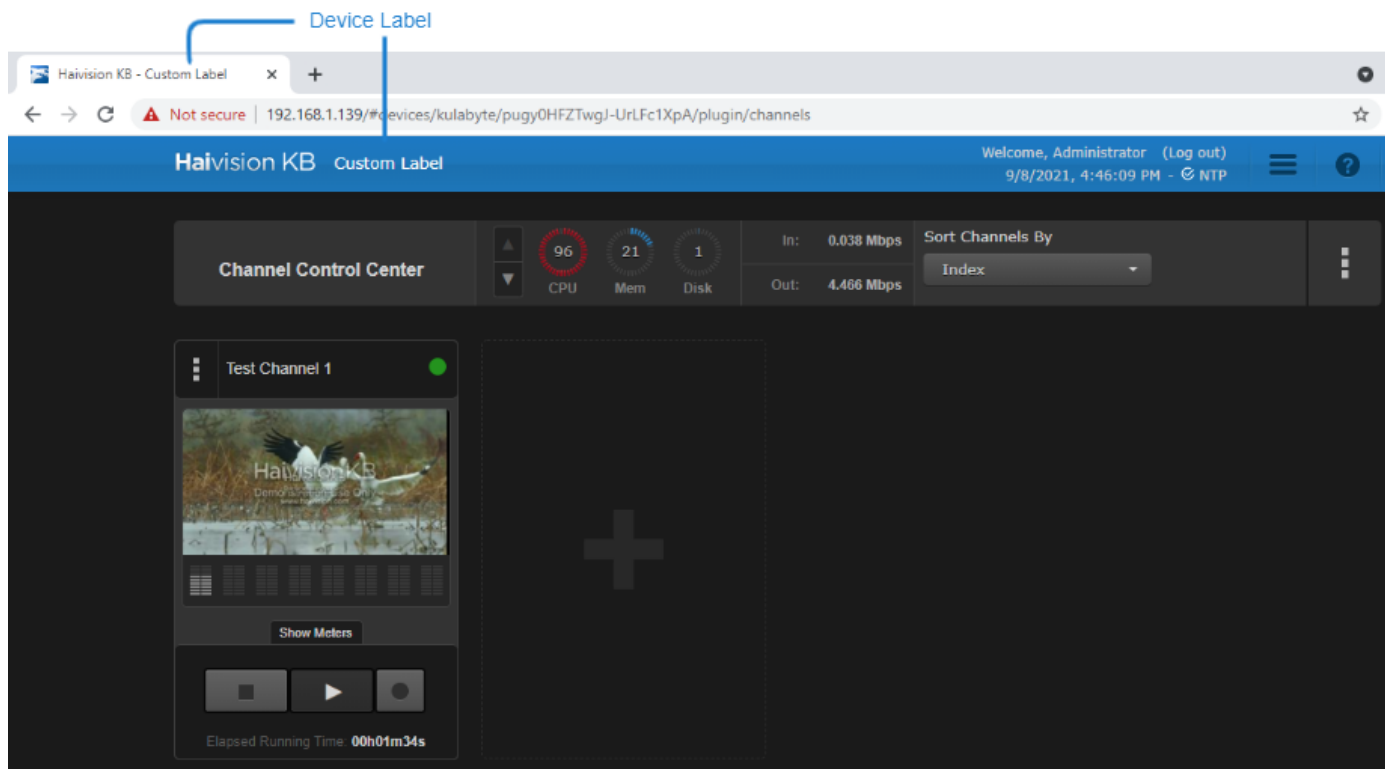
Reboot/Shutdown Screen

The Reboot/Shutdown screen allows the operator and administrator accounts to reboot or shutdown your Haivision KB encoder.

To use the Reboot/Shutdown screen:

1. Click the ☰ icon and click **Reboot/Shutdown** from the dropdown menu.
2. Click the **Reboot** or **Shutdown** button. Or click the **Cancel** button to return to the previous screen.

The selected action is immediately performed. If you select reboot, wait a couple minutes for the reboot to complete and refresh your browser.

Using the KB Encoder

> **ℹ Note**
>
> Before proceeding, make sure that the system is set up correctly and the network connection is established. Contact your system administrator for assistance with network configuration.

Topics Discussed

- **Working with Channels**
  - **Creating a Channel**
  - **Starting a Channel**
  - **Accessing Channel Details**
  - **Using the Channel Configuration Screen**
  - **Viewing Status of a Running Channel**
  - **Duplicating a Channel**
  - **Importing/Exporting a Channel**
  - **Stopping a Channel**
  - **Forcing a Channel to Stop**
  - **Deleting a Channel**
- **Scheduling Events**
  - **Creating an Event**
  - **Editing a Scheduled Event**
  - **Changing End Time on a Running Event**
  - **Deleting a Scheduled Event**
  - **Scheduling Recurring Events**
  - **Viewing Scheduled Events**
- **Working with Recordings**
  - **Start Recording**
  - **Stop Recording**
  - **Exporting Recordings**
  - **Downloading Recordings**
  - **Deleting Recordings**

Working with Channels

After logging in, the initial view is the Channel Control Center.
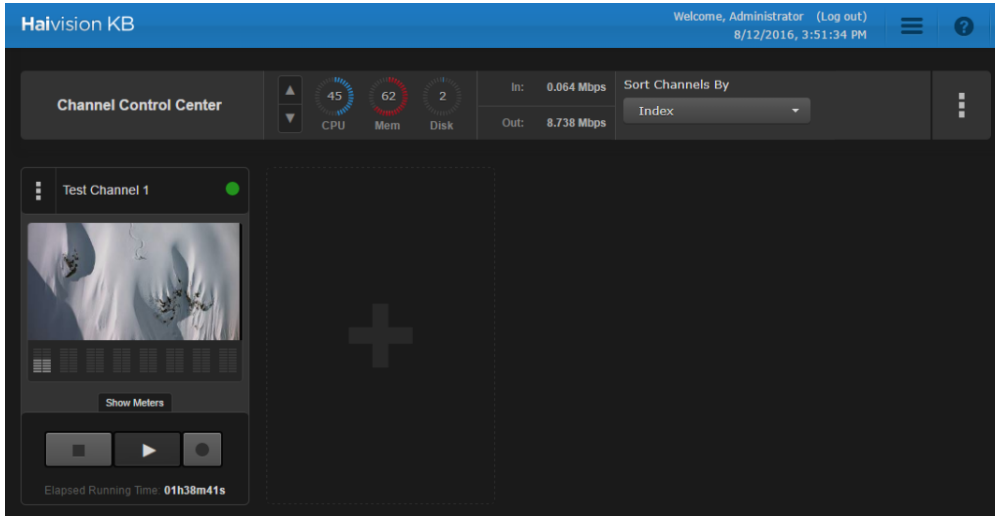
The Channel Control Center screen allows you to:

- Monitor a video output stream.
- Configure the stream settings.
- Perform archival tasks.

To access the Channel Control Center screen while on one of the other screens:

- Click the ≡ icon and click **Channel Control Center**, or
- Click the **Haivision** logo in the banner at the top of the screen.

Related Topics

- **Channel Control Center Screen**

Creating a Channel

After the KB Encoder/Transcoder is installed and a connection established, you need to create a channel for streaming video output.

To create a channel:

1. Click the ≡ icon and select **Channel Control Center.**
2. Click the ✚ image, or click the ⋮ icon and click **Add Channel**.
3. The Create Channel wizard appears which walks you through creating the channel. See the links in the following table for details of each step of the wizard.

Step	Description
1	Name and description
2	Input source type and configuration
3	Encoder template
4	Output types and configuration

4. After completing the steps in the wizard, an Information Review screen is displayed that summarizes your settings. Click **Done** to finish creating the channel.

> **ⓘ Note**
>
> The Create Channel wizard does not include all available options for channel configuration. After you have created the channel using the wizard, you may edit it to configure any advanced parameters. See **Using the Channel Configuration Screen** for more details.

Related Topics

- **Channel Control Center Screen**
- **Using the Channel Configuration Screen**

Step 1 Name and Description

Creating a Channel	
Step	**Description**
1	Name and Description
2	**Input Configuration**
3	**Encoder**
4	**Output Configuration**

Step 1 of the Create Channel Wizard allows you to name and describe the new channel.
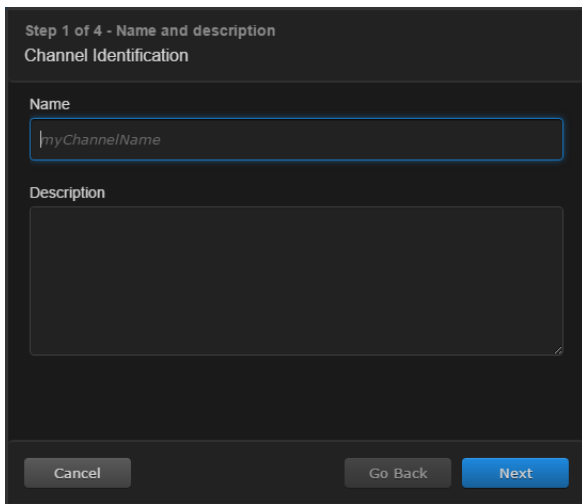
To name the channel and provide a description:

1. Enter a channel name in the Name field, which must be unique to existing channel names.
2. Enter a description in the Description field.
3. Click **Next** to move to **Step 2** of creating the channel.

Related Topics

- **Channel Control Center Screen**
- **Using the Channel Configuration Screen**

Step 2 Input Configuration

Creating a Channel	
Step	**Description**
1	Name and Description
2	Input Configuration
3	Encoder
4	Output Configuration

Step 2 of the Create Channel Wizard allows you to define the input source.
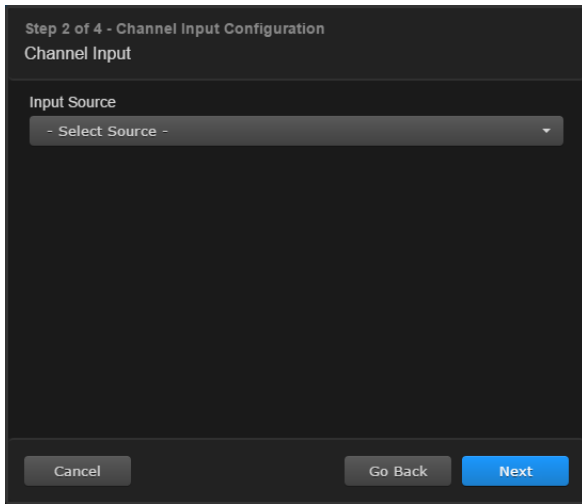
To configure the input source:

1. Select the desired Input Source from the drop-down menu.
2. After selecting the input source, various configuration parameters appear depending on the input source you chose, as described in the tables below. The availability of the Baseband options depends on if your system includes the respective hardware.

Baseband   File Source   RTMP   MPEG TS (UDP, RTP, and SRT)

> 🛈 **Note**
>
> The title of the available baseband option depends on the installed baseband card.

Parameter	Description
Video Source	(Decklink only) Capture card video source.
Audio Source	(Decklink only) Capture card audio source.
Video Input Resolution	(Decklink only) Specify the resolution based on your video source.
Audio Input(s)	Menu to specify the audio input channels and languages. See Configuring Audio Input Channels for details on using this menu.

> **ℹ Note**
>
> If your DeckLink card is not listed, it is possible that it was not detected during a recent install/update. Reboot your system twice to force the card's detection.

Baseband   **File Source**   **RTMP**   **MPEG TS (UDP, RTP, and SRT)**

Parameter	Description
File Source Folder	If MP4 files have been uploaded to KB, select whether to use a Recording or an upload as a file source.
Recording Channel	Select the name of the recorded channel.
Recording Folder	Select the date/time folder.
Recording File	Select the individual file to use as the file source. After a file is selected, the recording timestamp and duration is shown below.
Audio Language	Label for the audio language in the file source/recording. ⚠ **Note** Multiple audio/language tracks are not supported for file sources.

Baseband   **File Source**   **RTMP**   **MPEG TS (UDP, RTP, and SRT)**

> **ℹ Note**
>
> Only progressive RTMP input streams are supported.

Parameter	Description
Server	Address of the input device, such as rtmp://192.168.178.100/live
RTMP Stream Name	Name of stream.
Audio Language	Drop-down list to select the language.

Baseband   **File Source**   **RTMP**   **MPEG TS (UDP, RTP, and SRT)**

Parameter	Description
Address[1]	Address of the input device, such as srt://127.0.0.1.

Parameter	Description
Source Address[2]	**ⓘ Note** IGMPv3 Source Specific Multicast reception allows input streams to join a multicast group and filter the input streams based on a specific source IP address. Only streams originating from the specified source IP are forwarded to KB, which allows KB to quickly and easily select an input stream in environments with many sources sharing a common multicast IP. See IETF RFC 3376 for more details.
Port	Network protocol port number.
Audio Configuration	Menu to specify the audio input channels and languages. See Configuring Audio Input Channels for details on using this menu.
Passphrase[3]	The password phrase for encryption.

[1] Not available in SRT Listener mode.
[2] UDP and RTP only.
[3] SRT modes only.

3. Click **Next** to move to Step 3 of creating the channel.

Related Topics

- Channel Control Center Screen
- Using the Channel Configuration Screen
- Input Parameters
- Configuring Audio Input Channels

Step 3 Encoder

Creating a Channel	
Step	**Description**
1	Name and Description
2	Input Configuration
3	Encoder
4	Output Configuration

Step 3 of the Create Channel Wizard allows you to define the encoder.
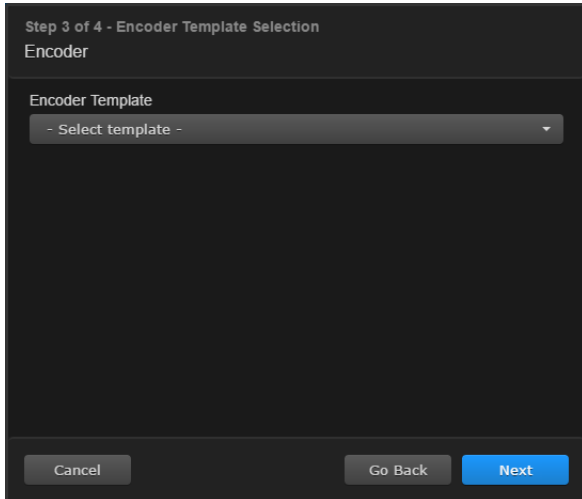
To choose an encoder template:

1.
> **ⓘ Note**
>
> The 4K option combines all the four SDI inputs into one stream. If choosing the 4K template, your source signal must be split into four 1080 inputs (for example, as from a converter or camera).

> **❗ Important**
>
> The default level is not supported for KB 4K and KB Max devices using the dedicated HEVC encoder when using on MacOS and iOS (e.g., MacBook, iPad, or iPhone). To optimize for MacOS and iOS devices, manually change the level to Level_21.

2. The available video and audio bit rates for the chosen template are shown under the drop-down menu. If necessary, you can edit these after creating the channel. See **Using the Channel Configuration screen** for details.
3. Click **Next** to move to **Step 4** of creating the channel.

Related Topics

- **Channel Control Center Screen**
- **Using the Channel Configuration Screen**
- **Video Encoder Parameters**
- **Audio Encoder Parameters**

Step 4 Output Configuration

Creating a Channel	
Step	**Description**
1	**Name and Description**
2	**Input Configuration**
3	**Encoder**
4	Output Configuration

Step 4 of the Create Channel Wizard allows you to define outputs.
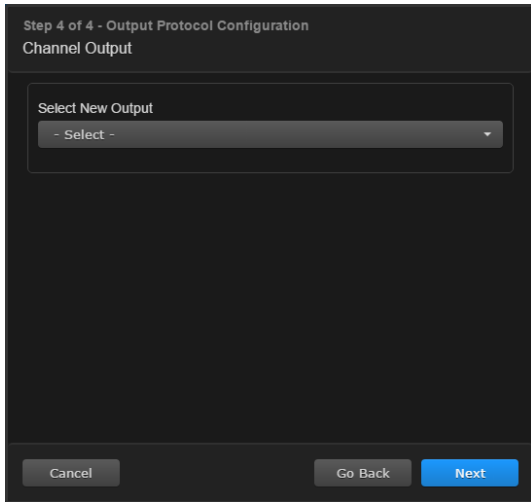
To define the channel outputs:

1. Select an output from the drop-down menu.
2. After selecting an output, various configuration parameters appear depending on the output you chose, as described in the tables below:

HLS, DASH, RTMP   MPEG TS (UDP, RTP, and SRT)

> **ℹ Note**
>
> For RTMP, only progressive output streams are supported.

Parameter	Description
Output Name	User-specified label for this output.
Protocol[4]	Select either HTTP or secure HTTP protocol.
Server	URL for the stream (also known as Publish URL). Do not include the stream name.
Stream Name Template[1]	Template for creating the stream names. For each video encoder, separate RTMP streams are created, each with a unique name. This textbox allows you to define a template for these stream names. You can use placeholders by clicking on the **Placeholders** link. When no placeholders are used, a _%index% suffix is automatically added to the stream name. **ℹ Note** Some CDNs have specific naming requirements.
Variant Playlist Name[2]	Playlist name for the adaptive bitrate on HTTP streams.

Parameter	Description
Manifest Name[3]	Name of the manifest file that identify the various output streams.
Playback URL[4]	Some CDNs use a different playback URL to view published streams versus publish URL. Enter the URL of the playlist/manifest file location, but do not include the playlist/manifest file name.
Backup Playback URL[3]	Fallback playback URL. Enter the URL of the backup playlist/manifest file location, but do not include the playlist/manifest file name.
Username	Enter the username if your CDN requires it. Otherwise, do not change this field.
Password	Enter the password if your CDN requires it. Otherwise, do not change this field.
Enable VOD[2]	ⓘ **Note** VOD events are limited to 24 hours.
VOD Playlist Name[2]	ⓘ **Note** Must be different than the Variant Playlist Name.

[1] RTMP only.
[2] HLS only.
[3] DASH only.
[4] HLS and DASH only.

HLS, DASH, RTMP   **MPEG TS (UDP, RTP, and SRT)**

Parameter	Description
Output Name	User-specified label for this output.
Address[1]	Video stream address for unicast and multicast and different protocols: UDP, RTP, and SRT.
Port	Network protocol port number.
Encryption[2]	Enables AES encryption and specifies the key length, either: None, AES-128, or AES-256.
Passphrase[2]	The password phrase for encryption. Must be at least 10 characters if an encryption mode is selected.

[1] Not available in SRT Listener mode.
[2] SRT modes only.

3. After completing the fields, click **OK** to add the output.

> ℹ️ **Note**
>
> The following default output streams are created depending on the selected output protocol:
> - RTMP—For each video encoder, an RTMP stream is created plus an additional audio-only stream. For audio the first configured language is used.
> - HLS—All video streams and all audio streams in all languages are added to the HLS output. The first audio language is the default language.
> - DASH—All video streams and all audio streams in all languages are added to the DASH output.
> - MPEG-TS—One MPEG-TS stream with the best video and best audio quality of the first configured language is added.
>
> Also, a recording with the best quality video and audio stream of the first configured language is added.
>
> If necessary, you can edit these settings after completing the Create Channel Wizard. See **Using the Channel Configuration Screen** for details.

4. To add additional outputs, click the **+Add Output** button and repeat steps 2 and 3.
5. To edit or delete any created outputs, click the ✏ and 🗑 icons next to the output, respectively.
6. Click **Next** to move to an Information Review of the Create Channel Wizard. See **step 4** of **Creating a Channel**.

> ℹ️ **Note**
>
> Only progressive RTMP input streams are supported.

Related Topics

- **Channel Control Center Screen**
- **Using the Channel Configuration Screen**
- **Stream Output Parameters**
- **Recordings Output Parameters**

Example of Creating a 4K Channel

> ⚠️ You must be using the 4K-capable appliance to be able to create a 4K channel. Check with your Haivision Sales representative.

To create a 4K channel:

1. Click the ☰ icon and click **Channel Control Center**.
2. Click the **+** icon to add a channel.
3. In Step 1 of the Create Channel Wizard, provide a name for the channel and click **Next**.

4. In Step 2, select an appropriate 4K input source from those listed for the AJA Corvid card, such as "Baseband 4K SDI QuadLink". Click **Next**.
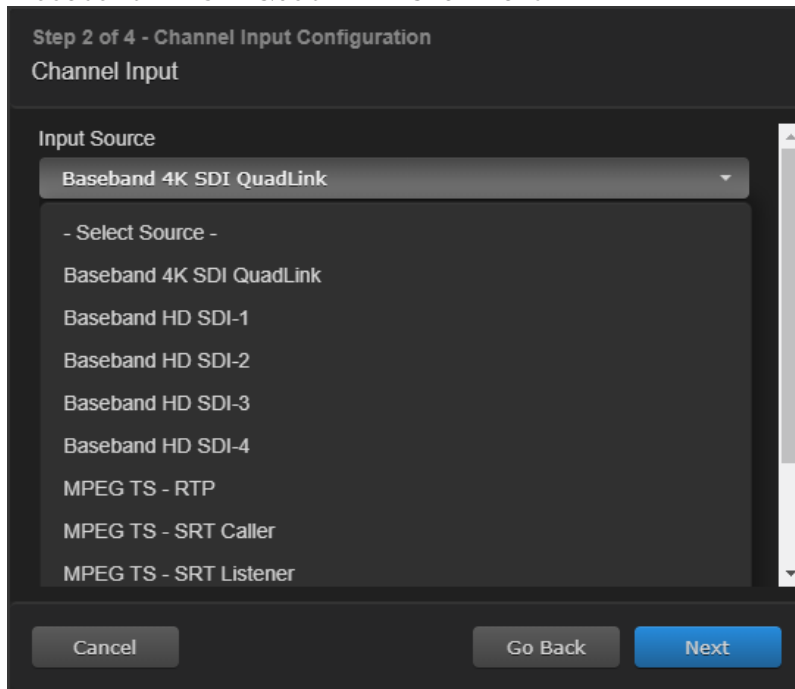
5. In Step 3, choose from the available H264 and HEVC options. For instance, "HEVC High FPS 2160 AAC 192" with a resolution of 3840x2160. Click **Next**.
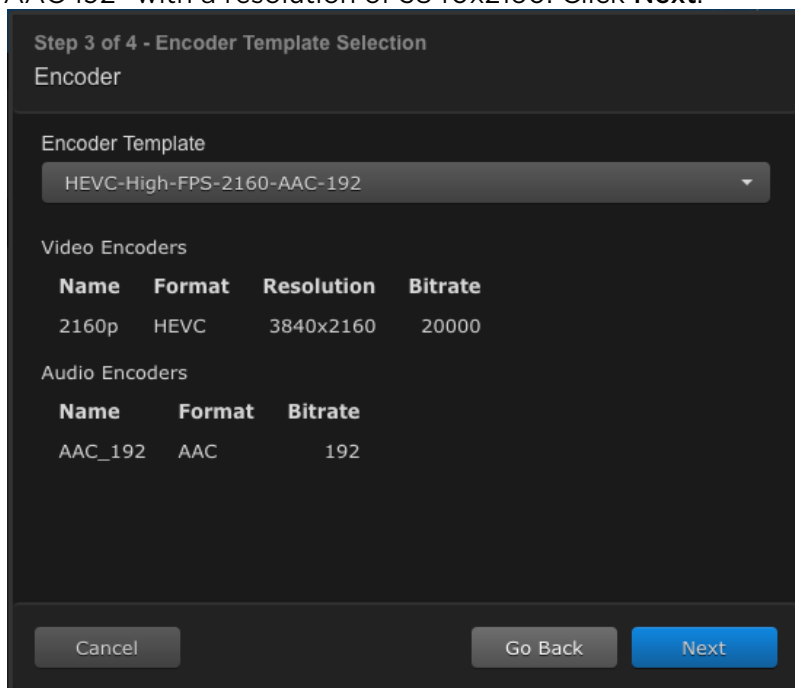
6. In Step 4, provide the Channel Output information and click **Next**.

7. Review the Information to ensure it is correct and click **Done**.
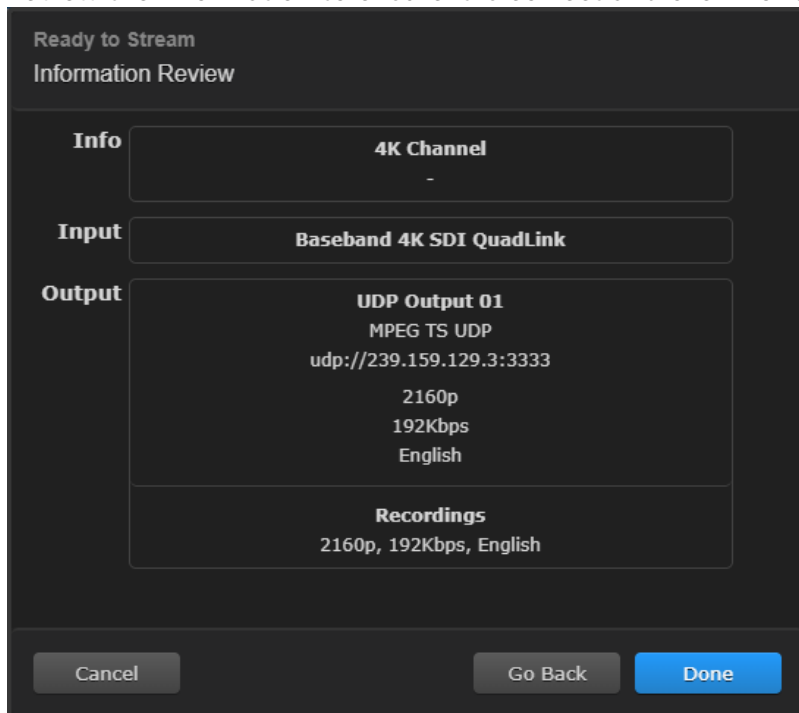
8. When the new channel appears in the Channel Control Center, click the ▶ button below it.
9. When the channel starts, the HEVC meter displays 100 in the **Dashboard or System Status Bar**.
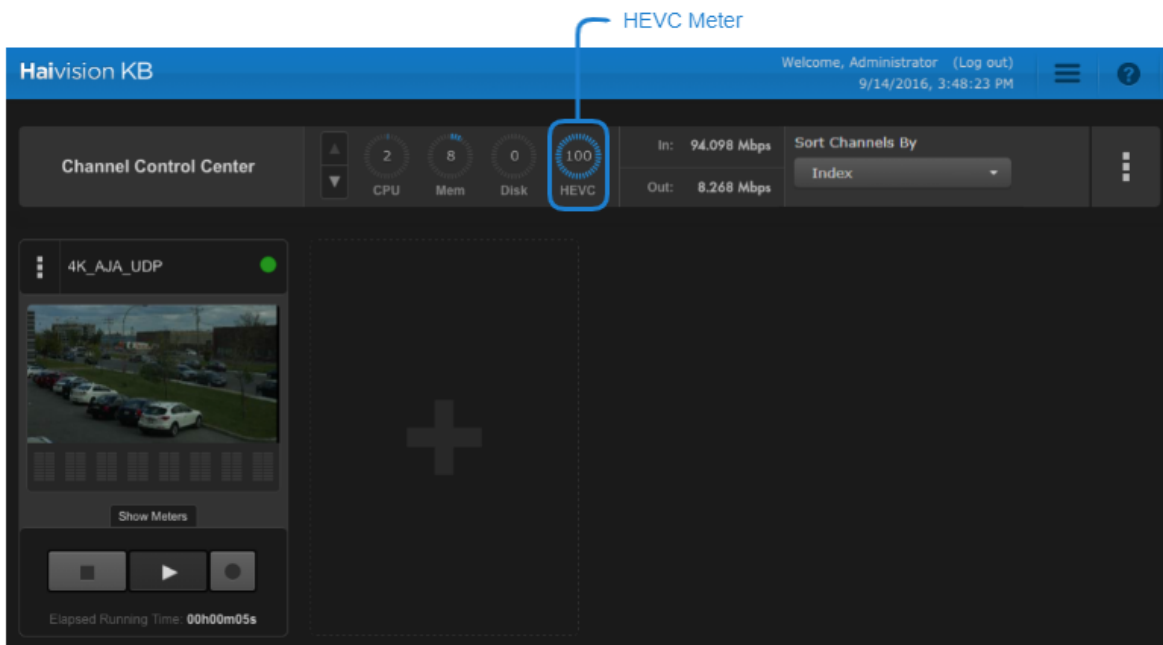
Related Topics

- **Creating a Channel**
- **Dashboard or System Status Bar**
- **Common Screen Elements**

Starting a Channel

To stream video, a channel must be created (see **Creating a Channel**) and started. In addition to starting a channel manually, you can also schedule an event to start a channel streaming video (see **Scheduling Events**).
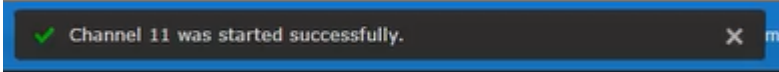
A channel can be started manually in either the **Channel Control Center Screen** or on the **Channel Details Screens**.

Channel Control Center   Channel Details Screen

To start a channel from the Channel Control Center:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Under the channel you wish to start, click the ▶ button.
3. A "Starting Channel" status indicator shows in the channel preview window while the encoder is starting.
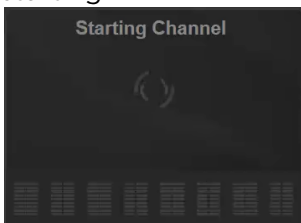
4. Once started:
   • A preview is shown in the channel preview window.
   • The status indicator changes from gray to green, orange, or red to indicate it is running (see **Status Indicators** for a description of indicator colors).
   • A website notification in the banner indicates the channel has successfully started.

   • If Closed Captioning is enabled in your source a "CC" status indicator appears in the channel preview. If this indicator is green, captions are successfully being received. If this indicator is gray, captions are not being received.

Channel Control Center   **Channel Details Screen**

To start a channel from the Channels Details screen:

1. Double-click on the channel preview window for the channel you wish to start to access the Channel Details screen. Alternatively, click ⋮ and click **Channel Details** next to the channel you wish to start.
2. In the toolbar near the top of the screen, click the ▶ button.

3. A "Starting Channel" status indicator shows in the channel details while the encoder is starting.

Starting Channel
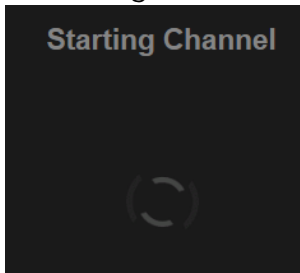
4. Once started:
    - The status indicator changes from gray to green, orange, or red to indicate it is running (see **Status Indicators** for a description of indicator colors).
    - A website notification indicates the channel has successfully started.

    ✓ Channel 11 was started successfully.   ✕
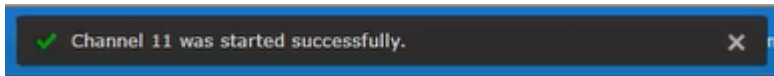
    - If Closed Captioning is enabled in your source a "CC" status indicator appears in the channel preview. If this indicator is green, captions are successfully being received. If this indicator is gray, captions are not being received.

Related Topics

- **Stopping a Channel**

Accessing Channel Details

The channel details screen provides ⚙ **Channel Configuration**, ∿ **Channel Status**, ⚙ **Event Schedule**, and 📄 **Notification Log** information, as well as the ability to start/stop the channel and recordings.

To access channel details:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Locate the appropriate channel.
3. Click the corresponding ⋮ icon and select **Channel Details** listing.
    –or–
    Double-click the channel preview of the channel you wish to see the details of.
    - If the channel is running, you are taken to the Channel Status screen.
    - If the channel is stopped, you are taken to the Channel Configuration screen.

Related Topics

- **Channel Control Center Screen**
- **Channel Details Screens**

Using the Channel Configuration Screen

After creating a channel using the Create Channel Wizard, many additional channel parameters may be created and edited within the Channel Configuration screen of the interface.

To access the Channel Configuration screen:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Locate the channel you wish to edit.
3. Click the corresponding ⋮ icon and click **Channel Details**.

4. If the channel is stopped, you are taken to the Channel Configuration screen. If not, click on the ⚙ icon to access the Channel Configuration screen.

This section describes how to edit/create various parameters within this screen:

- **Adding Parameter Sets**
- **Editing Parameters Sets**
- **Duplicating Parameter Sets**
- **Deleting Parameter Sets**

Related Topics

- **Channel Details: Channel Configuration Screen**

Input Parameters

The Edit Input Parameters window contains various input source settings that are organized in tabs.

Settings Tab

The Settings tab contains all of the available settings described in **Step 2 Input Configuration**, plus the following additional settings depending on the selected input source:

Baseband   File Source   MPEG TS (UDP and RTP)   MPEG TS (SRT)   RTMP

Parameter	Description
Audio Gain (dB)	Drop-down menu of audio gain options.
Timestamps	Drop-down menu to allow choosing between: • System Time – ever increasing timestamps starting at the system time. • Zero Based – ever increasing timestamps starting at zero. • Timecode – *(Not supported by the KB Mini appliance)* ever increasing timestamps starting at the embedded SMPTE timecode. ✅ **Tip** To synchronize streams on different encoders, either: • Use an NTP server and specify System Time on both. • Use an SDI input with embedded SMPTE timecodes and select Timecode on both.
High-Quality Deinterlace	Checkbox to enable a better deinterlacing algorithm at the cost of higher CPU usage.
Stand-By Image	Slider to enable and dropdown to select a test pattern image until a source is present. See **Disabling or Changing Stand-By Image**.
Cropping	Slider to enable the cropping of an input stream to remove image irregularities typically found along the video perimeter. See **Cropping an Input Stream**.

Baseband   **File Source**   MPEG TS (UDP and RTP)   MPEG TS (SRT)   RTMP

Parameters	Description
Loop File	Slider to enable looping of the file when it reaches the end.

Parameters	Description
Stand-By Image	Slider to enable and dropdown to select a test pattern image until a source is present. See Disabling or Changing Stand-By Image.
Cropping	Slider to enable the cropping of an input stream to remove image irregularities typically found along the video perimeter. See Cropping an Input Stream.

Baseband   File Source   **MPEG TS (UDP and RTP)**   MPEG TS (SRT)   RTMP

Parameter	Description
Input Buffer Size (ms)	Buffer size for media data in milliseconds. The output streams start after receiving a minimum of this amount of media data.
Network Interface	Select which network interface to use for the input stream.
Stand-By Image	Slider to enable and dropdown to select a test pattern image until a source is present. See Disabling or Changing Stand-By Image.
Cropping	Slider to enable the cropping of an input stream to remove image irregularities typically found along the video perimeter. See Cropping an Input Stream.

Baseband   File Source   MPEG TS (UDP and RTP)   **MPEG TS (SRT)**   RTMP

Parameter	Description
Latency (ms)	Acceptable latency in milliseconds.
Network Interface	Select which network interface to use for the input stream.
Stand-By Image	Slider to enable and dropdown to select a test pattern image until a source is present. See Disabling or Changing Stand-By Image.
Cropping	Slider to enable the cropping of an input stream to remove image irregularities typically found along the video perimeter. See Cropping an Input Stream.
Resource Name	(SRT Caller only) Enter the resource name to identify the input stream. Use in conjuction with the user name field. The resulting encoded Stream ID is shown in the Stream ID field.
User Name	(SRT Caller only) Enter the user name to identify the input stream. Use in conjuction with the resource name field. The resulting encoded Stream ID is shown in the Stream ID field.
Stream ID	(SRT Caller only) Read-only if Resource or User Name is defined. If neither is defined, then you can customize the Stream ID content/format. See the SRT Access Control Guidelines for more details.

Baseband   File Source   MPEG TS (UDP and RTP)   MPEG TS (SRT)   **RTMP**

Parameter	Description
Input Buffer Size (ms)	Buffer size for media data in milliseconds. The output streams start after receiving a minimum of this amount of media data.
Stand-By Image	Slider to enable and dropdown to select a test pattern image until a source is present. See Disabling or Changing Stand-By Image.
Cropping	Slider to enable the cropping of an input stream to remove image irregularities typically found along the video perimeter. See Cropping an Input Stream.

Audio Tab

For Baseband and MPEG TS inputs, see Configuring Audio Input Channels for a description of the Audio tab.

CC Tab

All input sources, except File Source, contain a CC (Closed Captioning) tab with the following parameters.

Parameter	Description
Closed Captioning[1]	Checkbox to enable/disable closed captioning. ⚠ **Note** Closed Captioning must be enabled in the output parameters, as well as the input (RTMP only).
Channel 1-4 Language	If the Closed Captioning checkbox is checked, these textboxes are enabled to select the channel languages.

[1] Baseband and RTMP only. For MPEG-TS, closed captioning is always decoded.

Overlay Tab

For Baseband inputs, the overlay tab allows you to place an overlay/watermark on the input video. See Enabling or Changing Overlay Image for adding an image overlay.

Related Topics

- Channel Details: Channel Configuration Screen
- Closed Captioning
- Recordings Output Parameters
- Stream Output Parameters

Configuring Audio Input Channels

For Decklink, AJA Corvid, and MPEG-TS inputs one of the options is configuring the audio input channels. This is available when creating a channel with the Create Channel Wizard (see Step 2 Input Configuration) or editing an input source on the Audio tab (see Editing Parameter Sets).

Decklink and AJA Corvid   MPEG-TS
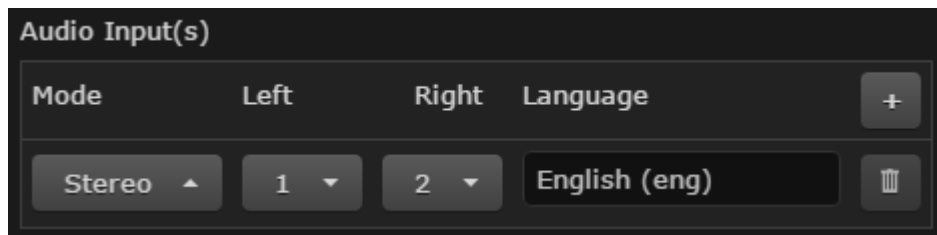
To configure the audio input channels:

1. Select the mode: Stereo or Mono.
2. Select the channel numbers assigned to the left/right channel pair for stereo mode, or the single channel number for mono mode.
3.
> ✅ **Tip**
>
> The default language is English. To see all available languages, delete the contents of the textbox, click outside the textbox, and click into the textbox. This activates a drop-down menu to allow you to select the language from a list instead of typing the language name.

4. If necessary, click the ➕ icon to add additional audio input channels and repeat steps 1-3. You can add up to 16 audio channels, e.g. eight stereo pairs.
5. If necessary, click the 🗑 icon to delete an added audio input.

Decklink and AJA Corvid   **MPEG-TS**
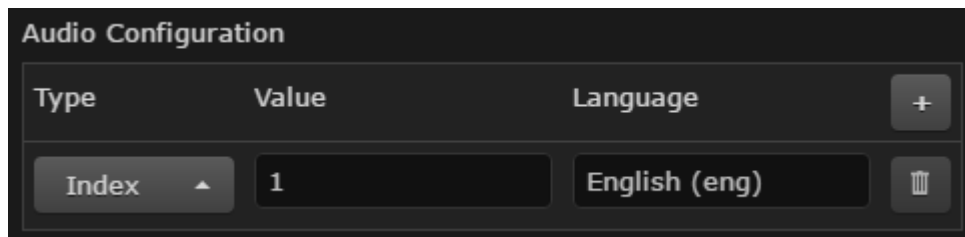
To configure the audio input channels:

1. Select the value type: Index or PID.
2. Enter the Index or PID value for the language.
3.
> ✅ **Tip**
>
> The default language is English. To see all available languages, delete the contents of the textbox, click outside the textbox, and click into the textbox. This activates a drop-down menu to allow you to select the language from a list instead of typing the language name.

4. If necessary, click the ➕ icon to add additional audio input channels and repeat steps 1-3.
5. If necessary, click the 🗑 icon to delete an added audio input.

Related Topics

- **Channel Details: Channel Configuration Screen**
- **Step 2 Input Configuration**
- **Editing Parameter Sets**

Cropping an Input Stream

> ⚠ **Note**
>
> Currently KB does not support cropping an interlaced video input.

Cropping is commonly used on baseband ingests to remove frames or other image irregularities typically found along the video perimeter.

To crop the input stream:

1. On the Channel Configuration screen, select the Input Source and click the ⚙ Edit icon.
2. Next to Cropping click the slider **On** to enable cropping.
3. Enter the number of pixels to crop from the input stream in the top, left, right, and bottom textboxes.

   > ⚠ **Note**
   >
   > Cropping values must be a factor of 4.

4. Click the **OK** button.
5. You are returned to the Channel Configuration screen. Click the **Apply** button to the right of the Channel Configuration banner for the new settings to be saved.

Related Topics

- **Channel Details: Channel Configuration Screen**

Disabling or Changing Stand-By Image

After creating a channel, a default stand-by image is used (defined in **Customizing the Stand-By Image**).

To disable or change the stand-by image used for a specific channel:

1. On the Channel Configuration screen, select the Input Source and click the ⚙ Edit icon.
2. To disable the stand-by image, next to Stand-By Image click the slider **Off**.
3. To change the stand-by image, ensure the slider next to Stand-By Image is **On**, and select the desired image from the Image drop-down. A preview thumbnail of the currently selected image is shown.
4. Click the **OK** button.
5. Click the **Apply** button to the right of the Channel Configuration banner for the new settings to be saved.

> ℹ **Note**
>
> If the selected channel is running, the changes take effect the next time the channel is restarted.

Closed Captioning

The 21st Century Communications Act of 2010 requires that any traditional broadcast which includes closed captioning must also include closed captioning when being broadcast over the internet. There are two generations of closed-captioning standards implemented by the KB Encoder/Transcoder:

- CEA-608 is fully implemented. KB can decode native CEA-608 data to text.
- CEA-708 is only implemented when containing CEA-608 data. KB can decode the CEA-608 data embedded in CEA-708.

i-Devices and Quicktime

Following the Quicktime spec, KB takes in CEA-608/line 21 data and then sends 608 data embedded in the H.264 packet headers for HLS. The CEA-708 closed captioning data is embedded in the H.264 stream as-is (without any conversion).

RTMP

The KB Encoder translates closed-captioning data added to the video/audio inputs into metadata (synchronized with the video frame). A media player then can access this metadata and provide it as captions during video playback.

> ✅ **Tip**
>
> For best results, use the player and "Live Caption" plug-in included with the Haivision Video Cloud.

Closed Captioning in Recordings

When recording with Closed Captioning enabled, a SubRip Text (SRT) file is created with an .srt file extension. The SRT file contains the closed-captioning information using the following structure:

- A sequential numeric identifier. For example, 1, 2, 3...
- The display time based upon the elapsed time counter, in the following format: (elapsed time count when to appear) --> (elapsed time count when to disappear)
- The actual closed captions.
- A blank line (as a delimiter between closed captions).

For example:

```
1
00:00:10,500 --> 00:00:13,000
Great White Sharks
2
00:00:14,000 --> 00:00:18,000
This infamous shark is the largest predatory fish on the planet.
3
...
```

Enabling or Changing Overlay Image

After creating a channel, an overlay image (watermark) may be used (defined in Defining Overlay Images).

> ⚠️ **Note**
>
> Overlay images are only supported on baseband inputs.

To enable or change the overlay image used for a specific channel:

1. On the Channel Configuration screen, select the Baseband Input Source and click the ⚙ Edit icon.
2. Click the **Overlay** tab.

3. To enable an overlay image, click the Image Overlay slider to **On**.
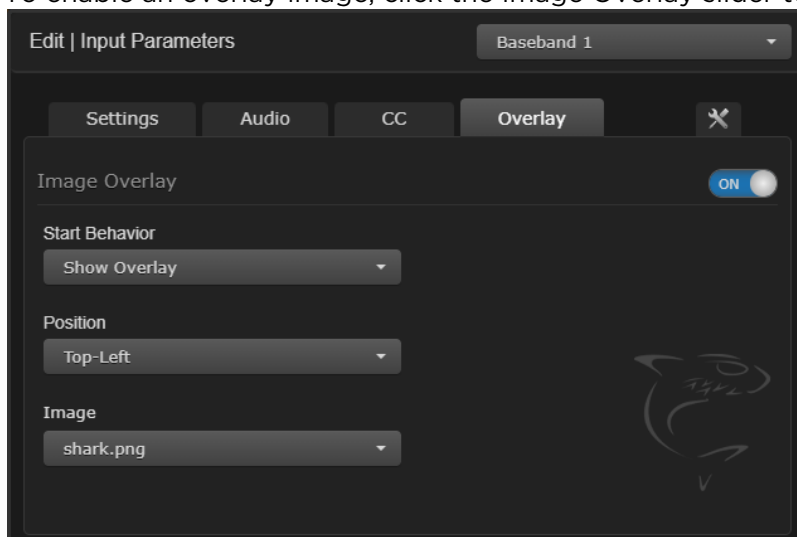
4. Choose the image to use in the Image dropdown. A preview thumbnail of the selected image is shown.
5. In the Position dropdown, select the position for the image over the video.
6. in the Start Behavior dropdown, select whether to show or hide the overlay when the channel is started.

> ✅ **Tip**
>
> After starting the channel, you can show or hide the overlay on the Channel Status page. See **Viewing Status of a Running Channel** for details.

7. Click the **OK** button.
8. Click the **Apply** button to the right of the Channel Configuration banner for the new settings to be saved.

> ⚠ **Note**
>
> If the selected channel is running, the changes take effect the next time the channel is restarted.

Reducing High Availability Sync Issues with Timestamps

> ❗ **Important**
>
> If you use a single encoder's channel to broadcast both primary and backup entry points, your setup lacks redundancy and you will have to stop distribution to make a change. Use separate channels on the same (or different) encoders to have full redundancy.

One Encoder is connected to a primary stream entry point and the second to a backup stream entry point. If the source video fails at one stream entry point, the source video is received and processed on the backup entry point, ensuring that playback continues uninterrupted for viewers. However, if the encoders are not keyframe- and timecode-aligned, there will be sync issues. The KB timestamp feature available within the Input Parameters reduces possible sync issues between the primary and backup encoders.

When configuring the stream's input parameters, you can choose between:

- System Time – ever increasing timestamps starting at the system time.
- Zero Based – ever increasing timestamps starting at zero.

> ✅ **Tip**
>
> To improve synchronization between the primary and backup encoders, the System Time is sent as timestamp *offset* to the outputs (data stream entries). The backup encoder uses this information to determine when to start the playback for a relatively seamless recovery.
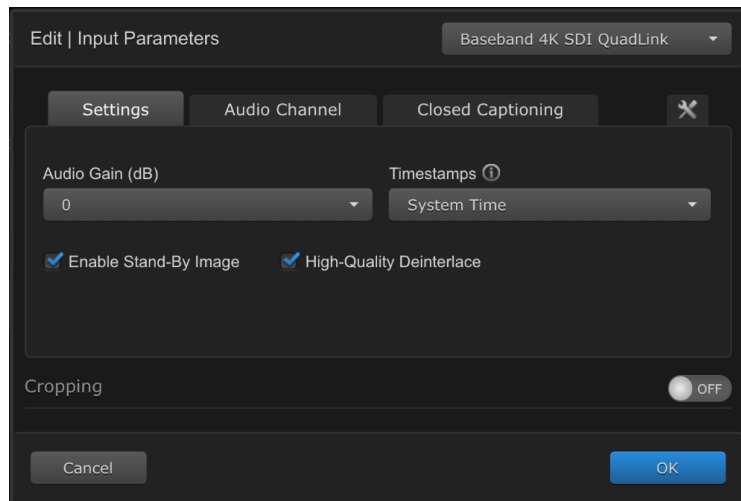
Related Topics

- **Configuring HLS Output for Primary and Backup Encoders**
- **Input Parameters**

Injecting Ad Cues

> ℹ️ **Note**
>
> Injecting ad cues is only available for baseband ingest streams. Due to buffering the injection would not be very accurate for network-based ingest.

To inject an Ad Cue:

1. From the ☰ menu, select **Channel Control Center**.
2. In the Channel Control Center, double-click on the preview of the desired running channel to open the Channel Status Information screen for that stream.
3. Enter the length of the ad in the Ad Cue **Duration** field in seconds. For instance, 120 seconds would be a 2-minute duration.
4. Click the **Send Ad Cue** button at the point in the stream that you want to inject the ad cue message.
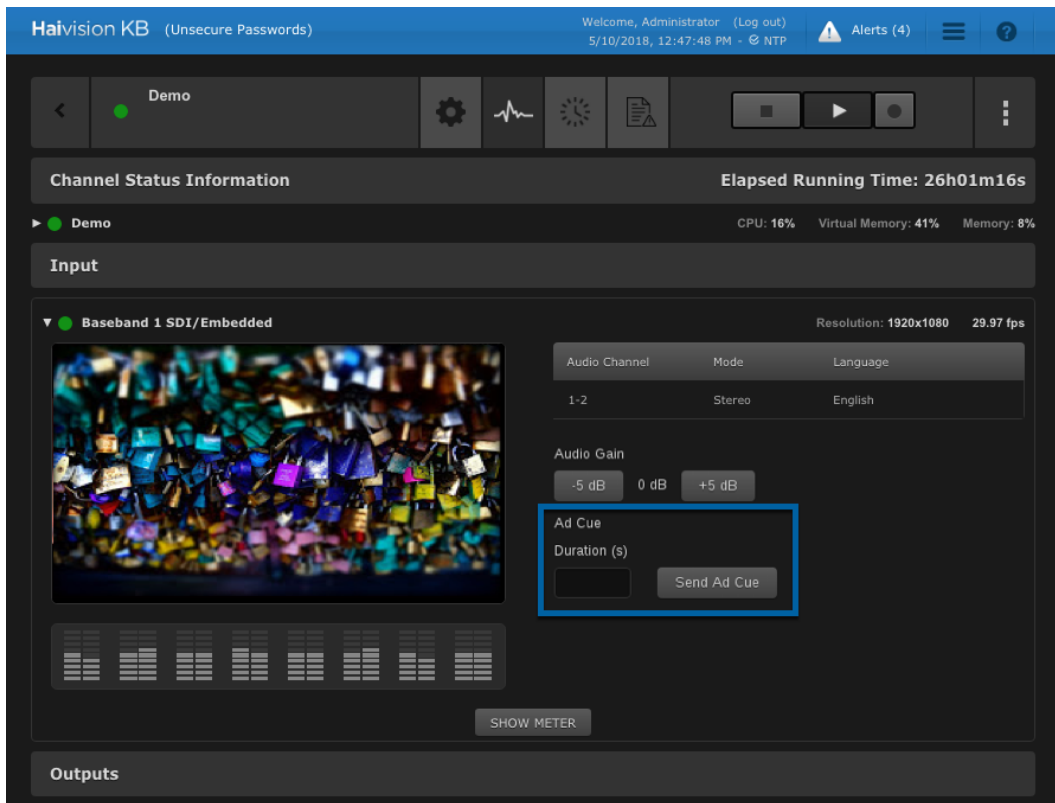
> **ⓘ Note**
>
> You can also use the REST API to inject AdCue messages into the stream. See **Inject AdCue Messages** in the *API Integrator's Reference* for details.

Related Topics

- **Configuring Streams for Ad Insertion**

Video Encoder Parameters

The Edit Video Encoder Parameters window contains the following parameters that are organized into Settings and Advanced Parameters tabs.

Settings   **Advanced Parameters**

Parameter	Description
Video Encoder Name	User-specified video encoder name.

Parameter	Description
Picture Structure	**Note** When interlaced is selected, the framerate and output resolution are the same as the stream input and their respective fields are disabled. Ensure that the video bitrate value is set appropriately, as it cannot be automatically calculated.
Framerate	Select the output framerate range. The actual framerate chosen by the encoder depends on the input framerate and this selected range. The best matched value is used.
Output Resolution	A drop-down menu that enables you to choose the output resolution for each stream associated to an output. The choices are limited by aspect ratio and the input resolution as well as the input device and region chosen. If you would like another resolution than the ones listed, select **Custom** and type in your desired resolution in the Custom Width and Custom Height textboxes.
Custom Width	If Custom is selected in Output Resolution, this textbox is editable and you may specify the desired output video width.
Custom Height	If Custom is selected in Output Resolution, this textbox is editable and you may specify the desired output video height.
Video Codec	Select the video codec to use: • H.264 CPU • H.264 HW Accelerated (always handled by the GPU) • HEVC CPU • HEVC HW Accelerated (algorithm decides the optimum of GPU or hardware-accelerated encoding)
Framing	Specify the B-Frame or bi-directional prediction frames: • IP — encoding not using B frames. • IBP — encoding using one B frame. • IBBP — encoding using two B frames. • IBBBP — encoding using three B frames. Typically, B-Frames use the differences between the current frame and both the preceding and following frames to specify its content. Keep in mind that the encoder and decoder frame reconstruction buffers may increase in size to handle the two anchor frames.
Video Bitrate (Kbps)	Specify a specific video bitrate, if you do not wish to use the automatically calculated bit rate. For progressive encodings, this textbox updates automatically as the Output Resolution or Video Codec values are changed.

Settings   **Advanced Parameters**

Parameter	Description
Codec Preset	Sets the profile.

Parameter	Description
Level	**❗ Important** The default level is not supported for KB 4K and KB Max devices using the dedicated HEVC encoder when using on MacOS and iOS (e.g., MacBook, iPad, or iPhone). To optimize for MacOS and iOS devices, manually change the level to Level_21.
Codec Performance	Establishes performance criteria (video quality versus CPU usage). Possible values are: • Performance — reduces the quality of the video by reducing the CPU usage. • Balanced — balance between better video quality and better CPU usage. • High Quality— improves the video quality but increases the CPU usage. **❗ Important** Setting the Codec performance to High Quality increases your CPU usage and limits the number of HD streams your system can process.
GOP Mode	Sets the GOP (Group of Pictures) mode: fixed or variable.
GOP Duration (ms)	**✅ Tip** The GOP duration must be divisible by the segment length. See **Stream Output Parameters** for defining the segment length.
Entropy Coding Mode	Sets the Entropy Coding mode used by the encoder. Possible values are: • **CABAC** — CABAC is only supported in the Main and High profiles. This setting requires a large amount of processing to decode. • **CAVLC** — CAVLC requires considerably less processing to decode than CABAC, although it does not compress the data quite as effectively. **❗ Important** The Entropy Coding mode automatically sets to CABAC if the Codec Preset profile is set to Main or High.

Related Topics

- **Channel Details: Channel Configuration Screen**

Audio Encoder Parameters

The Edit Audio Encoder Parameters window contains the following parameters.

Parameter	Description
Audio Encoder Name	User-specified audio encoder name.

Parameter	Description
Language	A drop-down menu that enables you to choose the audio output language. Available languages depend on the languages chosen in the input audio stream.
Bitrate	A drop-down menu to select the output audio bitrate.

Related Topics

- **Channel Details: Channel Configuration Screen**

Stream Output Parameters

The Edit Output Parameters window contains all of the available settings described in **Step 4 Output Configuration**. It also includes the following additional settings depending on the selected output protocol in the Settings tab:

HLS   DASH   RTMP   MPEG TS (UDP and RTP)   MPEG TS (SRT)

Parameter	Description
Segment Duration (ms)	The TS segment length in milliseconds. The default is 10000, which represents a 10-second segment length. ✅ **Tip** The segment duration must be a multiple of the GOP duration (keyframe interval). See **Video Encoder Parameters** for defining the GOP duration.
Segment Count	This represents the number of segments to maintain in the playlist.
Directory Rollover	Checkbox to enable Directory Rollover for HLS Akamai HD network distribution. When enabled (default), it limits the number of TS segments to 2000 before rolling over to a new directory.
Enable EXT_X_PROGRAM_DATE_TIME	Checkbox to add the EXT-X-PROGRAM-DATE-TIME tag (with the absolute wall clock time) to the top of the playlist and before each discontinuity.
Enable WebVTT	Checkbox to enable WebVTT closed captioning.
Embedded Closed Captions	Checkbox to disable embedded captions. Typically, you would disable embedded captions if you are using WebVTT captions.
Ad Insertion Tags	Available settings: None, EXT-X-CUE Tags (default), EXT-X-CUE-OUT/EXT-X-CUE-IN Tags.
Video and Audio tabs	Tabs to select which video and audio encoders to use with the corresponding stream. See **Assigning Video and Audio Encoders to the Output Streams** for more details.

HLS   **DASH**   RTMP   MPEG TS (UDP and RTP)   MPEG TS (SRT)

Parameter	Description
Segment Duration (s)	The HLS segment length in seconds. The default is a 6-second segment length.
Timeshift Depth (s)	Size of the timeshift buffer in seconds.
Inband Random Access Point	Available settings: Auto, Enable, Disable.
Video and Audio tabs	Tabs to select which video and audio encoders to use with the corresponding stream. See Assigning Video and Audio Encoders to the Output Streams for more details.

HLS   DASH   **RTMP**   MPEG TS (UDP and RTP)   MPEG TS (SRT)

Parameter	Description
RTMP Authentication	Dropdown menu for selecting the RTMP authentication method.
Change Agent ID	Click the ✏ icon to enable editing the user agent in the corresponding textbox. ⚠ **Important** Changing the user agent may cause the RTMP stream to not be accepted by your CDN.
Closed Captioning	⚠ **Note** Closed Captioning must be enabled in the input parameters as well as the output (RTMP only). Checkboxes to enable sending CC data in the following RTMP messages: • Caption Info (onCaptionInfo) • Cue Point (onCuePoint) • Text Data (onTextData) • Meta Data (onMetaData)
Ad Insertion	Checkboxes to enable insertion via the following: • Ad Cue • Cue Point • Cue

HLS   DASH   RTMP   **MPEG TS (UDP and RTP)**   MPEG TS (SRT)

Parameter	Description
Network Interface	Select which network interface to use for the output.
MTU (280-1500)	Maximum Transfer Unit. Specifies the maximum allowed size of IP packets for the outgoing data stream.
TTL (1-255)	Time to Live. Specifies the number of router hops the stream packet is allowed to travel/pass before it must be discarded.

Parameter	Description
ToS (0x00-0xFF)	Type of Service. Specifies the desired quality of service (QoS). This value is assigned to the ToS field of the IP Header for the outgoing streams. ⚠ A DiffServ or DSCP (Differentiated Services Code Point) value must be converted to a ToS precedence value. For example, AF41 or DSCP 34 (0x22) becomes ToS 136 (0x88). For more information, see RFC2474.
Enable SCTE-35	Checkbox to enable an elementary stream for SCTE-35 messages to be added to the output stream.
PID (1-8190)	When SCTE-35 is enabled, PID value for SCTE-35 messages.
SCTE-35 Descriptor	Specifies which SCTE-35 descriptors are added to PMT: no descriptors, cue identifier descriptor, stream identifier descriptor, or both.
SCTE-35 Cue Stream Type	The value for the cue_stream_type field in the Cue Identifier descriptor. See the *ANSI/SCTE-35 Digital Program Insertion Cueing Message for Cable* specification for possible values. Default is 0x01 (all commands).
Video and Audio tabs	Tabs to select which video and audio encoders to use with the corresponding stream. See **Assigning Video and Audio Encoders to the Output Streams** for more details.

HLS   DASH   RTMP   MPEG TS (UDP and RTP)   **MPEG TS (SRT)**

Parameter	Description
Latency (20-8000ms)	Specifies the SRT receiver buffer that permits lost packet recovery. The size of this buffer adds up to the total latency. A minimum value must be 3 times the round-trip-time (RTT). Maximum of the decoder and encoder configured latency. For example: • Encoder-configured SRT Latency = 750 • Decoder-configured SRT Latency = 20 At startup, handshake exchanges the value configured on both sides and the largest one is selected.
Bandwidth Overhead (5-100%)	Specifies the maximum stream bandwidth overhead that can be used for lost packet recovery. ⚠ **Note** SRT streams can temporarily exceed the defined Bandwidth Overhead limit.
Resource Name	(SRT Caller only) Enter the resource name to identify the output stream. Use in conjuction with the user name field. The resulting encoded Stream ID is shown in the Stream ID field.
User Name	(SRT Caller only) Enter the user name to identify the output stream. Use in conjuction with the resource name field. The resulting encoded Stream ID is shown in the Stream ID field.
Stream ID	(SRT Caller only) Read-only if Resource or User Name is defined. If neither is defined, then you can customize the Stream ID content/format. See the **SRT Access Control Guidelines** for more details.
Network Interface	Select which network interface to use for the output.

Parameter	Description
MTU (280-1500)	Maximum Transfer Unit. Specifies the maximum allowed size of IP packets for the outgoing data stream.
TTL (1-255)	Time to Live. Specifies the number of router hops the stream packet is allowed to travel/pass before it must be discarded.
ToS (0x00-0xFF)	Type of Service. Specifies the desired quality of service (QoS). This value is assigned to the ToS field of the IP Header for the outgoing streams. ⚠ **Note** A DiffServ or DSCP (Differentiated Services Code Point) value must be converted to a ToS precedence value. For example, AF41 or DSCP 34 (0x22) becomes ToS 136 (0x88). For more information, see RFC2474.
Enable SCTE-35	Checkbox to enable an elementary stream for SCTE-35 messages to be added to the output stream.
PID (1-8190)	When SCTE-35 is enabled, PID value for SCTE-35 messages.
SCTE-35 Descriptor	Specifies which SCTE-35 descriptors are added to PMT: no descriptors, cue identifier descriptor, stream identifier descriptor, or both.
SCTE-35 Cue Stream Type	The value for the cue_stream_type field in the Cue Identifier descriptor. See the *ANSI/SCTE-35 Digital Program Insertion Cueing Message for Cable* specification for possible values. Default is 0x01 (all commands).
Video and Audio tabs	Tabs to select which video and audio encoders to use with the corresponding stream. See Assigning Video and Audio Encoders to the Output Streams for more details.

Related Topics

- Channel Details: Channel Configuration Screen
- Step 4 Output Configuration
- Assigning Video and Audio Encoders to the Output Streams

Assigning Video and Audio Encoders to the Output Streams

You select which video and audio encoders each output stream uses in the Edit Output Parameters windows.

HLS and DASH   MPEG-TS   RTMP

The Video tab contains a list of available video encoders for the channel as shown in the figures below.

HLS	DASH
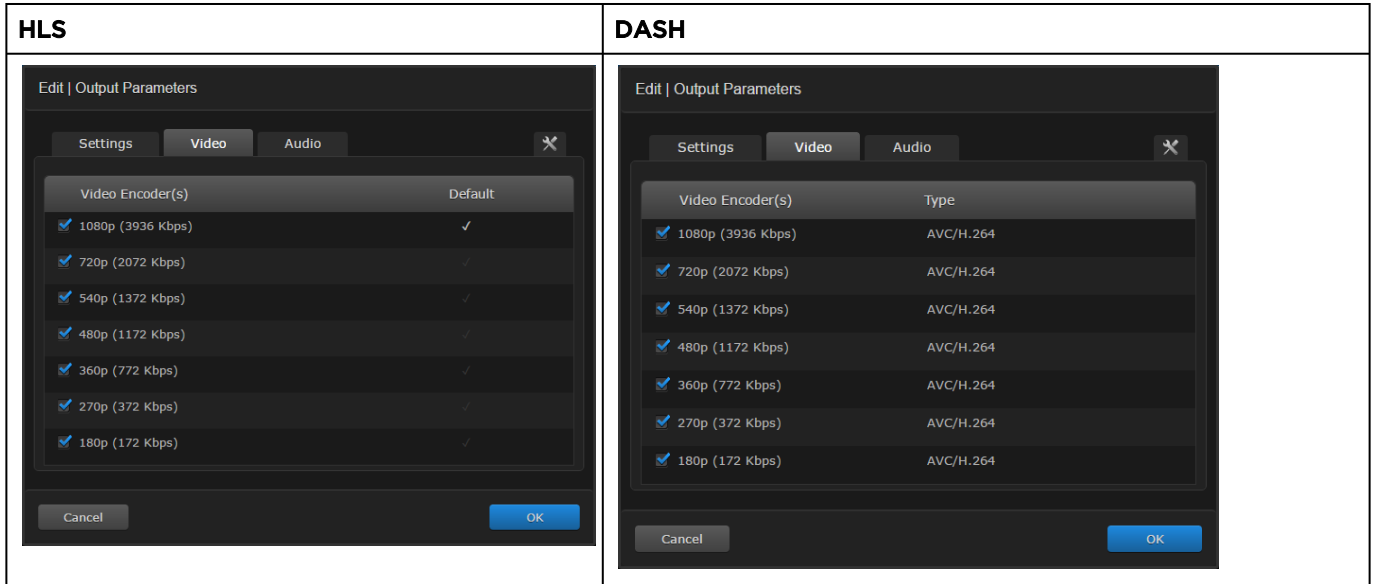
To select which video encoders are used:

1. Click the checkbox next to each encoder to enable/disable it.
2. For HLS only, select which encoder is the default by clicking on the appropriate checkmark under the Default column.

The Audio tab contains a list of available audio languages for the channel as shown in the figure below.
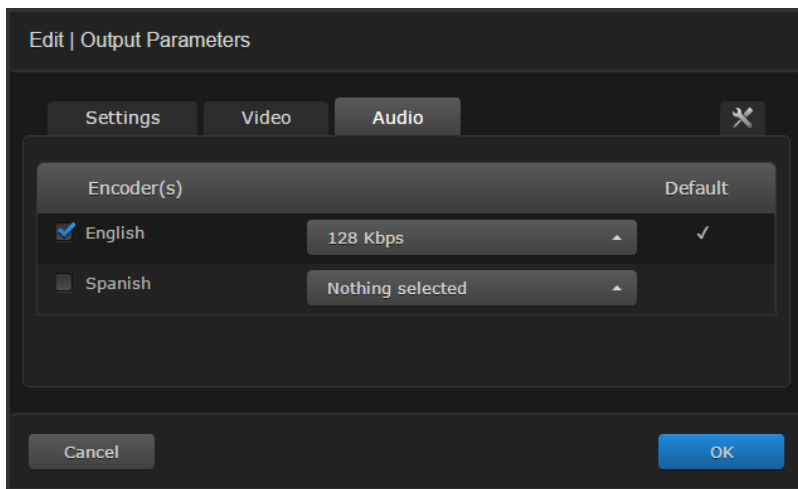
To select which audio encoders are used:

1. Click the checkbox next to each language to enable/disable it.
2. In the dropdown menu next to each language, select which audio bit rate is used.
3. Select which language is the default by clicking on the appropriate checkmark under the Default column.

HLS and DASH   **MPEG-TS**   **RTMP**

The Video tab contains a drop-down menu of available video encoders for the channel as shown in the figure below.
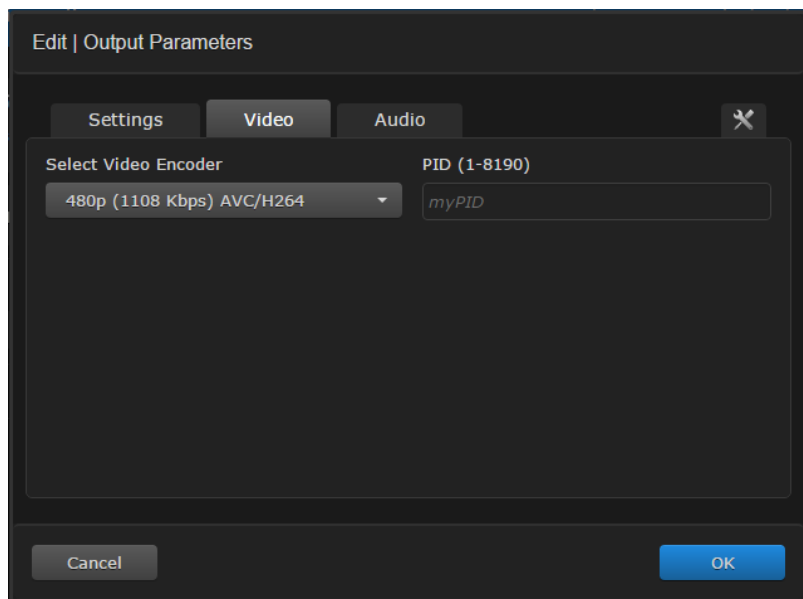
To select which video encoder is used:

1. Select the video encoder from the drop-down menu.
2.
> **ℹ Note**
>
> The PID values must be unique among the enabled video and audio encoders.

The Audio tab contains a list of available audio languages for the channel as shown in the figure below.

To select which audio encoders are used:

1. Click the checkbox next to each language to enable/disable it.

2.
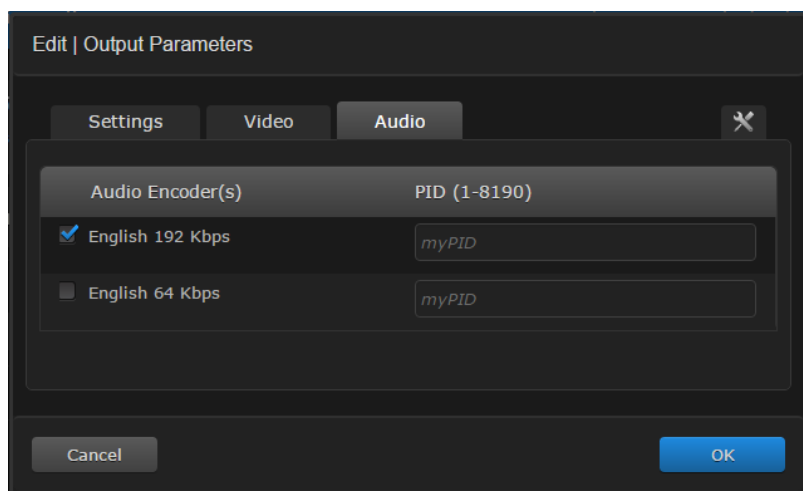
> ℹ️ **Note**
>
> The PID values must be unique among the enabled video and audio encoders.

HLS and DASH   **MPEG-TS**   **RTMP**

The audio and video encoders are selected using the Stream tab. On this tab, you assign audio and video encoders to each stream you create.
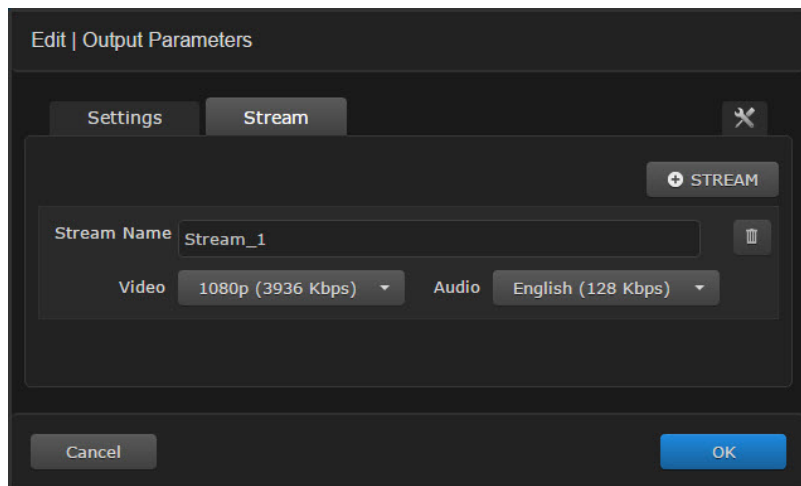
To add an RTMP stream:

1. Click the ➕ **Stream** button.
2. Optionally, edit the stream name. The default stream name is generated using the stream name template defined when the RTMP output was added via **Step 4 Output Configuration** of the Create Channel Wizard or **Adding Parameter Sets**.

   > ℹ️ **Note**
   >
   > If multiple RTMP streams are used, the stream names must be unique.

3. Select a video encoder in the Video drop-down menu. At least one video or audio encoder must be selected for a stream.

   > ℹ️ **Note**
   >
   > Only progressive output streams are supported for RTMP.

4. Select an audio encoder in the Audio drop-down menu. At least one video or audio encoder must be selected for a stream.
5. Repeat steps 1-4 for each additional RTMP stream you wish to add.

To delete an RTMP stream:

1. Next to the stream name you wish to delete, click the 🗑️ icon.

> **Note**
>
> At least one output stream must be created; so, the 🗑 icon is disabled if only one stream exists.

After finishing assigning video and audio encoders, click the **OK** button. You are returned to the Channel Configuration screen, where you must click the **Apply** button for your new settings to take effect.

Related Topics

- **Channel Details: Channel Configuration Screen**

Configuring Streams for Ad Insertion

KB 5.0+ supports the SCTE-35 and SCTE-104 digital program insertion specifications. KB receives the SCTE-104 data within the SDI input stream or SCTE-35 data in the MPEG-TS input stream and converts these to SCTE-35 messages on the HLS, RTMP, and MPEG-TS output streams. (SCTE-35 messages are not yet supported for DASH output streams.)

HLS   RTMP   MPEG TS

By default, AdCue messages using EXT-X-CUE tags are automatically added to the HLS playlist when SCTE-104 or SCTE-35 messages are received. To disable these messages or change the inserted tag type:

1. In the Channel Configuration screen, double click on the RTMP output you created in **Creating a Channel**.
2. In the Edit Outputs Parameters window, use the Ad Insertion Tags dropdown to disable or configure the ad insertion tag type to use in the output.
3. Click **OK**.
4. Click **Apply** in the Channel Configuration window to save your changes.

HLS   **RTMP**   MPEG TS

1. In the Channel Configuration screen, double click on the RTMP output you created in **Creating a Channel**.

2. In the Edit Outputs Parameters window, use the Ad Insertion checkboxes to configure the output.
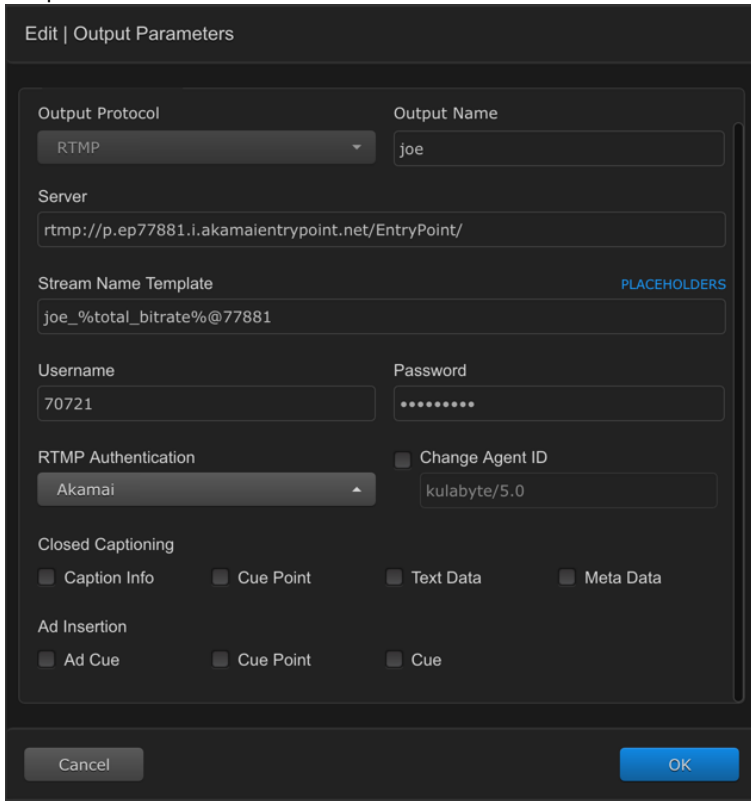
3. Click **OK**.
4. Click **Apply** in the Channel Configuration window to save your changes.

AdCue messages are added to the RTMP output stream.

HLS   RTMP   **MPEG TS**

1. In the Channel Configuration screen, double click on the MPEG TS output you created in **Creating a Channel**.
2. In the Edit Outputs Parameters window:
    a. Check the Enable SCTE-35 checkbox.
    b. Specify the PID value for the SCTE-35 messages.
    c. Select whether cue, stream, or both identifier descriptors are added to the PMT.
    d. If cue identifier descriptors are used, enter the cue stream type value.
3. Click **OK**.
4. Click **Apply** in the Channel Configuration window to save your changes.

An elementary stream is added containing the SCTE-35 data.

> ℹ️ **Note**
>
> You can also use the REST API to inject AdCue messages into the stream. See **Inject AdCue Messages** in the *API Integrator's Reference* for details.

Related Topics

- **Injecting Ad Cues**

Recordings Output Parameters

The Edit Recording Parameters contains the following parameters, divided into two tabs:

Settings   Audio

Parameters	Description
File Name	Name of the MP4 recording. Ensure that this is unique and includes the .mp4 file extension. If you want to generate a unique name each time the channel is started, see **Generating a Unique Recording Filename**.
Video Encoder	Dropdown list to select the video encoder to use for this recording.
Split File Based on Duration	Checkbox to split the recording into multiple files after the number of minutes indicated in the corresponding textbox is reached.
Split File Based on Size	Checkbox to split the recording into multiple files when it reaches the file size indicated in the corresponding textbox.

Settings   Audio

The Audio tab contains a list of available audio languages for the recording as shown in the figure below.
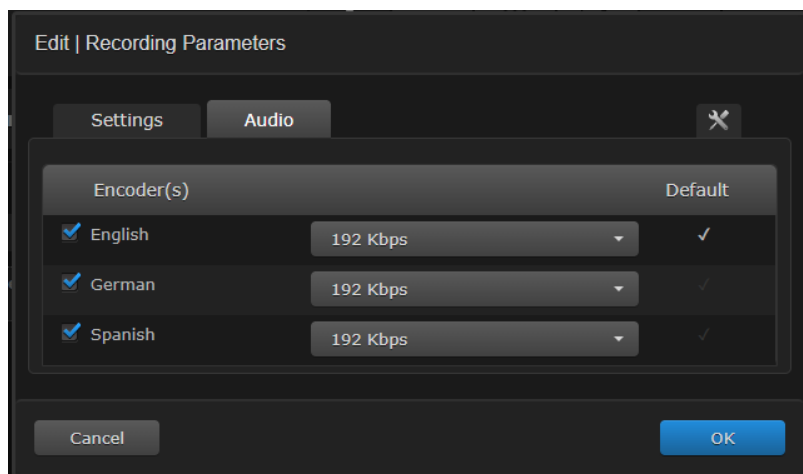
To select which languages are added to the recording:

1. Click the checkbox next to each language to enable/disable it.
2. In the dropdown menu next to each language, select which audio bit rate to use.
3. Select which language is the default by clicking on the appropriate checkmark under the Default column.

> ⚠ **Note**
>
> - A maximum of 31 audio channels is supported for each recording.
> - The default language will be the first language in the list of the recording.
> - If the subsequent recording is used later as a File Source input for a channel, only the default language will be used.

Related Topics

- **Channel Details: Channel Configuration Screen**
- **Generating a Unique Recording Filename**

Generating a Unique Recording Filename

Generating a unique recording filename requires that you edit the output recording parameters using placeholder elements. You specify the filename using timestamp and index number tokens to generate unique filenames.

To specify a unique name for each recording file:

1. On the Channel Configuration screen, click the Recording Output you wish to update and click the ⚙ Edit icon.
2. In the File Name textbox, edit the filename for the output. To specify a unique name that varies with each time that you use the channel, include any of the following placeholder components. These placeholders are also accessible via the **Placeholders** link to the right of the textbox.

Placeholder	Value
%year%	Inserts a 2-digit number for the current year.
%month%	Inserts a 2-digit number for the current month.
%day%	Inserts a 2-digit number for the current day.
%hour%	Inserts a 2-digit number for the current hour.
%minute%	Inserts a 2-digit number for the current minute.
%second%	Inserts a 2-digit number for the current second.
%index%	ℹ **Note** If %index% is not used in the recording name, it is implicitly appended to the end of the recording name.

3. Click the **OK** button.
4. You are returned to the Channel Configuration screen. Click the **Apply** button to the right of the Channel Configuration banner for the new settings to be saved.

An example file name entry using placeholders is shown below:

```
Feed1_%day%-%month%-%year%_%index%.mp4
```
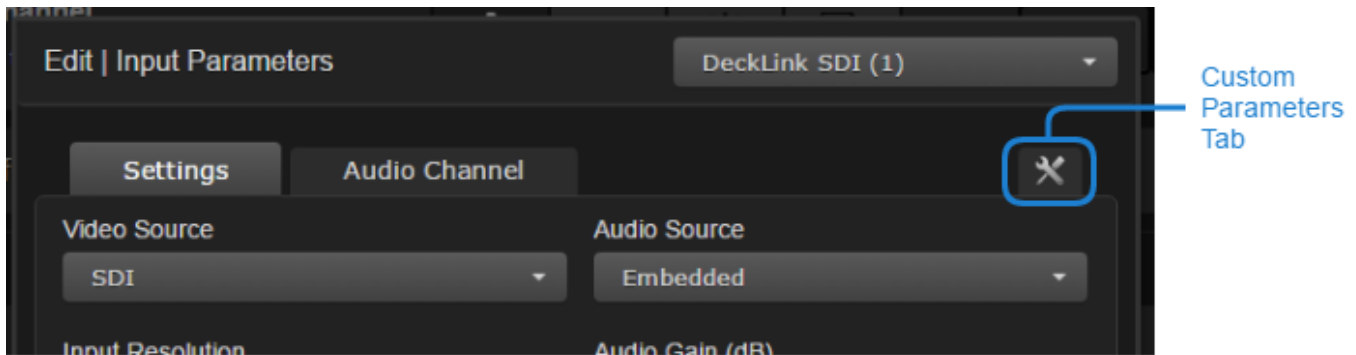
results in:

```
Feed1_03-08-16_0001.mp4
```
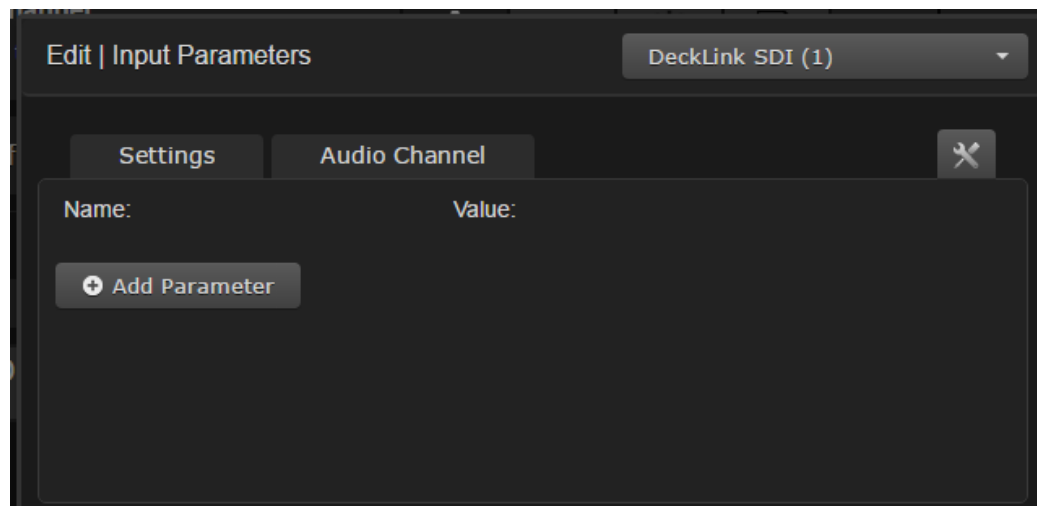
Related Topics

3. Repeat steps 1 and 2 to add additional custom parameters.
4. Click the **OK** button in the Edit Parameters window.
5. Click **Apply** on the Channel Configuration screen for the custom parameters to be saved.

Deleting a Custom Parameter

To delete a custom parameter on the Custom Parameter tab:

1. Click the 🗑 icon next to the parameter you wish to delete.
2. Click the **OK** button in the Edit Parameters window.
3. Click **Apply** on the Channel Configuration screen for the custom parameters to be saved.

Related Topics

- **Channel Details: Channel Configuration Screen**

Configuring HLS Output for Primary and Backup Encoders

> ℹ️ **Note**
>
> For player fail-over to work correctly:
> - Both encoders must use the same video and audio streams.
> - The selected default stream in the HLS outputs must be the same.
> - HLS destinations should deny access to stream playlists which are no longer updated by their encoder. Akamai names this functionality "Stale playlist detection".

There are four parameters that must be set on the primary and backup encoders. Two of them are available as text boxes in the UI (Server URL and Playback URL), while the other two must be defined through the Custom Parameters tab (`backup_url` and `var_playlist_url`). The backup encoder's `var_playlist_url` parameter ensures that the backup encoder can upload a master playlist to the location accessible by the player in case the primary encoder fails to do so (that is, fails before it creates the three segments required to be present in the playlist).

For example, given the following Akamai configuration, where the Event Name is defined as "MyEvent":

Primary Entrypoint	http://post.my_hostname.akamaihd.net/226259/MyEvent
Primary Playback	https://my_hostname.akamaihd.net/hls/live/226259/MyEvent
Backup Entrypoint	http://postb.my_hostname.akamaihd.net/226259-b/MyEvent
Backup Playback	https://my_hostname.akamaihd.net/hls/live/226259-b/MyEvent
Playlist Name	playlist.m3u8

Use the following settings in your KB encoders:

Parameter	Primary KB Encoder	Backup KB Encoder
Server	Primary Entrypoint	Backup Entrypoint
Playback URL	Primary Playback	Primary Playback
backup_url	Backup Playback	Backup Playback
var_playlist_url	—	Primary Entrypoint + "/" + Playlist Name

Related Topics

- **Configuring HLS Output for Primary and Backup Encoders**

- **Custom Parameters**
- **Input Parameters**

Adding Parameter Sets

After a channel is created, you may add additional sets of encoder and destination parameters to it on the Channel Configuration screen.

To add an encoder or destination parameter set to a channel:

1. On the Channel Configuration screen, locate the encoder or destination type you would like to add. For example, locate the Video Encoders parameter sets.
2. Click the ✚ icon in the corresponding encoder or destination type.
3. A new Edit Parameters window opens. Fill in the settings as necessary; see the sections within **Editing Parameter Sets** for details for each setting. The name of the new parameter set must not be the same as an existing parameter set. For example, the name of a new Video Encoder parameter set must not be the same as an existing Video Encoder parameter set.
4. Click the **OK** button.
5. You are returned to the Channel Configuration screen, with the new encoder or destination parameter set selected/highlighted. Click the **Apply** button to save the settings.

Related Topics

- **Channel Details: Channel Configuration Screen**

Editing Parameter Sets

To edit any of the sets of parameters:

1. In the **Channel Configuration screen**, double click on the source, encoder, or destination parameter set. Alternatively, click on the source, encoder, or destination parameter set you wish to edit, and click the ⚙ icon above it.

2. The corresponding Edit Parameters window opens. Various configuration parameters are available, depending on the parameter set you chose. This window is organized with different tabs. See the following sections for a description of all available parameters, and see **Custom Parameters** for more details on the ✖ Custom Parameters tab.
3. After editing the necessary parameters, click the **OK** button.
4. You are returned to the Channel Configuration screen. Click the **Apply** button to the right of the Channel Configuration banner for the new settings to be saved.

Related Topics

- **Channel Details: Channel Configuration Screen**

- **Custom Parameters**

Duplicating Parameter Sets

The Channel Configuration screen allows you to duplicate a set of encoder and destination parameters. This is useful when you want to add an encoder or destination with similar settings as an existing one.

To duplicate a set of encoder or destination parameters:

1. On the Channel Configuration screen, click on the encoder or destination parameter set you want to duplicate.
2. Click the ◧ icon in the section heading of the parameter you chose.
3. A Duplicate Parameters window opens with the same parameter settings as the original and the Name textbox blank.
4. Enter a name for the new parameter set. It must not be the same name as an existing parameter set.
5. Optionally, change any of the parameters.
6. Click the **Duplicate** button.
7. You are returned to the Channel Configuration screen, with the new set of encoder or destination parameters selected/highlighted. Click the **Apply** button to save the settings.
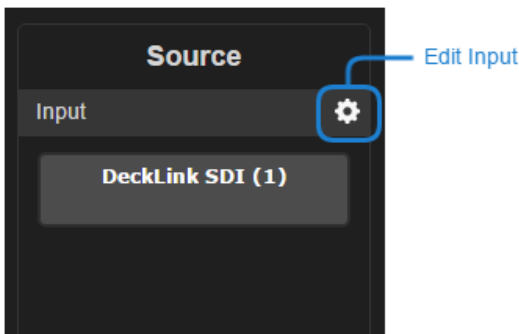
Related Topics

- **Channel Details: Channel Configuration Screen**

Deleting Parameter Sets

To delete an encoder and destination parameter set:

1. On the Channel Configuration screen, click on the encoder or destination parameter set you wish to delete.
2. Click the 🗑 icon in the section heading of the parameter set you chose.
3. A confirmation dialog box opens. Click **Remove** to delete the encoder or destination parameter set.
4. You are returned to the Channel Configuration screen, with the selected encoder or destination parameter set removed. Click the **Apply** button to save the settings.

Related Topics

- **Channel Details: Channel Configuration Screen**

Viewing Status of a Running Channel

While a channel is running, the KB interface provides you with detailed channel status.

To view channel status:

1. Click the ☰ icon and click **Channel Control Center**.
2. Ensure the channel is running.
3. Click ⋮ icon next to the channel and click **Channel Details**. Alternatively, double click on the video preview of the channel you wish to view the status of.

You are taken to the Channel Status screen automatically. You can also access this screen via the channel details toolbar by clicking on the ⎍ icon.
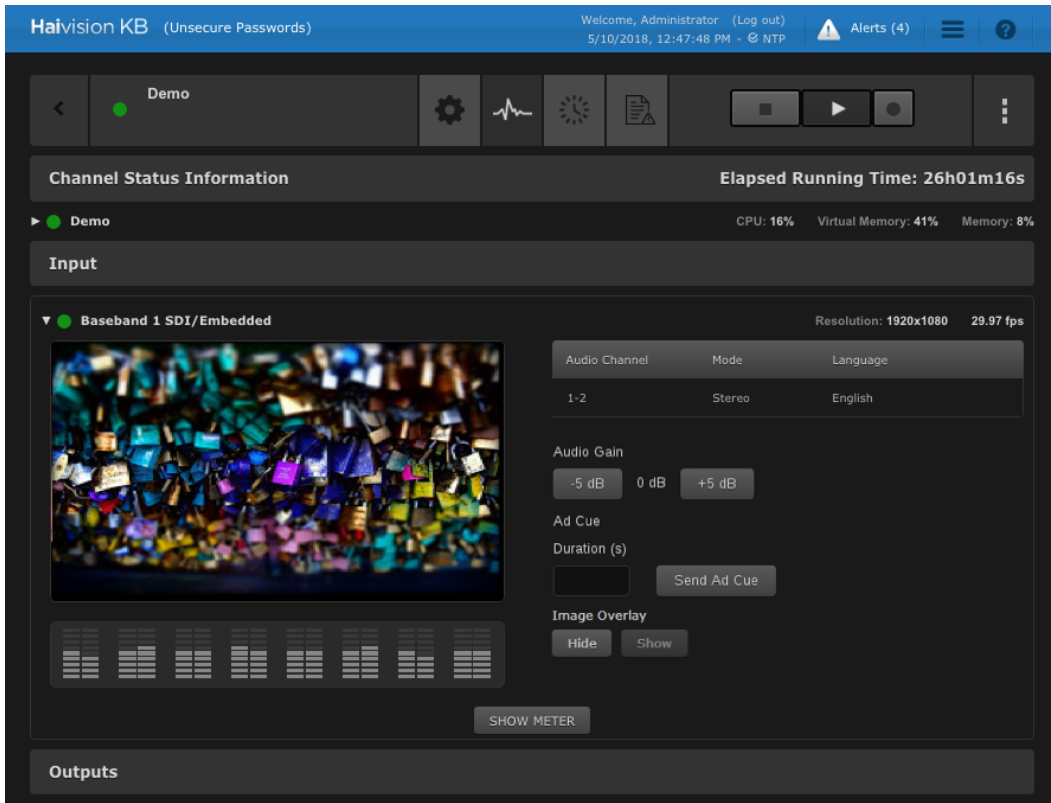
The Channel Status screen is split into four sections/panes:

- **Channel Status Information**
- **Inputs**
- **Outputs**
- **Recordings**

Each section can be expanded/collapsed by clicking on the corresponding ▶ / ▼ icon. The following sections explain each of these sections.

Related Topics

- **Channel Details: Channel Status Screen**

Channel Status Information

The channel status information pane within the channel status window contains statistics regarding CPU and memory consumed by the channel.

When the pane is collapsed, the following information is available:

- Elapsed running time—amount of time that has passed since the channel has started.
- Instantaneous usage values—the current percentage of CPU, virtual memory, and physical memory being used by the channel.

When the pane is expanded, the above content is shown, plus an additional usage graph, as shown in the following figure.
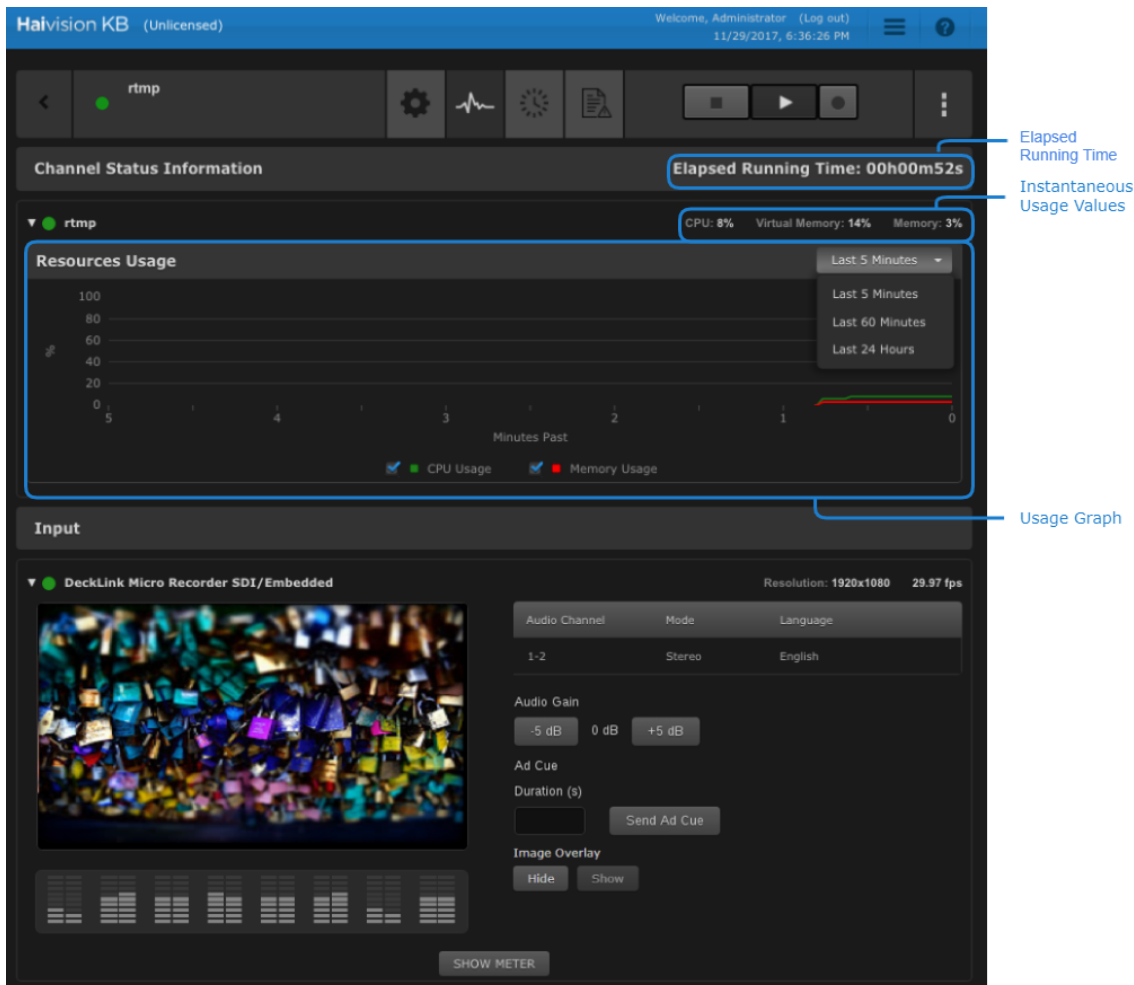
The view of the usage graph is customizable by using the drop-down menu in the top right and the checkboxes at the bottom of the graph.

- The drop-down menu allows you to select the amount of time shown in the graph on the x-axis. Available options are: last 5 minutes, last 60 minutes, and last 24 hours.
- The checkboxes allow you to show or hide the channel's CPU and physical memory usage.

Related Topics

- Channel Details: Channel Status Screen

Input Status
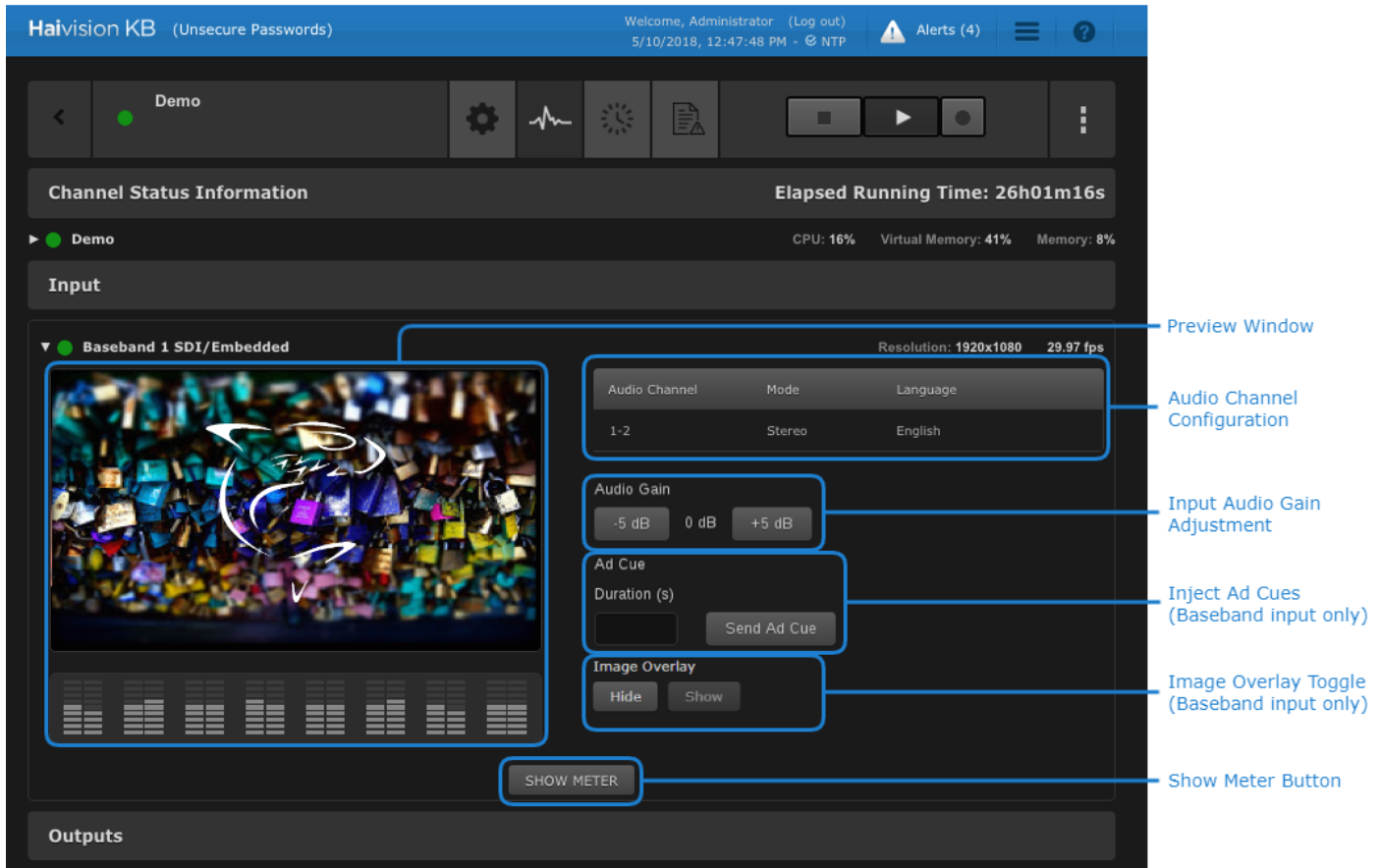
The input pane within the channel status window contains statistics and status regarding the input video.

When the pane is collapsed, the following information is available:

- Input video resolution
- Input video frame rate

When the pane is expanded, the above content is shown, plus additional details, as shown in the following figure.

- Preview window with graphical input audio meters
- Audio channel configuration—lists the input audio language configuration as defined in **Configuring Audio Input Channels**.
- Input audio gain adjustment—includes buttons to increase or decrease the audio gain. When increasing the gain, use the graphical audio meters in the preview window to help avoid clipping.
- Inject Ad Cues—For baseband inputs, allows you to enter the ad cue duration and inject the ad cue. See **Injecting Ad Cues** for more info.
- Image overlay toggle—For baseband inputs, if an image overlay is defined for a channel, the toggle buttons allow you to show/hide the overlay while the channel is running. See **Enabling or Changing Overlay Image** for details.
- Show Meter button—clicking this button opens a graph of the input capture signal state. The view of the usage graph is customizable by using the drop-down menu in the top right:
  - The drop-down menu allows you to select the amount of time shown in the graph on the x-axis. Available options are: last 5 minutes, last 60 minutes, and last 24 hours.

Related Topics

- **Channel Details: Channel Status Screen**

Outputs Status

The outputs pane within the channel status window contains statistics and status regarding the output streams.

When the pane is collapsed, the following information is available for each output stream

- Output stream name
- Stream protocol
- Stream destination/port
- Output bitrate

When the pane is expanded, the above content is shown, plus additional details, as shown in the following figure.
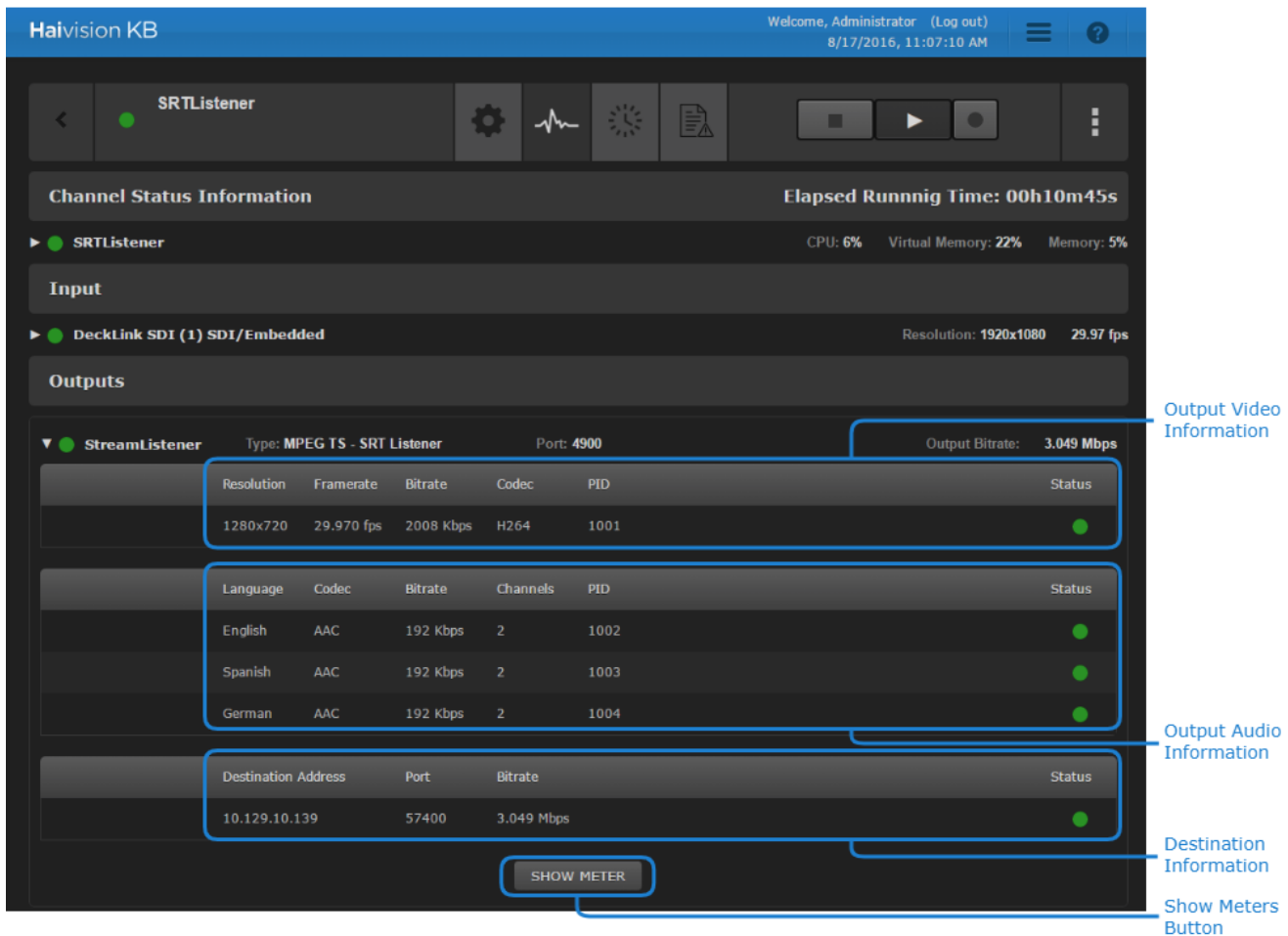
- Output video information—includes video resolution, framerate, bitrate, name of codec, PID, and a **Status Indicator**.
- Output audio information—includes for each audio language: audio language, codec, bitrate, number of channels, PID, and a **Status Indicator**.
- Destination information (MPEG-TS SRT outputs only)—includes destination address, port, bitrate, and a **Status Indicator**.
- Show Meters button (MPEG-TS SRT outputs only)—clicking this button opens graphs of output delays and bandwidth. The view of each usage graph is customizable by using the drop-down menu in the top right and checkboxes at the bottom of each graph:
  - The drop-down menu allows you to select the amount of time shown in the graph on the x-axis. Available options are: last 5 minutes, last 60 minutes, and last 24 hours.

- On the Latency graph, the checkboxes allow you to show or hide the output stream's latency and round-trip time
- On the Bandwidth graph, the checkboxes allow you to show or hide the output stream's bitrate, retransmit rate, and available bandwidth.

Related Topics

- **Channel Details: Channel Status Screen**

Recordings Status

The recordings pane within the channel status window contains recording statistics and status information.

When the pane is collapsed, the following information is available for each recording:

- Number of active recordings
- Disk space used by the recordings
- Disk space available
- Disk writing rate

When the pane is expanded, the above content is shown, plus additional details, as shown in the following figure.

The following information is shown for each active recording:

- Video resolution, framerate, video bitrate, audio language, audio bitrate, folder and filename, and a **Status Indicator**.

Related Topics

- **Channel Details: Channel Status Screen**

Duplicating a Channel

After a channel has been created, it can be duplicated:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Click ⋮ and click **Duplicate Channel** next to the channel you want to duplicate.
3. Specify a name and description of the new channel and click **Duplicate**.

> **ℹ Note**
>
> The new channel name must be unique.

A channel with the specified name is added in the Channel Control Center. It has the same settings as the original channel.

Related Topics

- **Channel Control Center Screen**

Importing/Exporting a Channel

To simplify copying a channel between multiple KB encoders, the web interface supports importing and exporting the channel configurations. Also useful when backing up and restoring encoders.

The following sections explain how to do this:

- **Importing Channel Configurations**
- **Exporting Channel Configurations**

Importing Channel Configurations

To import an existing channel's configuration:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Click the ⋮ Channel Control Center menu on the action bar and select **Import Channel(s)**.
3. When the dialog opens, browse to the location of the channel configuration zip file and click **Import.**
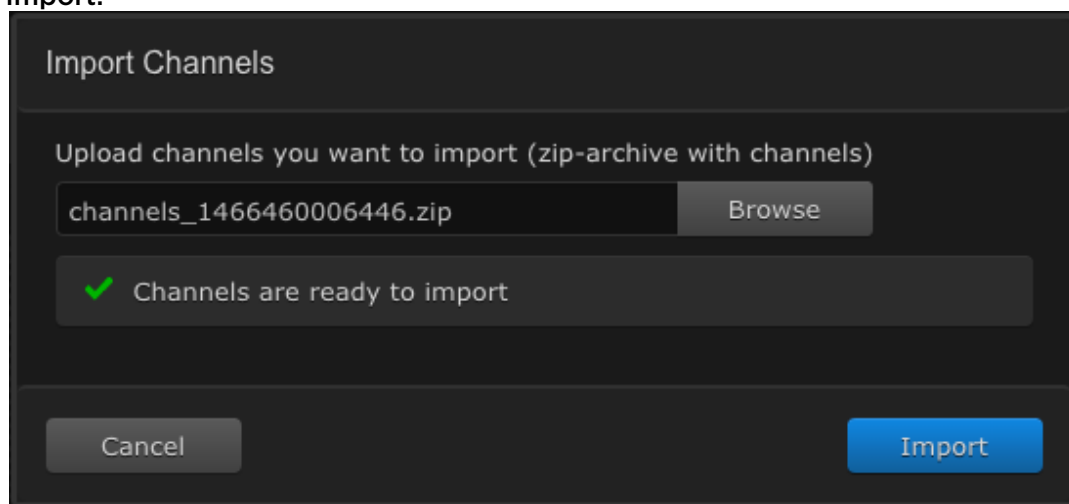
A website notification appears in the banner indicating the success or failure of the operation. For instance,

- If the channel name already exists, you will receive a message offering you the opportunity to rename, overwrite, or ignore the channel issue.
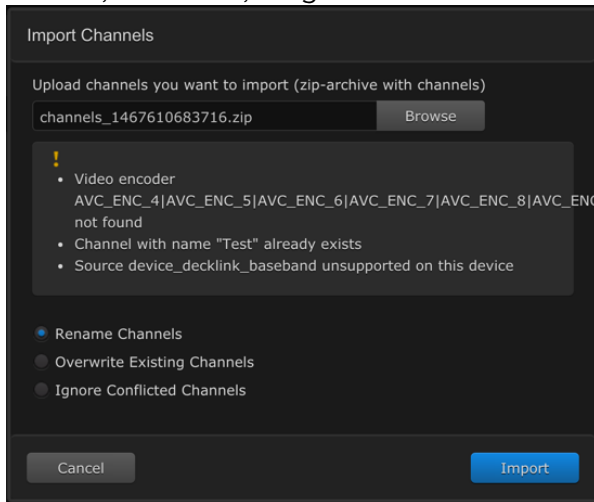
- If the imported channel configuration includes non-existing hardware, you will be alerted that the specified hardware is not supported on this device.
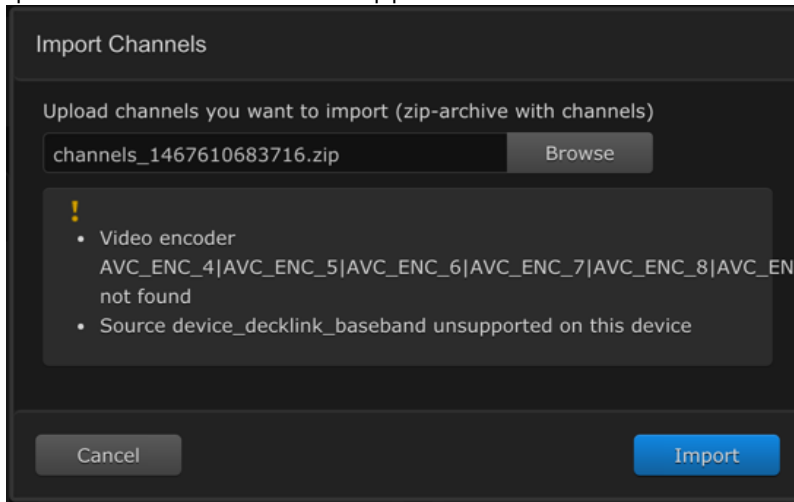
Related Topics

- **Exporting Channel Configurations**

Exporting Channel Configurations

Channel configurations can be exported for an individual channel or for multiple channels:

- Single channel configuration can be exported directly from the Channel Window.
- Multiple channel configurations can be exported from the Channel Control Center.

For directions on how to do so, choose the appropriate tab for your use.

Channel Window   Channel Control Center

To export a *single* channel configuration from the Channel window:

1. Click the ≡ icon, and click **Channel Control Center**.
2. Select the Channel window whose configuration you want to export.
3. Click the ⋮ Channel menu and select **Export Channel**.
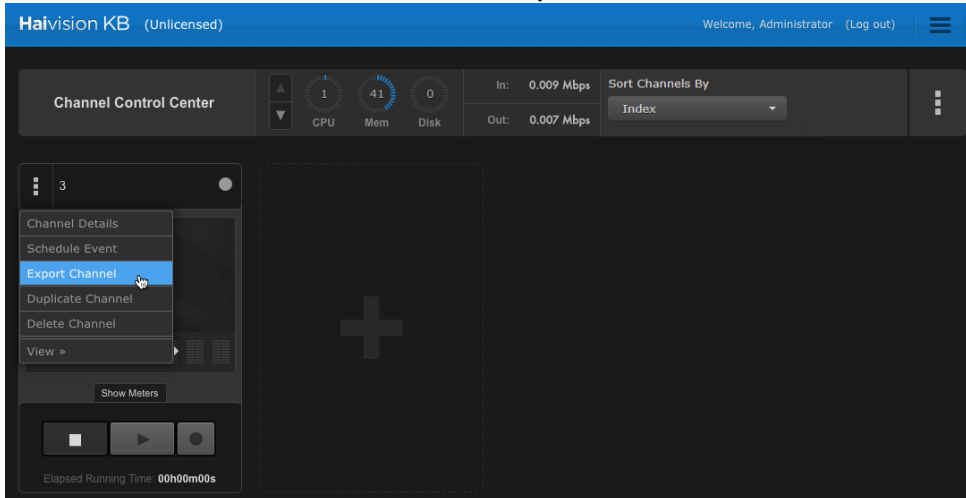
A zip file is downloaded to your system.

> ⚠️ **Note**
>
> If you are using the Safari browser, the default behavior for Safari is to automatically unzip downloaded zip files. Since the import functionality requires a zip file, disable this feature by following these steps:
> 1. In Safari, click **Preferences**.
> 2. Under the **General** tab, uncheck "Open 'safe' files after downloading".
> 3. Re-export the channel.

Channel Window **Channel Control Center**

To export *multiple* channel configurations from the Channel Control Center:

1. Click the ≡ icon, and click **Channel Control Center**.

2. Click the ⋮ in the action bar and select **Export Channel(s)**.
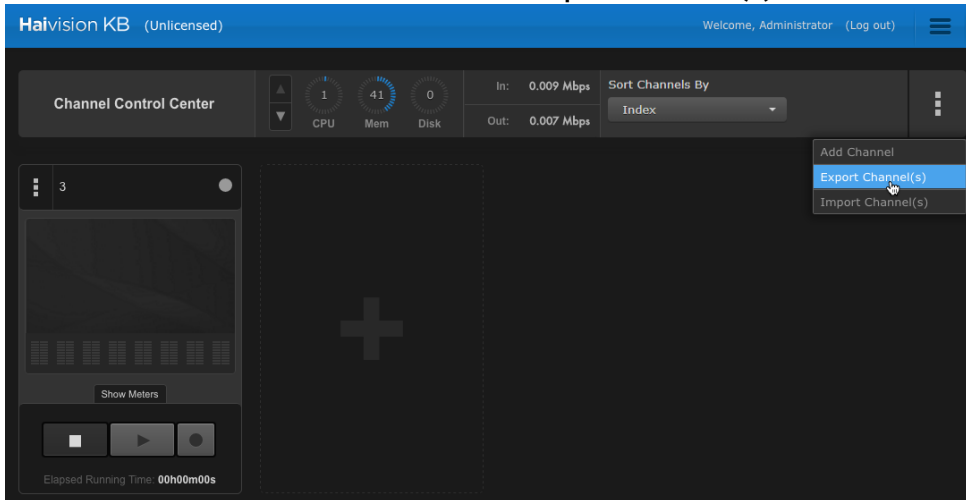
3. When the Export Channels dialog opens, click the checkbox for each channel you want to export. Use the **Select All** checkbox at the top to select all the channels.
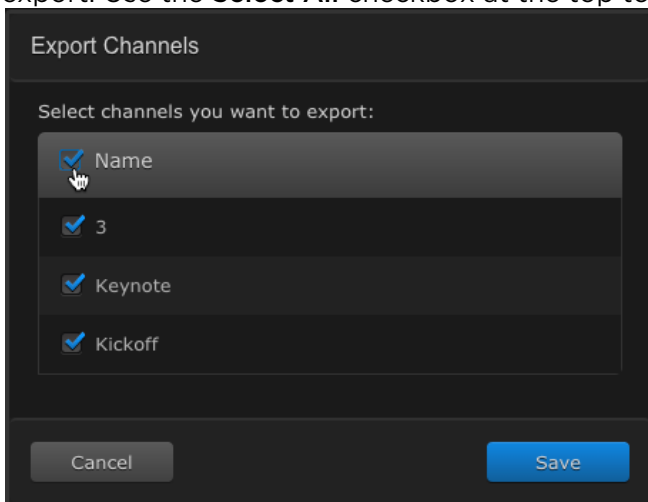
4. Click **Save** button when finished selecting.

A zip file is downloaded to your system.

The configuration and settings for the channel are downloaded as a JSON file in a zip archive. See Channel Configuration File Syntax Reference for more details on the JSON file's syntax.

Sample Channel Configuration Zip File

```
1   {
2     "version": "5.0",
3     "type": "multistream",
4     "label": "3",
5     "description": "",
6     "kulabytepreset": {
7       "input": {
8         "format": {
9           "videoin_enable": "1",
10          "videoin_width": "1920",
11          "videoin_height": "1080",
12          "videoin_framerate": "29.97",
```

```
13          "audioin_enable": "1",
14          "audioin_samplerate": "48000",
15          "audioin_bitspersample": "16",
16          "audioin_channels": "2"
17        },
18        "video_processing": {},
19        "audio_processing": {},
20        "source": [
21          {
22            "parameters": {
23              "port": "4444",
24              "srt_latency": "20",
25              "srt_passphrase": "",
26              "url": "srt://0.0.0.0:4444",
27              "srt_mode": "listener",
28              "buffersize": "5000"
29            },
30            "id": "TS_Source_2",
31            "type": "TS_Source",
32            "audiolanguages": [
33              {
34                "channels": [
35                  0,
36                  1
37                ],
38                "language": {
39                  "id": "eng",
40                  "name": "English",
41                  "comment": ""
42                },
43                "type": "index",
44                "value": "1",
45                "outputStreamNumber": 0
46              }
47            ]
48          },
49          {
50            "type": "Default_Source",
51            "id": "Default_Source_3",
52            "parameters": {},
53            "audiolanguages": []
54          }
55        ]
56      },
57      "preview": {
58        "frame_width": 356,
59        "frame_height": 200,
60        "framerate": 1
61      },
62      "video_encoder": [
63        {
64          "format": {
65            "videoout_enable": 1,
66            "videoout_width": "640",
67            "videoout_height": "360",
68            "videoout_framerate": "25-30"
69          },
70          "processing": {},
71          "encoder": {
72            "type": "AVC_ENC",
73            "id": "HW_AVC_ENC_4",
74            "parameters": {
75              "name": "HW_AVC_ENC_4",
76              "gop_bcount": "2",
77              "bitrate_avg": "936",
78              "preset": "h264_main",
```

```
 79            "level": "auto",
 80            "performance_preset": "7",
 81            "gop_duration": "3000",
 82            "entropy_coding_mode": "cabac",
 83            "gop_fixed": "true",
 84            "gop_max_duration": "3000"
 85          }
 86        }
 87      }
 88    ],
 89    "audio_encoder": [
 90      {
 91        "format": {
 92          "audioout_enable": 1,
 93          "audioout_samplerate": "48000",
 94          "audioout_bitspersample": "16",
 95          "audioout_channels": "2"
 96        },
 97        "processing": {
 98          "audio_channel_config": "0:0|1:1"
 99        },
100        "encoder": {
101          "type": "AAC_ENC",
102          "id": "AAC_ENC_eng_5",
103          "parameters": {
104            "name": "AAC_ENC_eng_5",
105            "langcode": "eng",
106            "langcomment": "",
107            "langname": "english",
108            "bitrate_avg": "128"
109          }
110        }
111      }
112    ],
113    "output": [
114      {
115        "parameters": {
116          "name": "1",
117          "cdn": "[object object]",
118          "serverurl": "rtmp://p.ep76214.i.akamaientrypoint.net/entrypoint",
119          "playbackurl": "",
120          "username": "149226",
121          "password": "akahd4mtl",
122          "authmode": "auto",
123          "ccincaptioninfo": "true",
124          "ccincuepoint": "false",
125          "ccintextdata": "false",
126          "ccinmetadata": "false",
127          "videoencoder": "HW_AVC_ENC_4",
128          "audioencoder": "AAC_ENC_eng_5",
129          "streamname": "stream_1",
130          "agent_id": "kulabyte/5.0"
131        },
132        "type": "RTMP_Sink",
133        "id": "RTMP_Sink_1"
134      },
135      {
136        "type": "File",
137        "id": "File_7",
138        "parameters": {
139          "videoencoder": "HW_AVC_ENC_4",
140          "audioencoder": "AAC_ENC_eng_5",
141          "langnames": "english",
142          "langcodes": "eng",
143          "langcomments": "",
144          "filename": "3-hw_avc_enc_4-aac_enc_eng_5.mp4",
```

```
145            "splitonduration": "false",
146            "fileduration": "14400",
147            "splitonsize": "true",
148            "filesize": "2097152.00"
149          }
150        }
151      ]
152    }
153  }
```

Related Topics

- **Importing Channel Configurations**

Stopping a Channel

A channel can be stopped from either the Channel Control Center Screen or the Channel Details Screens.

Channel Control Center   Channel Details Screen

To stop a channel from the Channel Control Center:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Under the channel you wish to stop, click the ■ button.
3. A "Stopping Channel" status indicator shows in the channel preview window while the encoder is stopping.
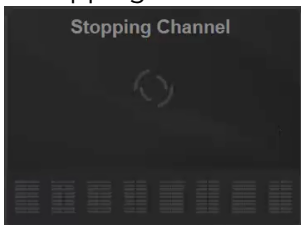
4. Once stopped:
   - The channel preview goes black in the channel preview window.
   - The status indicator changes to gray to indicate that it is stopped.
   - A website notification indicates the channel has successfully stopped.
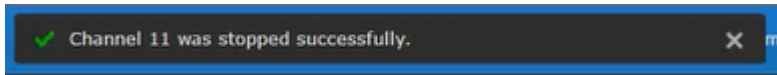
Channel Control Center   **Channel Details Screen**

To stop a channel from the Channel Details screen:

1. Double-click on the channel preview window for the channel you wish to stop to access the Channel Details screen. Alternatively, click ⋮ and click **Channel Details** next to the channel you wish to stop.
2. In the toolbar near the top of the screen, click the ■ button.

3. A "Stopping Channel" status indicator shows in the channel details while the encoder is stopping.

4. Once stopped:
   - The status indicator next to the channel name changes to gray to indicate that it is stopped.
   - A website notification indicates the channel has successfully stopped.
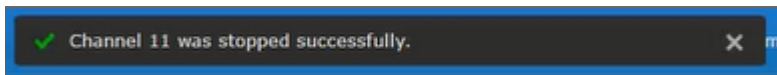
Related Topics

- **Starting a Channel**
- **Forcing a Channel to Stop**

Forcing a Channel to Stop

> ⚠ **Note**
>
> It is not recommended to use this procedure.

The system may take a long time to stop a channel depending on the encoder settings. You may force the channel to stop ungracefully, which immediately stops the channel. Forcing the channel to stop may result in:

- Output that does not include the last few seconds of the input stream prior to stopping the channel
- The destination streaming servers or video player behaving unpredictably

To force a channel to stop:

1. While **Stopping a Channel**, click the **Force Stop** link under the "Stopping Channel" status indicator.
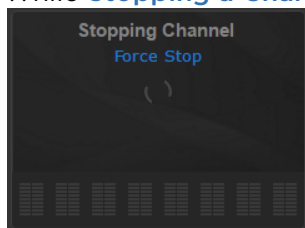
> ⚠ **Note**
>
> The Force Stop link appears only when there is a delay in stopping the channel.

2. Once stopped forcibly:
   - In the Channel Control Center, the channel preview goes black in the channel preview window.
   - The status indicator changes to gray to indicate that it is stopped.

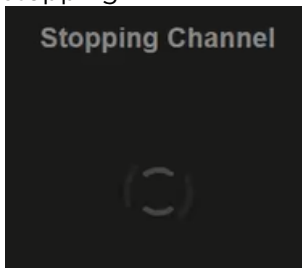- A website notification indicates the channel has successfully stopped.

✓ Channel 11 was stopped successfully.   ✕

Related Topics

- **Stopping a Channel**

Deleting a Channel

> ℹ **Note**
>
> It is not possible to recover a deleted channel.

Channels can be deleted from either the individual channel windows or from the Channel Control Center's action bar.

Channel Window   Channel Control Center

To delete individual channels from the Channel window:

1. Click the ☰ icon and click **Channel Control Center**.
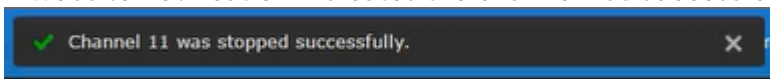2. Next to the channel you wish to delete, click the ⋮ icon and click **Delete Chnnel**.
3. In the popup confirmation window, click **Delete** to confirm the deletion.

The deleted channel is removed from the Channel Control Center.

Channel Window   **Channel Control Center**

To delete individual or multiple channels from the Channel Control Center's action bar:

1. Click the ☰ icon and click **Channel Control Center**.
2. Click the ⋮ in the action bar and click **Delete Channel(s)**.
3. When the Delete Channels dialog opens, click the checkbox for each channel you want to delete. Use the Select All checkbox at the top to select all channels.
4. Click the **Delete** button.

The selected channels are removed from the Channel Control Center.

Related Topics

- **Channel Control Center Screen**

Scheduling Events

> ℹ **Note**
>
> A channel must exist prior to scheduling an event.

Event times are based upon the browser used to access the system. For instance, suppose the encoder is located in the Central Time Zone and you are accessing the system from the Eastern Time Zone. If an event begins at 1 PM CST (13:00 CST) local to the encoder, schedule the event for 2 PM EST (14:00 EST) to account for the one hour time difference between time zones.

> **❗ Important**
>
> The time and time zones are configured in the operating system. The system relies on these time settings to coordinate across time zones. For proper scheduling, ensure the time for the local time zone is accurate on both the interface and the KB Encoder/Transcoder. Contact your system administrator if you need assistance.

To access the Event Schedule screen:

1. Click the ☰ icon at the top right of the screen.
2. Select the **Event Schedule** listing from the dropdown menu.

Related Topics

- **Event Schedule Screen**

Creating an Event

> **❗ Important**
>
> The time and time zones used in the interface are configured by the browser accessing the encoder. For proper scheduling, ensure the time for the local time zone is accurate on both the interface and the KB Encoder. Contact your system administrator if you need assistance. For details on automatically setting the time on the encoder using an NTP server (recommended), see **Configuring the Network**, or for manually setting the time on the encoder via the Console UI, see **Using the Console UI with Haivision Hardware**.

> **❗ Important**
>
> Licensing and system resources must be considered when scheduling events as every event is a channel that must have a license allocated for it.

An event can be created from the Channel Control Center screen, Channel Details screen, or the Event Schedule screen.

Channel Control Center   Channel Details Screen   Event Schedule Screen

To create a video session event via the **Channel Control Center Screen**:

1. Click the ☰ icon and select **Channel Control Center**.
2. Locate the desired Channel where you want to schedule an event.
3. Click the corresponding ⋮ menu and select **Schedule Event**.
4. In the Schedule Event for *<channelName>* Channel dialog, enter the name for the event.

> ✅ **Tip**
>
> It is a good practice not to include spaces or special characters in the event name.

5. In the Start text box, click the 🗓 icon and select the start date and time for the event. To start the event immediately, leave the default time as is.
6. In the End text box, click the 🗓 icon and select the stop date and time for the event.
7. To record an event, click the **Start Recording** check box.
8. For recurring events, click the **Recurring** check box and checkmark which days of the week you want the event to recur. See **Scheduling Recurring Events** for details.
9. Click the **Save** button.

Channel Control Center   **Channel Details Screen**   **Event Schedule Screen**

To create a video session event via the Channel Details page (see **Accessing Channel Details**):

1. On the Channel Details page, click the 🕓 icon to access the Channel Event Schedule page.
2. Click the ➕ **Event** button.
3. In the Schedule Event for *<channelName>* Channel dialog, enter the name for the event.

> ✅ **Tip**
>
> It is a good practice not to include spaces or special characters in the event name.

4. In the Start text box, click the 🗓 icon and select the start date and time for the event. To start the event immediately, leave the default time as is.
5. In the End text box, click the 🗓 icon and select the stop date and time for the event.
6. To record the event, click the **Start Recording** check box.
7. For recurring events, click the **Recurring** check box and checkmark which days of the week you want the event to recur. See **Scheduling Recurring Events** for details.
8. Click the **Save** button.

Channel Control Center   **Channel Details Screen**   **Event Schedule Screen**

To create a video session event via the system's **Event Schedule Screen**:

1. Click the ☰ icon and click **Event Schedule**.
2. Click the ➕ **Add** button.
3. > ✅ **Tip**
   >
   > It is a good practice not to include spaces or special characters in the event name.

4. Select the channel for the event.
5. In the Start text box, click the 🗓 icon and select the start date and time for the event. To start the event immediately, leave the default time as is.
6. In the End text box, click the 🗓 icon and select the stop date and time for the event.
7. To record the event, click the **Start Recording** check box.
8. For recurring events, click the **Recurring** check box and checkmark which days of the week you want the event to recur. See **Scheduling Recurring Events** for details.
9. Click the **Save** button.

After the event is scheduled:

- A website notification appears indicating whether the event has been created successfully.
- In the Channel Control Center, an overlay of the details for the next scheduled event is shown in the corresponding Channel window.
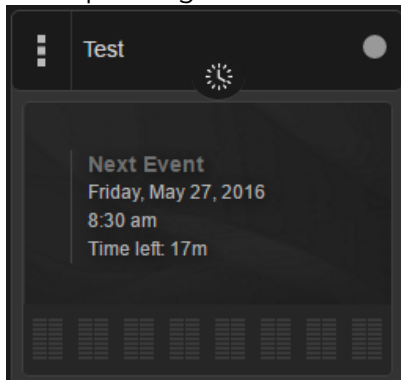
Related Topics

- **Channel Control Center Screen**
- **Event Schedule Screen**
- **Channel Details: Channel Event Schedule Screen**
- **Deleting a Scheduled Event**

Editing a Scheduled Event

An event can be edited on either the Channel Details screen or the Event Schedule screen.

Channel Details Screen   Event Schedule Screen

Channels Detail Screen

To edit a scheduled video session event via the Channel Details screen (see **Accessing Channel Details**):

1. On the Channel Details screen, click the ⟳ icon menu to access the Channel Event Schedule page.
2. Locate the event you wish to edit and click either the name of the event or the ✎ edit icon.
3. In the Schedule Event for *<channelName>* Channel popup, edit the event details and click **Save**.

> **ⓘ Note**
>
> If the event is currently running, only the name and stop time can be edited.

Channel Details Screen   **Event Schedule Screen**

Event Schedule Screen

To edit a scheduled video session event via the Event Schedule screen:

1. Click the ☰ icon and click **Event Schedule**.

2. Locate the event you wish to edit and click on the name of the event or the ✎ edit icon.
3. In the Schedule Event for *<channelName>* Channel popup, edit the event details and click **Save**.

> **ⓘ Note**
>
> If the event is currently running, only the name and stop time can be edited.

After the event is edited:

- A website notification appears indicating whether the event has been updated successfully.
- In the Channel Control Center, the overlay of the details for the next scheduled event is shown in the corresponding Channel window.

Related Topics

- **Event Schedule Screen**
- **Channel Details: Channel Event Schedule Screen**

Changing End Time on a Running Event

To edit a scheduled video session event to change the end time:

1. Click the ☰ icon and click **Event Schedule**.
2. Locate the event you wish to edit and click on the name of the event or the ✎ edit icon.
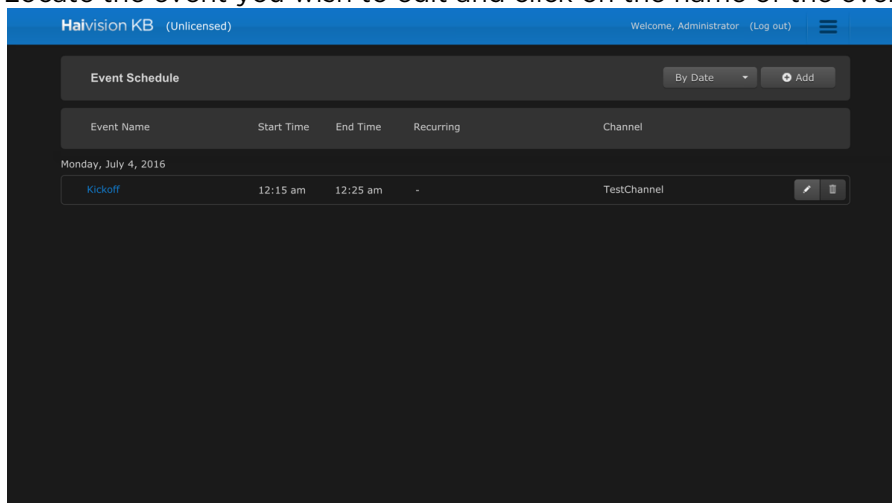
3. In the Schedule Event for *<channelName>* Channel popup, edit the End details for the event and click **Save**.

Related Topics

- **Event Schedule Screen**

Deleting a Scheduled Event

An event can be deleted on either the Channel Details screen or the Event Schedule screen.

Channel Details Screen   **Event Schedule Screen**

To delete a scheduled video session event via the Channel Details page (see **Accessing Channel Details**):

1. On the Channel Details page, click the ⟳ icon to access the Channel Event Schedule page.
2. Locate the event you wish to delete and click the 🗑 icon.
3. In the popup, confirm deletion of the channel by clicking the **Delete** button.

Channel Details Screen   **Event Schedule Screen**

To delete a scheduled video session event via the **Event Schedule Screen**:

1. Click the ☰ icon and click **Event Schedule**.
2. Locate the event you wish to delete and click the 🗑 icon.
3. In the popup, confirm deletion of the channel by clicking the **Delete** button.

After the event is deleted:

*   A website notification indicates whether the event has been deleted successfully.
*   In the Channel Control Center, the overlay of the details for the next event is removed if there are no other scheduled events.

Related Topics

*   **Channel Details: Channel Event Schedule Screen**
*   **Event Schedule Screen**

Scheduling Recurring Events

An event can be scheduled to start on specific days of the week by ticking the **Recurring** check box as described in **Creating an Event**. Notes regarding recurring events:

*   If the start day is not specified as one of the recurring days, the event starts at the selected time on the next recurring day.
*   The start/end day may not match the recurring days.
*   If recurring is enabled, it is not possible to schedule an event with 24 hours or longer duration.
*   For recurring events that span multiple days (e.g., start on Saturday night and end Sunday morning), set the recurring day to the start day. Do not include the day the event ends.

Related Topics

*   **Creating an Event**
*   **Channel Details: Channel Event Schedule Screen**
*   **Event Schedule Screen**

Viewing Scheduled Events

A listing of the scheduled events is available from the Event Schedule screen.

To view the scheduled events:

1. Click the ☰ icon and click **Event Schedule**.

    The event listings are displayed on the screen by date (default).

To sort the listings by Channel:

1. In the Event Schedule action bar, click the **By Date** dropdown menu.
2. Select the **By Channel** option.

   The event listings are displayed grouped by channel.

Related Topics

- **Event Schedule Screen**

Working with Recordings

> ⓘ **Important**
>
> While any KB user on the system can download recordings, only haioperator and haiadmin accounts are able to delete them.

To access the Recordings screen, click the ☰ **icon and select Recordings.**

Related Topics

- **Recordings Screen**
- **Downloading Recordings**
- **Exporting Recordings**
- **Deleting Recordings**

Start Recording

A recording can be started in either the **Channel Control Center Screen** or on the **Channel Details Screens**. It may also be started immediately when a scheduled event begins; see **Creating an Event** for details of starting a recording with a scheduled event.

Channel Control Center   Channel Details Screen

To start recording from the Channel Control Center:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Under the channel you wish to record, click the ● button.
3. If the stream is currently:

   Playing
   A website notification appears indicating the recording has successfully started recording and "REC" is overlayed onto the bottom left of the channel preview window.

   ✓ Recording of Test was started successfully.   ✕
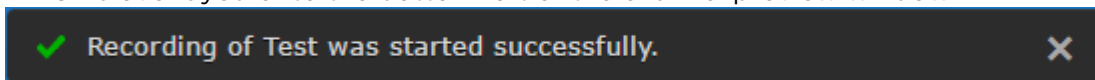
   Stopped
   A website notification appears indicating the recording has successfully been armed. When the channel is started, the recording starts automatically.

   ✓ Recording of Test was armed successfully.   ✕

Channel Control Center   **Channel Details Screen**

Channel Control Center   Channel Details Screen

To stop recording from the Channel Control Center:

1. Click the ☰ icon, and click **Channel Control Center**.
2. Under the channel you wish to stop recording, click the 🔴 button.
3. Once clicked:
   - The 'REC' overlay on the bottom left of the channel preview window is removed.
   - A website notification indicates recording has successfully stopped.

> ✔ Recording of Test was stopped successfully.   ✕
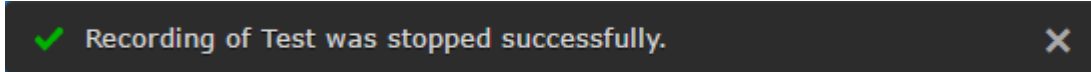
Channel Control Center   **Channel Details Screen**

To stop recording from the Channels Details screen:

1. Double-click on the channel preview window for the channel you wish to stop recording to access the Channel Details screen. Alternatively, click ⋮ and click **Channel Details** next to the channel you wish to stop recording.
2. In the toolbar near the top of the screen, click the 🔴 button.
3. Once clicked:
   - A website notification indicates recording has successfully stopped.

> ✔ Recording of Test was stopped successfully.   ✕
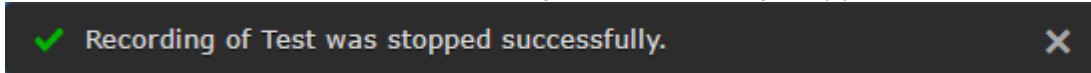
   - If you are on the Channel Status screen, the Recordings section shows the stream is no longer recording. See **Recordings Status** for details.

Related Topics

- **Start Recording**
- **Recordings Status**
- **Recordings Screen**
- **Working with Recordings**
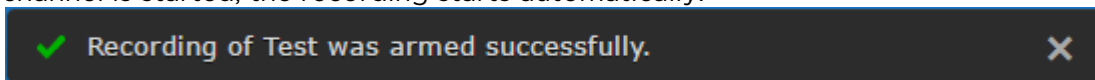- **Downloading Recordings**
- **Exporting Recordings**
- **Deleting Recordings**

Exporting Recordings

> ❶ **Important**
>
> Before exporting recordings, you will need to configure the upload information in the Assets section of the Administration screen. See **Configuring File Uploads** for specifics.

To export a recording:

1. Click the ☰ icon and select **Recordings**.
2. On the Recordings screen, click the checkbox beside the recording(s) to select the ones you are interested in exporting. Use the **All** checkbox to quickly select all the listings at once.
3. Click the **Actions** menu and select the **Export** option.

4. When the Export Selected File(s) dialog appears, choose the upload target from the dropdown menu.
5. Verify the files selected and then click the **OK** button.
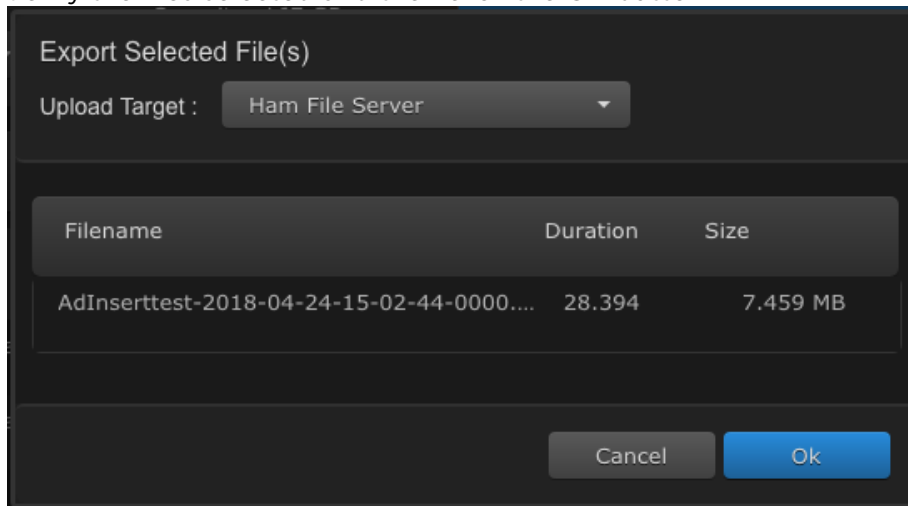
6. A **File Transfer Progress** button appears on the KB Drive bar. Click this button to open the Files(s) Transfer Progress window which lists the files being uploaded, the duration of the upload, and status (current percentage of the file uploaded).

> ✅ **Tip**
>
> Use the File(s) Transfer Progress window to *cancel* individual uploads or to *dismiss all* uploads at once.

Related Topics

- **Configuring File Uploads**
- **Recordings Screen**
- **Working with Recordings**
- **Downloading Recordings**
- **Deleting Recordings**

Downloading Recordings

To download a recording:

1. Click the ☰ icon and click **Recordings**.
2. On the Recordings screen, click the checkbox beside the recordings you want to download. Use the **All** checkbox to quickly select all recordings.
3. Click the **Actions** menu and click the **Download** option.

4. When the Download Selected File(s) dialog appears, verify the information and click the **Download** button.

> **Download Selected File(s)**
>
> **Filename(s)**
>
> 1080p29-0000.mp4
>
> Cancel   Download
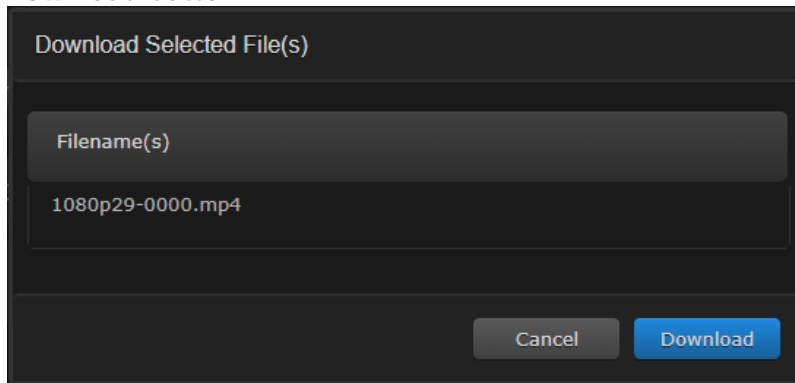
The selected recordings are downloaded to your computer. If you want to cancel a download in progress, use your browser controls to do so.

> **ⓘ Note**
>
> The Download action downloads the recording, as well as the corresponding files (such as the SRT closed captions files). Downloads are limited to five recordings at a time.

Related Topics

- **Recordings Screen**
- **Working with Recordings**
- **Exporting Recordings**
- **Deleting Recordings**

Deleting Recordings

> **⚠ Caution**
>
> The Delete action removes the selected files from your KB drive. There is no confirmation to double check that this is the action you want to take. Please verify the selected files carefully before clicking the **Delete** button.

To delete a recording:

1. Click the ☰ icon and select **Recordings**.
2. On the Recordings screen, click the checkbox beside the recording(s) to select the ones you are interested in deleting. Use the **All** checkbox to quickly select all the listings at once.
3. Click the **Actions** menu and select the **Delete** option.
4. When the Delete Selected File(s) dialog appears, verify the files selected and then click the **Delete** button. There is no dialog to confirm. Please verify your selection carefully before clicking

Delete.
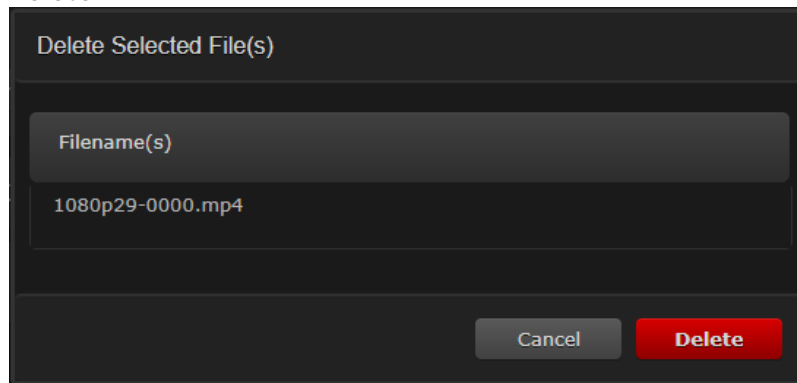
The selected recordings are deleted from the KB Drive.

Related Topics

- Recordings Screen
- Working with Recordings
- Downloading Recordings
- Exporting Recordings

Administering the KB Encoder

The following content explains how to administer the system and manage users.

Topics Discussed

- Viewing System Activity
- Accessing Reports (Logs)
- Remote Management via Haivision Connect
- Configuring Alerts
- Configuring Assets
- Licensing the KB Encoder
- Configuring the Network
- Configuring the WiFi Access Point
- Customizing the Stand-By Image
- Defining Overlay Images
- Acquiring the MAC Address
- Supplying KB with a TLS/SSL Security Certificate
- Updating the KB Encoder
- Managing Users

Viewing System Activity

The following system statistics can be monitored in the System Activity dashboard:

- System Status
  - CPU Usage
  - Memory Usage
  - System Uptime
  - KB Version
  - Model
  - Service Tag
- Disk Space
  - Video Cache
  - Operating System
  - Haivision Software
  - System Storage
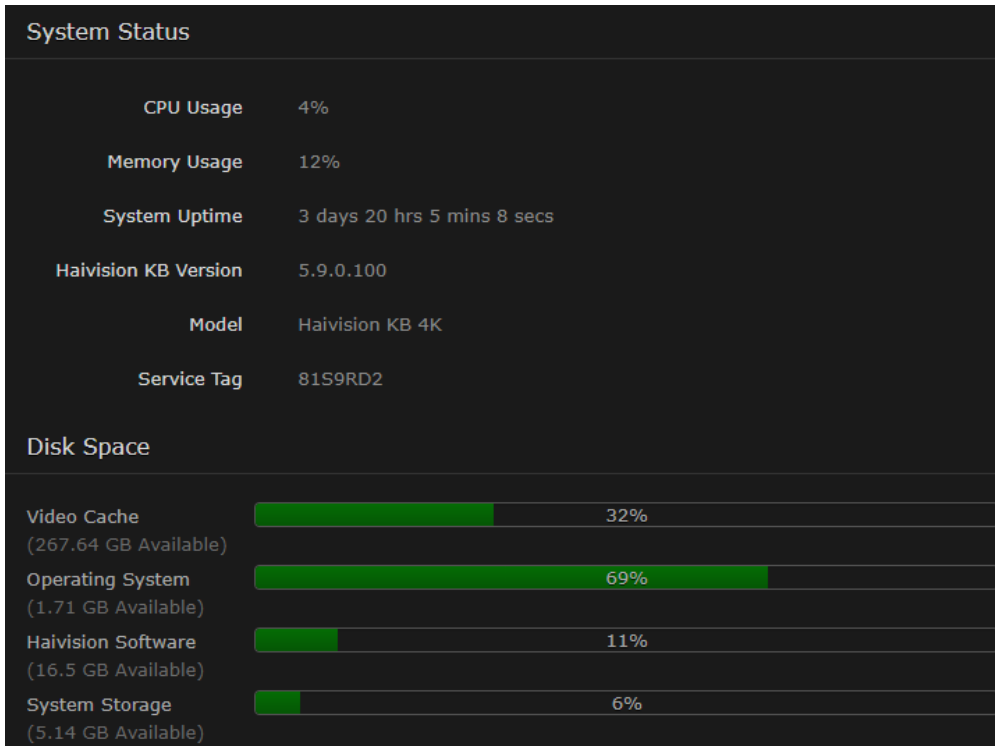
To view the system activity dashboard:

1. Click the ☰ icon and click **Administration**. The System Activity dashboard is the default view for the Administration screen.
2. Otherwise, in the sidebar under Dashboards, click **System Activity**.

In addition to numerical values, the dashboard provides color-coded bars to alert you when disk space is reaching usage thresholds:

Bar Color	Disk Space Used
🟢 Green	0–74%
🟡 Yellow	75–90%
🔴 Red	90–100%

Related Topics

- **Administration Screen**

Accessing Reports (Logs)

> ⓘ **Important**
>
> Log files can contain sensitive data and should be appropriately protected. Follow appropriate security guidelines for user credentials (logins and passwords).

The following log files are available:

Log Name	Description
All Logs	All system and application logs.
System Messages	Operating system messages. Includes /var/log/messages.
Application	Log data from the KB Encoder processes. Includes /opt/haivision/var/log/.

Accessing Logs

To access the logs:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Dashboards, click **Reports**.
3. Click the ⟳ button next to the log file type you wish to download. The chosen log file downloads according to your browser settings.

The compressed .zip file consists of a number of text log files with descriptive filenames to assist you in identifying the appropriate file for the information you seek.

If the standard logs do not contain the information you need, you can enable *Diagnostic Logging*.

> **ⓘ Note**
>
> Log files are also available to view in the Console UI; see **Using the Console UI with Haivision Hardware** for details.

Diagnostic Logging

As an aid in troubleshooting, you can enable/disable **Diagnostic Logging** as needed. Diagnostic Logging adds more verbose entries into the logs and provides additional information which can be useful for diagnosing problems.

> **⚠ Caution**
>
> - Due to the impact that Diagnostic Logging has on overall system performance, Haivision recommends that you only enable this feature temporarily.
> - Diagnostic log files are not deleted automatically and can eventually consume all available disk space if left enabled.
> - Log files can contain sensitive data and should be appropriately protected. Follow appropriate security guidelines for user logins and passwords.

Enabling/Disabling Diagnostic Logging

To enable or disable diagnostic logging:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Dashboards, click **Reports**.
3. Slide the Enable Diagnostic Logging switch to ON or OFF.

Diagnostic Logs Slider
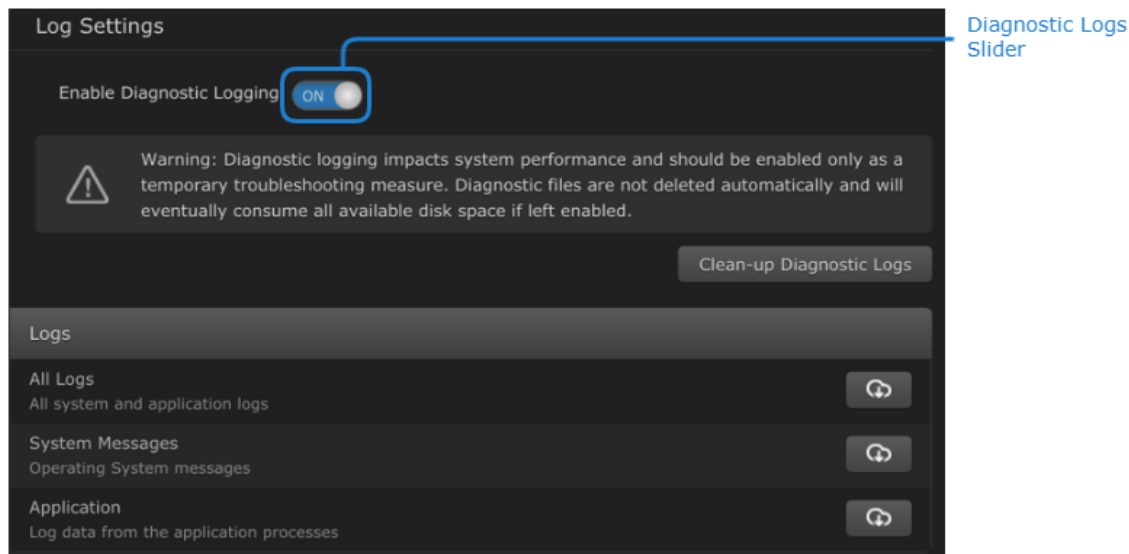
Clearing Diagnostic Logs

Additionally, you can delete diagnostic logs to improve system performance.

To do this:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Dashboards, click **Reports**.
3. Click the **Clean-up Diagnostic Logs** button.

Related Topics

- Administration Screen
- Using the Console UI with Haivision Hardware

Remote Management via Haivision Connect

To enable remote management of your KB encoder via Haivision Connect:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Remote Managerment, click **Haivision Connect**.
3. Click the Enable toggle to **On**.

The Haivision Connect connection status and pairing appears and you can now pair your KB encoder with Haivision Connect.

Pairing KB with Haivision Connect

To pair your KB encoder with Haivision Connect:

1. Open a new browser tab and log in to the Haivision Connect website.
2. Click **Organization**.
3. Click the ☰ icon and click **Devices**.
4. Click the ⊕ icon, and the Add Device dialog appears.

5. Click the **Next** button.
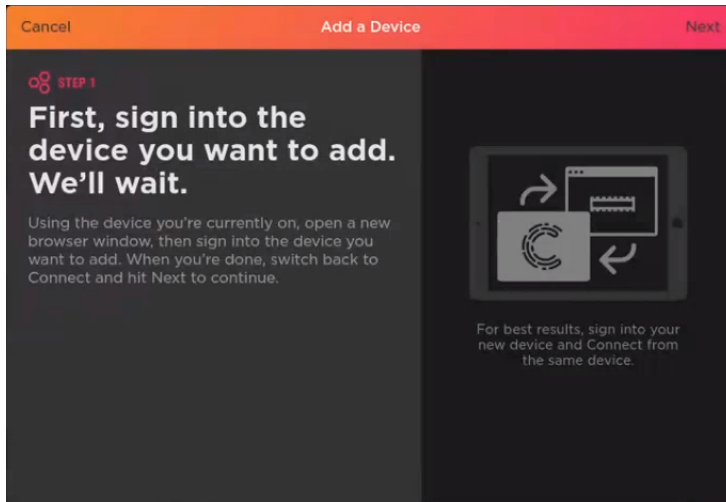
6. Click the **Copy Pairing Code** button.
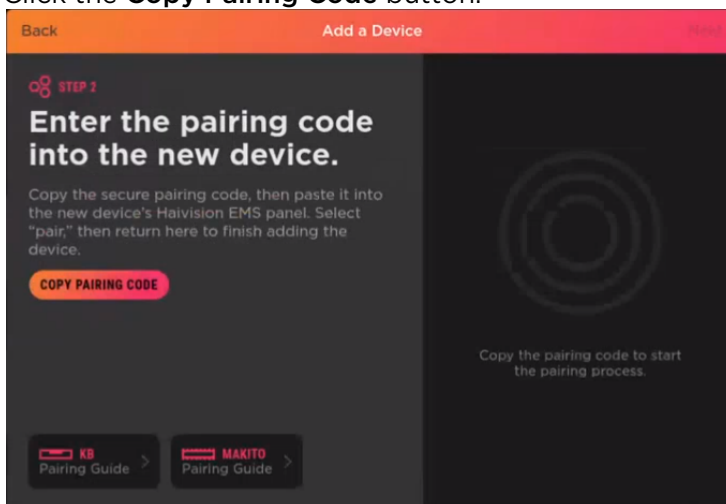
7. Switch to your KB browser tab, and paste the pairing code into the Passcode textbox.
8. Click the **Pair** button.
9. The KB shows the pairing is complete:
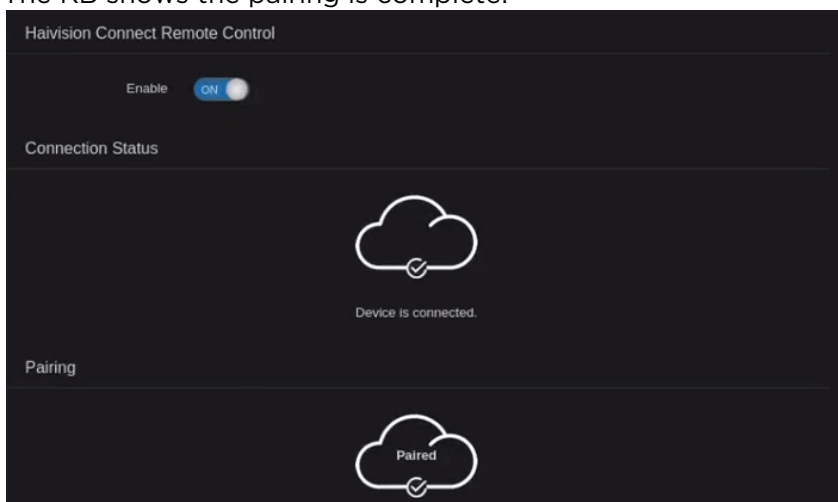
10. Switch back to the Havision Connect browser tab to complete adding your KB.
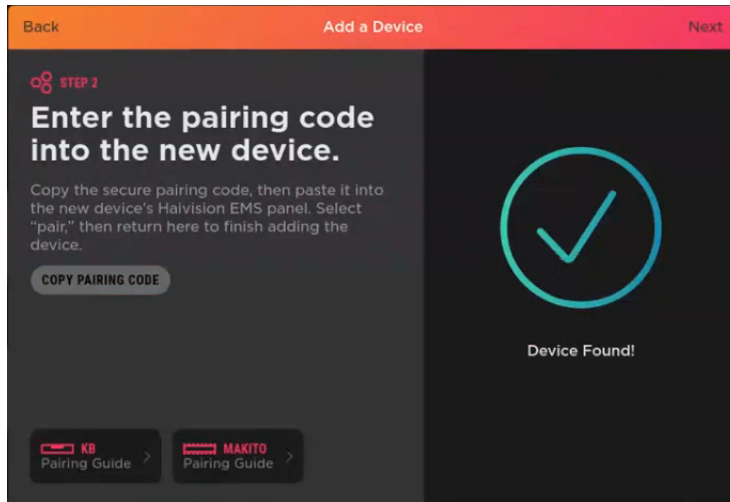
Viewing Haivision Connect-Created Channels on KB

If a route is created in Haivision Connect with KB as an input and the route is started, the channel appears on the KB Channel Control Center screen. However, there are some differences between channels created within KB, as noted in the following image:

- An Haivision Connect indicator appears at the top of the channel window.
- The channel controls are not present, so the channel cannot be stopped, started, or recorded using the KB web interface.
- In the Channel Details screen, the More Options menu is disabled since exporting or renaming an Haivision Connect-controlled channel is not possible.
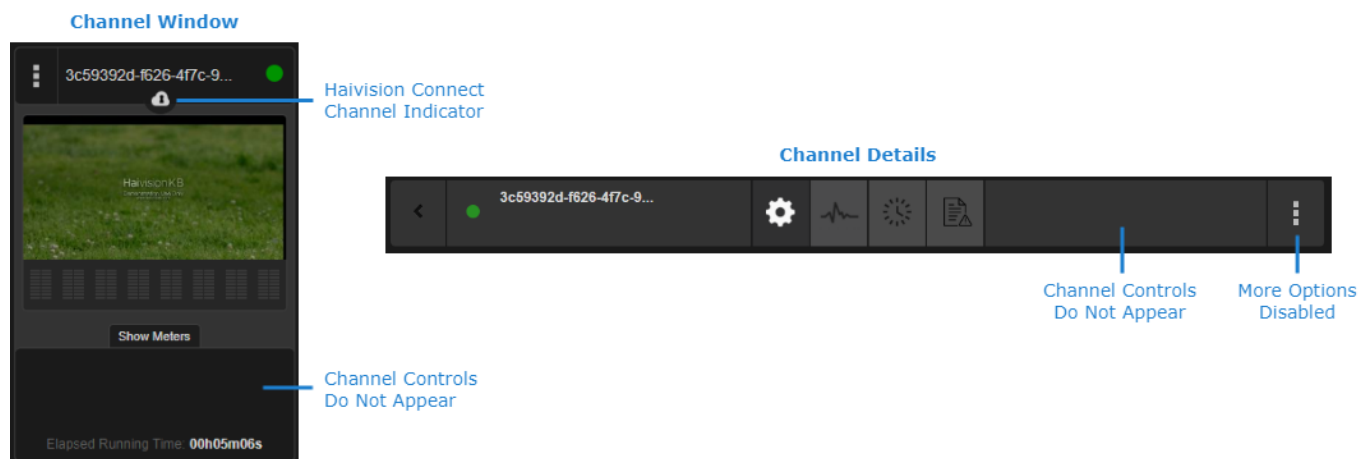
Configuring Alerts

System alerts are designed to warn you when vital resources reach specified thresholds, so that proper actions can be taken to avoid disruption in service.

There are two types of system alerts:

- Threshold Alerts – occur when a user-defined percentage of resource usage is attained.
  - CPU usage exceeds a threshold (Default is 90%).
  - GPU usage exceeds a threshold (Default is 90%).

- • Memory usage exceeds a threshold (Default is 80%).
  - • Free disk space falls below a threshold (Default is 10 GB).
- • Runtime Alerts – occur for specified runtime events such as, connection or disconnection, overflow, error, and so forth.

The Alerts pane within the Administration screen provides a listing of the available alerts including the alert name and description, editable text fields where you specify threshold values, and sliders to enable/disable each alert.
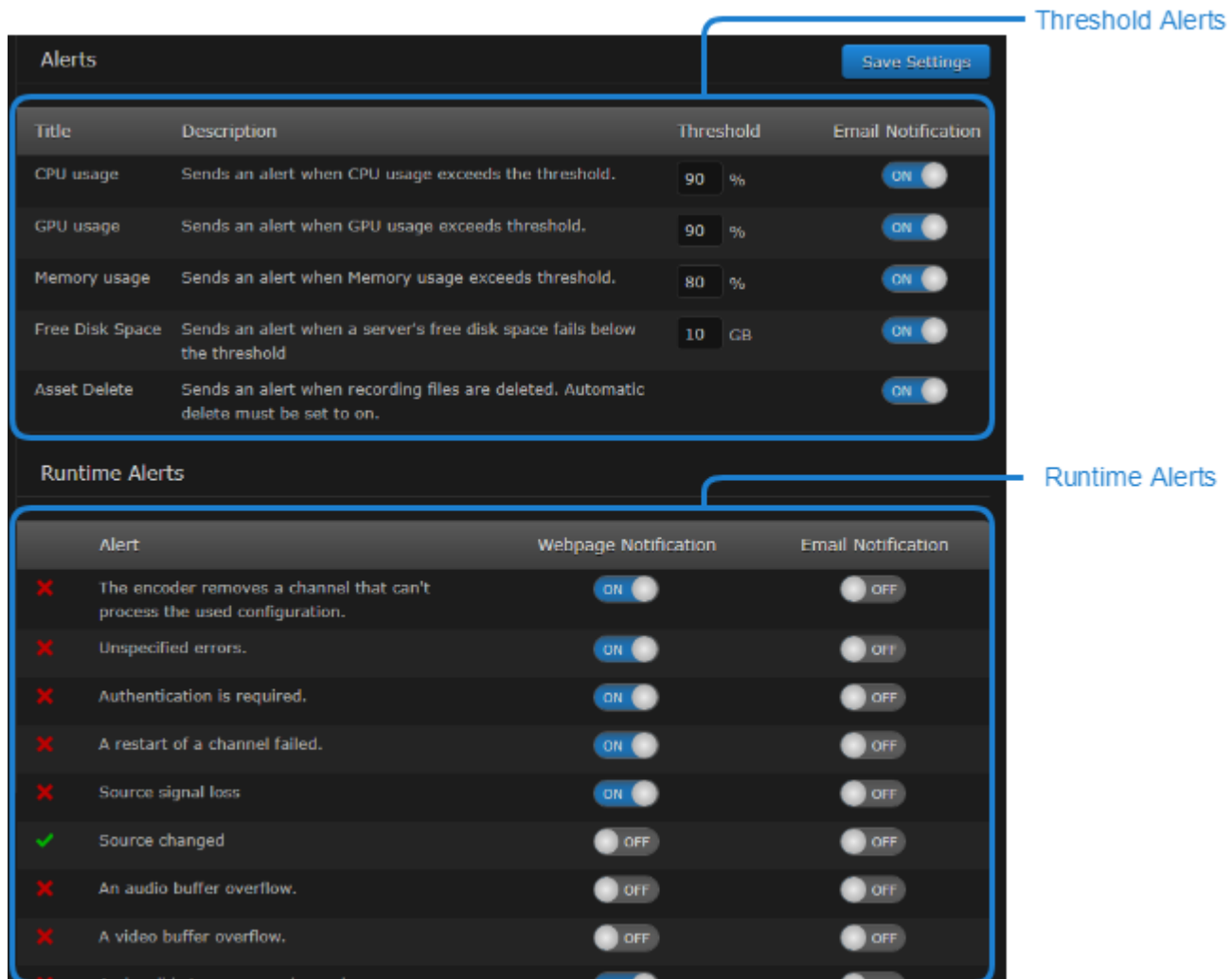
Related Topics

- • Administration Screen

Configuring Threshold Alerts

The system monitors resources and notifies you when a threshold has been exceeded.

1. Click the ☰ icon and click **Administration**.
2. On the sidebar under Configuration, click **Alerts.** The *Threshold* alerts appear at the top of the view pane.

3. To change the threshold value that triggers an alert, enter a new value in the associated **Threshold** field.
4. To enable/disable email notification of a Threshold alert, click the **Email Notification** slider control at the end of the threshold listing to toggle between ON/OFF.
5. When finished, click the **Save Settings** button.

Related Topics

- **Configuring Alerts**
- **Website Notifications**
- **Enabling Email Notifications**
- **Accessing Channel Details**

Enabling Runtime Alerts

As described in Website Notifications, the system alerts you with popups when specified runtime events occur, such as connection, disconnection, overflow, and error. Email notifications can also be enabled for each of these runtime alerts (see Enabling Email Notifications).

> ℹ **Note**
>
> All runtime alerts are logged in the Notification Log tab on the appropriate Channel Details screen.

To enable runtime alerts:
1. Click the ≡ icon and click **Administration**.
2. On the sidebar under Configuration, click **Alerts**. The Runtime Alerts are located beneath the Threshold Alerts in the view pane.
3. To enable/disable notification for these alerts, click the appropriate slider control for the types of notification you want to receive:
   - Webpage Notification – turn ON to receive a message at the top of the screen. See Website Notifications for details.
   - Email Notification – turn ON to receive an email sent to the recipients specified. See Enabling Email Notifications for more information.
4. When finished, click the **Save Settings** button.

Related Topics

- **Configuring Alerts**
- **Website Notifications**
- **Enabling Email Notifications**
- **Accessing Channel Details**

Enabling Email Notifications

To enable email notifications of triggered alerts:

1. Click the ≡ icon and click **Administration**.
2. In the sidebar under Configuration, click **Notifications**.
3. Click the **Enable Email** checkbox.
4. Provide your email settings for the fields:
   - Mailer Host – the SMTP mail server.
   - Mailer Port – the SMTP mail port.
   - Mailer Address – the email address to be used as the sender for the alert emails.
   - Mailer Account – the username for the sender for the alert emails.

- Mailer Password – the password for the mailer account (above) to be used as the sender for alert emails.
- Recipients for Notifications – a comma-delimited list of email addresses to which alert emails should be sent.

5. Select from the **Connection Security** dropdown menu the appropriate setting: STARTTLS (default) or SSL/TLS.

> ℹ️ **Note**
>
> The Connection Security value is used in the "secure" value of the nodemailer transport options, see **https://nodemailer.com/smtp/**.
> - STARTTLS === false
> - SSL/TLS === true

6. Click the **Test Settings** button to verify that the settings you provided are accurate. A test email is sent to the recipient list.

> ❗ **Important**
>
> Correct any entries that are not accurate, as they can cause the web server to be unresponsive when alerts are triggered.

7. When finished, click the **Save Settings** button.

Related Topics

- **Configuring Alerts**
- **Configuring Threshold Alerts**

Configuring Assets

Topics

- **Managing Recording Disk Space**
- **Configuring File Uploads**

Managing Recording Disk Space

The KB software contains an option to automatically delete the oldest recordings when the disk space crosses a user-defined threshold.

To set auto-delete and manage disk space:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Configuration, click **Assets**.
3. Set the **Delete on Disk Full** slider to ON (default). To disable the feature, set the slider to OFF.
4. If Delete on Disk Full is enabled, enter the threshold value (in gigabytes) for when automatic deletion of recordings occurs. When the free disk space drops below this amount, the oldest recording is deleted.
5. Click the **Save Settings** button to save your changes.

Related Topics

- **Administration Screen**

Configuring File Uploads

Prior to uploading recordings, specify the upload configuration. This involves setting the destination FTP/FTPS server and specifying any bandwidth limitations.

To configure file uploads:

1. Click the ☰ icon and click **Administration**.
2. In the sidebar under Configuration, click **Assets**.
3. Locate the File Upload Configuration section**.**
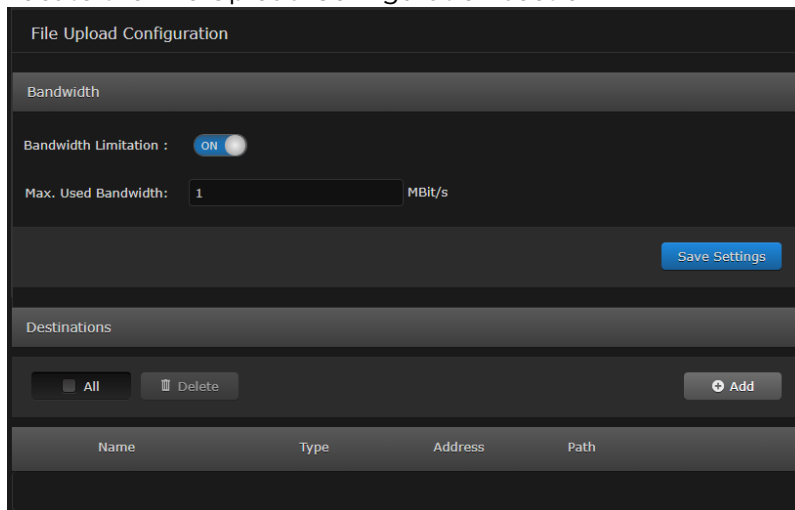
4. Under Bandwidth, if appropriate, slide the **Bandwidth Limitation** slider to ON and specify the maximum bandwidth usage in MBits per second to ensure there is no streaming congestion during upload.
5. Click the **Save Settings** button.
6. Under Destinations, click the ⊕ **Add** button to add a target FTP or FTPS server destination.
7. When the Add File Upload Destination dialog opens, provide the requested information regarding your server destination for the upload.

> **✓ Tip**
> - Be sure to check the **Untrusted Certificates** checkbox to bypass the warning messages associated with sites that do not have a certificate.
> - During the file upload procedure, by default the file includes a `.part` extension at the destination. When the upload completes, the file is renamed without the `.part` extension. If uploads fail at this renaming step, check the **Use filename during upload** checkbox.
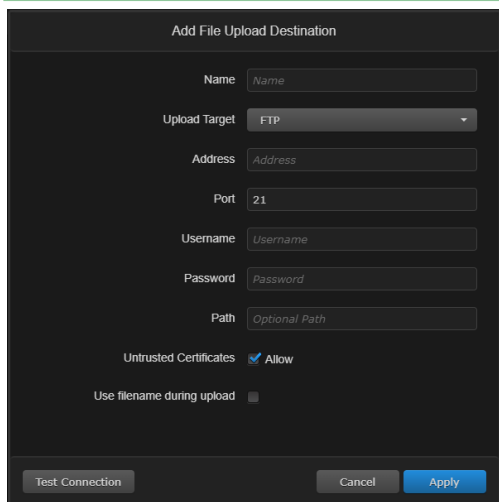
8. Click **Test Connection** to verify that the information was entered correctly and the server is accessible.
9. If all is well, click the **Apply** button to finish adding the server destination.

To remove a File Upload Destination:

1. Click the ☰ icon and click **Administration**.
2. In the sidebar under Configuration, select **Assets**.
3. Locate the File Upload Configuration section.
4. Under Destinations, scroll the listings and click the associated checkbox for each server you wish to delete.
5. Click the **Delete** button.
6. When prompted to verify that you want to delete the selected destinations, click the **Delete** button.

Related Topics

- [Exporting Recordings](#)

Licensing the KB Encoder

The banner at the top of the screen indicates whether the KB system is licensed or unlicensed.

- If the system is unlicensed, "Unlicensed" shows in the banner as follows:

- If the system is licensed, "Unlicensed" does not appear in the banner.

> ⊙ **Important**
>
> Please contact Haivision Technical Support to obtain a valid license key if needed. Without a valid license key, a Haivision watermark appears on the output video stream. When contacting Haivision Technical Support for a license key, you need the MAC address of the first network interface. See **Configuring the Network** for retrieving the MAC address.

Related Topics

- **Adding a License**
- **Touring the Interface**

Adding a License

To license the KB Encoder:

1. Click the ☰ menu and select **Adminstration**.
2. In the sidebar on the left under Configuration, click **Licensing**.
3. Click the ⊕ **License** button to add a license.
4. Enter your License Key and click **Add**.

> ⓘ **Note**
>
> If "(Unlicensed)" still appears in the banner after a valid license has been applied, refresh the page to remove it.

> ⊙ **Important**
>
> Reboot your system to remove the Haivision watermark from the output streams.

Related Topics

- **Administration Screen**

Configuring the Network

The Network Configuration settings allow you to specify the server hostname, DNS servers, NTP server, search domains, and the default interface. You can also configure advanced settings, such as multiple network interfaces, NIC bonding, and static routes.

To configure the network:

1. Click the ☰ icon and select Administration.
2. Click **Network** in the sidebar menu. The available General settings are listed in the view pane along with Interfaces and Static Routes.
3. Fill in the fields as appropriate. See **Network Settings** for information on the specific fields.
4.
   > ℹ️ **Note**
   >
   > Interfaces can be prefixed with em, enp, eth, etc. depending on the naming scheme used for the physical interface.

5. To add a bond interface, see **Creating a Bond Interface** for more information.
6. To add a Static Route, see **Adding a Static Route** for more information.
7. Click the **Save Settings** button.
8. Click the **Reboot** button to have your network configuration changes take effect.
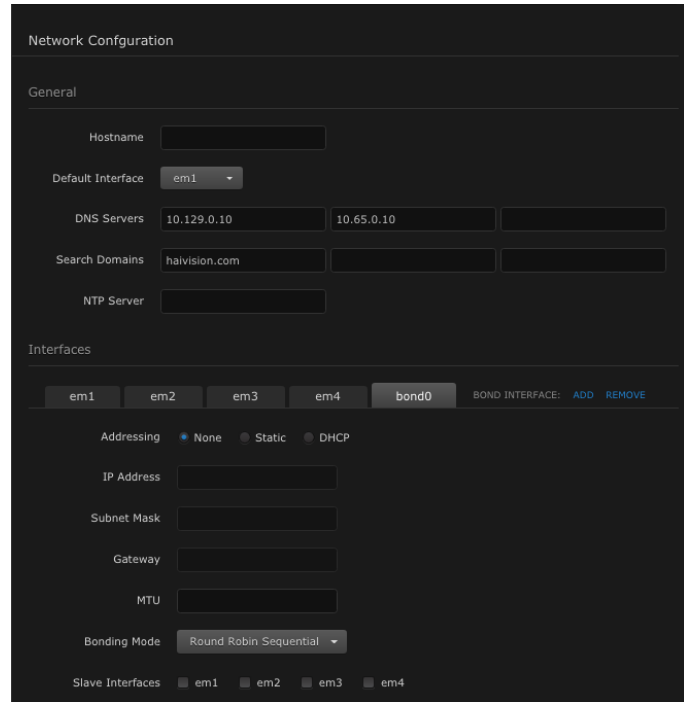
Related Topics

- **Administration Screen**
- **Network Settings**
- **Creating a Bond Interface**
- **Adding a Static Route**

Network Settings

The following table lists the configurable network settings.

Network Setting	Description
General	
Hostname	The hostname to be assigned. Specify the hostname as a fully-qualified domain name (FQDN). For example: myserver.mycompany.com

Network Setting	Description
Default Interface	**Note** Depending upon the naming scheme used, interfaces can be prefixed with em, enp, eth, etc.
DNS Servers	*(Optional).* The Internet Protocol version 4 (IPv4) addresses of the Domain Name Server(s) to use.
Search Domains	*(Optional).* The search strings to use when attempting to resolve domain names.
NTP Server	*(Optional).* If the Network Time Protocol (NTP) is enabled, enter the IP address of the NTP server for the device. Setting this allows the unit to keep the date and time in sync with an NTP server and helps avoid scheduling errors.
Interfaces	
eth0 | eth1 | eth2 | ...	**Note** Depending upon the naming scheme used, interfaces can be prefixed with em, enp, eth, etc.
Bond Interface	Bonding enables an administrator to use more than one physical network port as a single connection. This can be used to increase performance or redundancy of a server.
Addressing	Choose whether the interface uses a static or dynamic IP address: • None — Select to disable the interface. • Static — Select to disable DHCP. When it is disabled, you must manually enter the IP address and subnet mask. • DHCP — Select to enable the Dynamic Host Configuration Protocol. When DNCP is enabled, the appliance will receive an IP address from a DHCP server on the network.
IP Address	**Note** **If DHCP is disabled, you may enter an IP address in dotted-decimal format.**
Subnet Mask	**Note** If DHCP is disabled, you may enter the Network Mask in dotted-decimal format (e.g., 255.255.0.0).
Gateway	**Note** If DHCP is disabled, you may enter the gateway address in dotted-decimal format.
MTU	(Maximum Transmission Unit) Specifies the maximum allowed size of IP packets for the outgoing data stream.
MAC Address	*(Read-only).* The Media Access Control address assigned to the interface. This is the physical address of the network interface and cannot be changed.

Network Setting	Description
Link	Select the link negotiation settings for the interface, either Auto or Manual. If you select Manual, you can select the Speed (10, 100 or 1000) and Duplex setting (Full or Half).
Bonding Mode	*(Bond Interface only)*. Modes for the Linux bonding driver determine the way in which traffic sent out of the bonded interface is actually dispersed over the real interfaces. Modes 0, 1, and 2 are by far the most commonly used among them. • **Round Robin Sequential**: Transmits packets in first available network interface (NIC) slave through the last. This mode provides load balancing and fault tolerance. • **Active Backup**: Only one NIC slave in the bond is active at a time. A different slave becomes active only when the active slave fails. This mode provides fault tolerance. • **XOR Sequential**: Transmits based on XOR formula. (Source MAC address is XOR'd with destination MAC address). This mode selects the same NIC slave for each destination MAC address and provides load balancing and fault tolerance. • **Broadcast – Fault Tolerance**: Transmits network packets on all slave interfaces. This mode is least used (only for specific purpose) and provides only fault tolerance. • **IEEE 802.3ad Dynamic Link Aggregation**: Creates aggregation groups that share the same speed and duplex settings. Utilizes all slave network interfaces in the active aggregator group according to the 802.3ad specification. This mode is similar to the XOR mode above and supports the same balancing policies. The link is set up dynamically between two LACP-supporting peers. • **Transmit Load Balancing (TLB)** *(Adaptive)*: The outgoing traffic is distributed according to the current load and queue on each slave interface. Incoming traffic is received by one currently designated slave network interface. If this receiving slave fails, another slave takes over the MAC address of the failed receiving slave. • **Active Load Balancing (ALB)** *(Adaptive)*: This includes balance-tlb + *receive load balancing* (rlb) for IPV4 traffic. The receive load balancing is achieved by ARP negotiation. The bonding driver intercepts the ARP Replies sent by the server on their way out and overwrites the source hardware address with the unique hardware address of one of the slaves in the bond such that different clients use different hardware addresses for the server.
Slave Interfaces	*(Bond Interface only)*. Select the checkboxes next to the interfaces to enslave it to the bond interface.
Static Routes	
Destination	Each static route requires a destination.
Subnet Mask	ℹ️ **Note** If DHCP is disabled, you may enter the Network Mask in dotted-decimal format (e.g., 255.255.0.0).
Gateway	This is the gateway that is used when no other gateway matches. This address must be reachable on your local subnet. If DHCP is disabled, you may enter the gateway address in dotted-decimal format.
Interface	The interface associated with the static route.Use the drop-down menu to make your selection.

Creating a Bond Interface

Bond interfaces provide a method for aggregating multiple network interfaces into a single logical interface. The goal is to increase throughput and to ensure redundancy in case one of the links should fail.

To create a bond interface:

1. Click the ☰ icon and select **Administration**.
2. In the sidebar, click **Network**.
3. In the Interfaces section, click the Bond Interface: **Add** action link. A bond0 tab (or the next sequential available tab) appears.
4. Click the newly created Interface tab to reveal the bonding-specific fields (such as Bonding Mode and Slave Interface).
5. Enter the appropriate network information. See *Network Settings* for setting descriptions.
6. Click **Save Settings**.
7. Click **Reboot** to have your network configuration changes take effect.

Related Topics

- **Administration Screen**
- **Removing a Bond Interface**
- **Configuring the Network**
- **Network Settings**

Removing a Bond Interface

To remove a bond interface:

1. Click the ☰ icon and select Administration.
2. In the sidebar menu, click **Network**.
3. Verify that the correct bond interface you wish to remove (for example, bond0) is currently selected.
4. Click the **Bond Interface: Remove** action link. The selected interface tab is removed.
5. Click the **Save Settings** button.
6. Click **Reboot** to have your changes take effect.
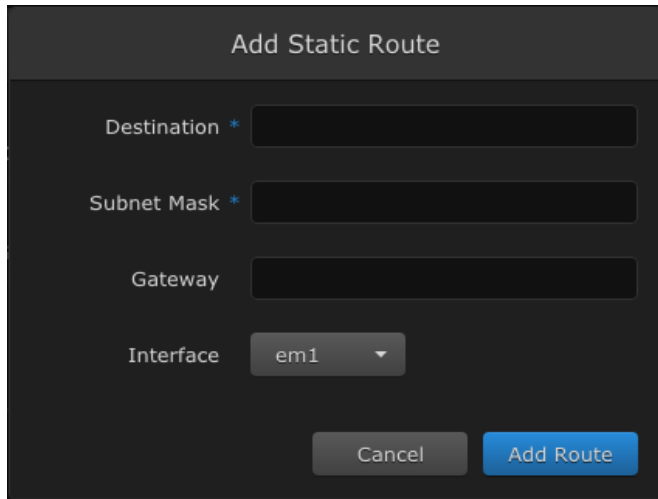
Related Topics

- **Administration Screen**
- **Creating a Bonded Interface**

Adding a Static Route

To add a static route:

1. Click the ☰ icon and click Administration.
2. In the menu on the left under Configuration, click **Network**.
3. Under the Static Routes pane, click ⊕ **Route** and provide the necessary data in the Add Static Route dialog. For setting descriptions, see the table in Network Settings.
4. Click the **Add Route** button. The static route is added to the listings in the Network Configuration screen.
5. Click **Save Settings**.
6. Click **Reboot** to have your network configuration changes take effect.

Related Topics

- **Administration Screen**
- **Network Settings**
- **Editing a Static Route**
- **Deleting a Static Route**

Editing a Static Route

To edit an existing static route:

1. Click the ☰ icon and click Administration.
2. In the menu on the left under Configuration, click **Network**.
3. Under the Static Routes pane, click the row of the route you want to edit. Alternatively, you can click the checkbox next to the route and then click **Actions**/**Edit**.
4. In the Edit Static Route dialog, edit the fields as necessary. For setting descriptions, see the table in Network Settings.
5. Click **Save Route**.
6. Click **Save Settings**.
7. Click **Reboot** to have your network configuration changes take effect.

Related Topics

- **Administration Screen**
- **Network Settings**
- **Adding a Static Route**
- **Deleting a Static Route**

Deleting a Static Route

To delete a static route:

1. Click the ☰ icon and click Administration.
2. In the sidebar, click **Network**.
3. Under the Static Routes section, click the checkbox next to the route you want to delete. You can select multiple routes to be deleted.
4. Click **Actions**/**Delete**.

5. Click **Confirm** to confirm deleting the route.
6. Click **Save Settings**.
7. Click **Reboot** to have your network configuration changes take effect.

Related Topics

- **Administration Screen**
- **Adding a Static Route**
- **Editing a Static Route**

Configuring the WiFi Access Point

The WiFi Access Point (WiFi AP) administrative page allows you to:

- Enable/disable the WiFi access point and set an SSID.
- Enable/disable WiFi authentication and set an encryption key.
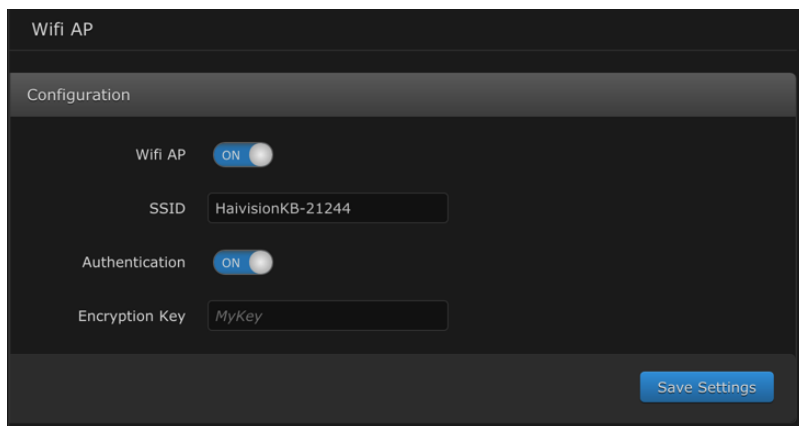
Related Topics

- **Enabling/Disabling the WiFi Access Point**
- **Enabling/Disabling WiFi Authentication**

Enabling/Disabling the WiFi Access Point

To enable or disable the WiFi access point (WiFi AP):

1. Go to the ☰ icon in the top right corner and select Administration.
2. In the sidebar (Configuration section), select **WiFi AP**.
3. In the main pane, slide the **WiFi AP** switch to ON (or OFF as appropriate).

   > ⚠ **Note**
   >
   > By default, the Service Set Identifier (SSID) is "Haivision" followed by a product identifier and a random number. To avoid future support issues, make note of this number and safeguard it before changing the identifier.

4. In the main pane, click the **SSID** field and enter your desired identifier (up to 32 characters).
5. Press the **Save Settings** button when finished.

Related Topics

- **Enabling/Disabling WiFi Authentication**

Enabling/Disabling WiFi Authentication

To enable or disable WiFi authentication:

1. Click the ☰ icon in the top right corner and select Administration.
2. In the sidebar, select **WiFi AP**.
3. In the main pane, slide the **WiFi AP** toggle switch to ON.
4. Slide the **Authentication** switch to ON (or OFF as appropriate).

> ⚠ **Note**
>
> When Authentication is set to ON, an Encryption Key field appears.

5. Click the **Encryption Key** field and enter the key (minimum of 10 characters).
6. When finished, click the **Save Settings** button.

Related Topics

- [Enabling/Disabling the WiFi Access Point](#)

Customizing the Stand-By Image

A stand-by image is displayed on active channels when no input source is available. Administrators can set the default stand-by image for newly created channels, and upload additional stand-by images for individual channels to use as their specified stand-by image.

Setting the Default Stand-By Image

To set the default stand-by image for newly created channels:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Configuration, click **Media**.
3. Select the desired default stand-by image by clicking on the image thumbnail or checking the checkbox next to the image.
4. Click the **Set Default** button.

> ℹ **Note**
>
> Existing channels are not affected by changing the default stand-by image.

Adding Available Stand-By Images

To add available stand-by images:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Configuration, click **Media**.
3. Click the **Import** button.
4. Select the image you wish to add (JPG, PNG, or GIF formats supported), and click **Open**.

> ℹ **Note**
>
> Stand-by images are resized to fit the output video resolution. Therefore, ensure the selected image matches its aspect ratio.

5. Confirm the filename is correct, and click **Upload**.

The new image is added to the available stand-by images. The image can now be set as the default stand-by image, or can be configured as the stand-by image for individual channels as shown in **Disabling or Changing Stand-By Image**.

Deleting Stand-By Images

> **Note**
>
> The colorbar image cannot be deleted.

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Configuration, click **Media**.
3. Select the images you wish to delete by either:
   - Clicking on the image thumbnail
   - Checking the checkbox next to the image
   - Checking the **All** checkbox
4. Click the **Delete** button.

> **Note**
>
> If the default stand-by image is deleted, another image is automatically selected as the default stand-by image.

Defining Overlay Images

An overlay image (watermark) can be added to baseband input streams. Administrators can upload images for individual channels to use as their specified overlay image.

Adding Available Overlay Images

To add available overlay images:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Configuration, click **Overlay Images**.
3. Click the **Import** button.
4. Select the image you wish to add (only PNG format is supported), and click **Open**.
5. Confirm the filename is correct, and click **Upload**.

The new image is added to the available overlay images. The image can now be configured as an overlay image for individual channels as shown in **Enabling or Changing Overlay Image**.

Deleting Overlay Images

To delete available overlay images:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Configuration, click **Overlay Images**.
3. Select the images you wish to delete by either:
   - Clicking on the image thumbnail
   - Checking the checkbox next to the image
   - Checking the All checkbox
4. Click the **Delete** button.
5. Click the **Confirm** button, to confirm the deletion.
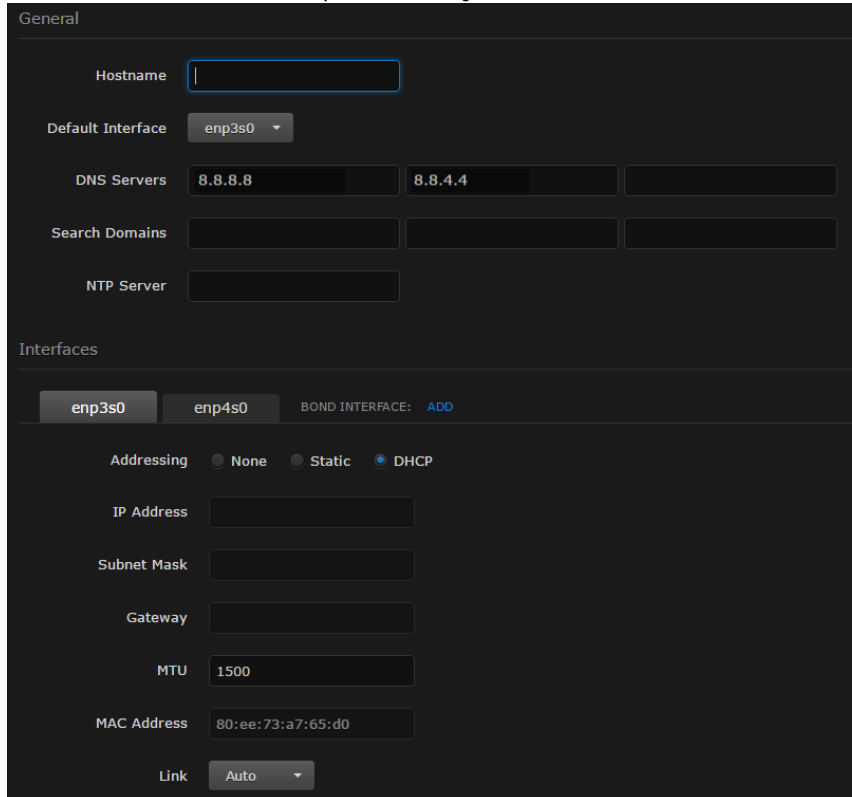
Acquiring the MAC Address

The Network Configuration settings allow you to determine the MAC address for the device.

To acquire the MAC Address:

1. Click the ☰ icon, and select **Administration**.
2. In the sidebar (under Configuration), click **Network**.
3. Scroll down in the main pane until you see the MAC Address field.

Related Topics

- **Administration Screen**

Supplying KB with a TLS/SSL Security Certificate

The KB Encoder is encrypted to provide secure interactions with your devices. When you log into the web interface, you are automatically redirected to the secure HTTP (HTTPS) site. When a browser accesses the website, it requests a security certificate to confirm that the site is trusted. The KB Encoder ships with a self-signed SSL certificate key set which works with any configured server hostname. However, web browsers do not consider self-signed certificates to be trusted, because they are not signed by a Certificate Authority. Consequently, when accessing the website with a self-signed certificate, users see a security warning and are prompted for authorization as shown below. Responses may vary depending upon the browser used.
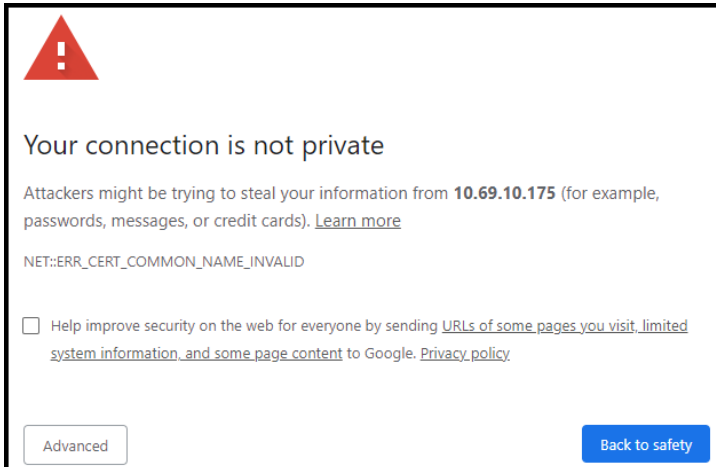
> **❶ Important**
>
> Before adding an exception for the site, check with your administrator on the correct response.

Supplying the KB Encoder with a TLS/SSL security certificate eliminates the security warning, provides a means for users to verify a website, and ensures that the connection is secure.

> **ℹ Note**
>
> Haivision recommends that site administrators install a signed SSL certificate key set. Please contact your Network Administrator to obtain an SSL certificate and key appropriate for your use.

Related Topics

- **Administration Screen**
- **Adding a Security Certificate**
- **Renewing a Security Certificate**

Adding a Security Certificate

> **ℹ Note**
>
> Please contact your Network Administrator to obtain the SSL certificate and key.

To add a security certificate:

1. Click the ☰ icon and click **Administration**.
2. In the menu on the left under Configuration, click **Security**.
3. Paste the new SSL certificate and SSL certificate key into the corresponding textboxes.
4. Optionally, paste an SSL intermediate certificate bundle into the corresponding textbox.
   Use this textbox if you need to provide one or more certificate chain files signed by intermediate Certificate Authority (CA) providers. An intermediate certificate goes between your site (server) certificate and a root certificate to complete the chain to the trusted root. This is useful when a CA signs the SSL certificate using intermediate certificates in the chain of trust. In these cases, Web browsers don't know about this intermediate certificate and cannot "walk up the chain of trust" to

validate the SSL certificate. To work around this problem, the KB Encoder optionally accepts a "bundle" of any intermediate certificates.
5. Click **Save**.

Related Topics

- **Renewing a Security Certificate**

Renewing a Security Certificate

To regenerate a self-signed certificate based on the values in the Network Configuration screen:

1. Click the ☰ menu and select **Administration**.
2. In the menu on the left under Configuration, click **Security**.
3. Click **Renew Certificate**.

The page refreshes automatically with an updated certificate displayed in the Active Certificate textbox.

Related Topics

- **Adding a Security Certificate**

Updating the KB Encoder

> ℹ️ **Note**
>
> For major releases or when adding new features, you need to apply a valid license key before or after the update. For more information, see **Licensing the KB Encoder**. If you install an update without a valid license key, the device will not function. Please contact Haivision Technical Support to obtain a valid license key.

Related Topics

- **Administration Screen**

Downloading System Updates

> ℹ️ **Note**
>
> Only customers under a maintenance agreement can download an update package.

To download system updates:

1. Log into the Haivision Support Portal at: **https://support.haivision.com**
2. Click the **Software Upgrades** link.
3. Download the KB Upgrade Package you wish to install.
4. Save the selected .zip file to your local computer or network.
5. Extract the update file from the .zip file using a zip file utility.

The system update comes in the form of a software package, which when loaded replaces the application on your device.

Related Topics

- **Installing System Updates**

Installing System Updates

> **ℹ Note**
>
> You cannot install system updates from a mobile device.

To install system updates:

1. Ensure that all channels are stopped before starting an update. See **Stopping a Channel** for details.
2. Click the ☰ icon, and select **Administration**.
3. In the menu on the left under Configuration, click **Update**.
4. The currently installed bundle version and build number is shown. Click **Browse**.
5. Browse to the location where the bundle was extracted in **Downloading System Updates**.
6. Select the bundle file (.hai extension) and click **Open**.
7. Click **Upload**.

   > **ℹ Note**
   >
   > If an "Unable to extract bundle properly." error is received, an unsupported bundle file was selected. Redo steps 4-7, selecting the correct bundle file.

8. When the selected file is uploaded and verified, click **Update**/**Confirm** to start the update procedure.
9. When complete, the system prompts you that you will be redirected to the login page. Click **OK** to continue.
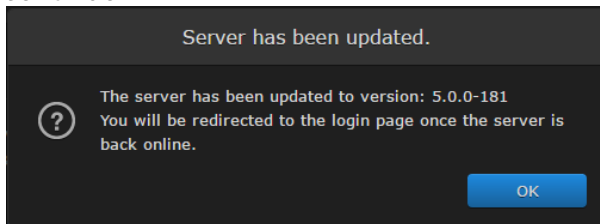
After logging in, you are returned to the Update page where you can confirm the update has completed via the version and build numbers.

Related Topics

- **Downloading System Updates**

Managing Users

To simplify setup and security, there are three built-in user accounts available in the web interface: haiadmin, haioperator, and haiobserver. Each account is assigned to the following roles:

Name	Role	Description
haiadmin	Administrator	All access rights and administrator privileges.
haioperator	Operator	All rights to configure A/V and stream settings. Does not include rights to the Administration page.
haiobserver	Observer	Read-only access to the system. Does not include the rights to the Administration page.

> **① Important**
>
> For security purposes, change the password for these accounts as described in **Changing Account Passwords**. Information regarding user/password credentials should be safe-guarded. Factory-set passwords are provided in the *Important Notice* document.

Related Topics

- **Administration Screen**

Viewing User Accounts

To view the available user accounts:

1. Ensure you are logged into an administrator account.
2. Click the ☰ icon and click **Administration**.
3. In the menu on the left under User Administration, click **Accounts**.

All available accounts are listed along with their current roles according to the following table:

Field	Value
Account Name	The user name for the account. Built-in accounts set up at the factory include: • haiadmin • haioperator • haiobserver
Role	The role assigned to the account. Roles for built-in accounts cannot be changed. Available roles include: • Administrator • Operator • Observer See **Managing Users** for definitions of these roles.

Related Topics

- **Changing Account Passwords**

Changing Account Passwords

> **◆ Caution**
>
> **For security purposes, Haivision strongly advises you to change the default passwords during initial configuration.**

Until all user passwords have been changed from the factory defaults, an "(Unsecure Passwords)" status message appears in the titlebar:

To view which accounts need their passwords changed from the factory defaults:

1. Click the **(Unsecure Passwords)** status message.
2. A dialog opens listing the accounts that are using the default passwords. For example, if all passwords need changed:

> **Your system is not secure**
>
> ⚠ In order to secure your system, the administrator needs to update the default password for the following account(s):
>
> - hvroot
> - haiadmin
> - haioperator
> - haiobserver
>
> [Close]   [Change Password(s)]
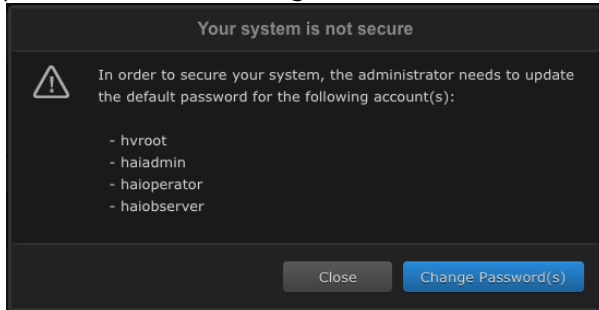
Only an administrator account can change passwords. Use the `haiadmin` administrator account via the web interface to change passwords for the following accounts:

- haiadmin
- haioperator
- haiobserver

If you have an appliance, use the Console UI to change the password for `hvroot` . See **Using the Console UI with Haivision Hardware** for details.

To change user passwords using the web interface:

1. Ensure you are logged into the haiadmin account.
2. Click the ☰ icon and click **Administration**.
3. In the sidebar (under User Administration), click **Accounts**.
4. Click the name of the account whose password you want to change.
5.
> ℹ **Note**
>
> For security purposes, if you re-use a default password as your new password, the "(Unsecure Passwords) in the titlebar.

6. When finished, click **Apply**. The new password takes effect at the next login session.

> 🛈 **Important**
>
> If changing the `haiadmin` administrator account password, make note of it for future reference.

> ℹ **Note**
>
> Any password changes that you make to an account are persistent and are not overwritten during an update.

Related Topics

- **Viewing User Accounts**
- **Using the Console UI with Haivision Hardware**

Warranties

1-Year Limited Hardware Warranty

Haivision warrants its hardware products against defects in materials and workmanship under normal use for a period of ONE (1) YEAR from the date of equipment shipment ("Warranty Period"). If a hardware defect arises and a valid claim is received within the Warranty Period, at its option and to the extent permitted by law, Havision will either (1) repair the hardware defect at no charge, or (2) exchange the product with a product that is new or equivalent to new in performance and reliability and is at least functionally equivalent to the original product. A replacement product or part assumes the remaining warranty of the original product or ninety (90) days from the date of replacement or repair, whichever is longer. When a product or part is exchanged, any replacement item becomes your property and the replaced item becomes Haivision's property.

EXCLUSIONS AND LIMITATIONS

This Limited Warranty applies only to hardware products manufactured by or for Haivision that can be identified by the "Haivision" trademark, trade name, or logo affixed to them. The Limited Warranty does not apply to any non-Haivision hardware products or any software, even if packaged or sold with Haivision hardware. Manufacturers, suppliers, or publishers, other than Haivision, may provide their own warranties to the end user purchaser, but Haivision, in so far as permitted by law, provides their products "as is".

Haivision does not warrant that the operation of the product will be uninterrupted or error-free. Haivision does not guarantee that any error or other non-conformance can or will be corrected or that the product will operate in all environments and with all systems and equipment. Haivision is not responsible for damage arising from failure to follow instructions relating to the product's use.

This warranty does not apply:

(a) to cosmetic damage, including but not limited to scratches, dents and broken plastic on ports;

(b) to damage caused by accident, abuse, misuse, flood, fire, earthquake or other external causes;

(c) to damage caused by operating the product outside the permitted or intended uses described by Haivision;

(d) to a product or part that has been modified to alter functionality or capability without the written permission of Haivision; or

(e) if any Haivision serial number has been removed or defaced.

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INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS. IF HAIVISION CANNOT LAWFULLY DISCLAIM STATUTORY OR IMPLIED WARRANTIES THEN TO THE EXTENT PERMITTED BY LAW, ALL SUCH WARRANTIES SHALL BE LIMITED IN DURATION TO THE DURATION OF THIS EXPRESS WARRANTY AND TO REPAIR OR REPLACEMENT SERVICE AS DETERMINED BY HAIVISION IN ITS SOLE DISCRETION. No Haivision reseller, agent, or employee is authorized to make any modification, extension, or addition to this warranty. If any term is held to be illegal or unenforceable, the legality or enforceability of the remaining terms shall not be affected or impaired.

EXCEPT AS PROVIDED IN THIS WARRANTY AND TO THE EXTENT PERMITTED BY LAW, HAIVISION IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO LOSS OF USE; LOSS OF REVENUE; LOSS OF ACTUAL OR ANTICIPATED PROFITS (INCLUDING LOSS OF PROFITS ON CONTRACTS); LOSS OF THE USE OF MONEY; LOSS OF ANTICIPATED SAVINGS; LOSS OF BUSINESS; LOSS OF OPPORTUNITY; LOSS OF GOODWILL; LOSS OF REPUTATION; LOSS OF, DAMAGE TO OR CORRUPTION OF DATA; OR ANY INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE HOWSOEVER CAUSED INCLUDING THE REPLACEMENT OF EQUIPMENT AND PROPERTY, ANY COSTS OF RECOVERING, PROGRAMMING, OR REPRODUCING ANY PROGRAM OR DATA STORED OR USED WITH HAIVISION PRODUCTS AND ANY FAILURE TO MAINTAIN THE CONFIDENTIALITY OF DATA STORED ON THE PRODUCT. THE FOREGOING LIMITATION SHALL NOT APPLY TO DEATH OR PERSONAL INJURY CLAIMS, OR ANY STATUTORY LIABILITY FOR INTENTIONAL AND GROSS NEGLIGENT ACTS AND/OR OMISSIONS.

OBTAINING WARRANTY SERVICE

Before requesting warranty service, please refer to the documentation accompanying this hardware product and the Haivision Support Portal https://support.haivision.com. If the product is still not functioning properly after making use of these resources, please contact Haivision or Authorized Reseller using the information provided in the documentation. When calling, Haivision or Authorized Reseller will help determine whether your product requires service and, if it does, will inform you how Haivision will provide it. You must assist in diagnosing issues with your product and follow Haivision's warranty processes.

Haivision may provide warranty service by providing a return material authorization ("RMA") to allow you to return the product in accordance with instructions provided by Haivision or Authorized Reseller. You are fully responsible for delivering the product to Haivision as instructed, and Haivision is responsible for returning the product if it is found to be defective. Your product or a replacement product will be returned to you configured as your product was when originally purchased, subject to applicable updates. Returned products which are found by Haivision to be not defective, out-of-warranty or otherwise ineligible for warranty service will be shipped back to you at your expense. All replaced products and parts, whether under warranty or not, become the property of Haivision. Haivision may require a completed pre-authorized form as security for the retail price of the replacement product. If you fail to return the replaced product as instructed, Haivision will invoice for the pre-authorized amount.

APPLICABLE LAW

This Limited Warranty is governed by and construed under the laws of the Province of Quebec, Canada.

This Limited Hardware Warranty may be subject to Haivision's change at any time without prior notice.

EULA - End User License Agreement

READ BEFORE USING

THE LICENSED SOFTWARE IS PROTECTED BY COPYRIGHT LAWS AND TREATIES. READ THE TERMS OF THE FOLLOWING END USER (SOFTWARE) LICENSE AGREEMENT ("AGREEMENT") CAREFULLY BEFORE ACCESSING THE LICENSED SOFTWARE. BY SCANNING THE QR CODE TO REVIEW THIS AGREEMENT AND/OR ACCESSING THE LICENSED SOFTWARE, YOU CONFIRM YOUR ACCEPTANCE OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THESE TERMS, HAIVISION IS UNWILLING TO LICENSE THE LICENSED SOFTWARE TO YOU AND YOU ARE NOT AUTHORIZED TO ACCESS THE LICENSED SOFTWARE.

Click the following link to view the Software End-User License Agreement: **Haivision EULA.pdf**

If you have questions, please contact **legal@haivision.com**

SLA - Service Level Agreement

1. Introduction

This Service Level and Support supplement forms a part of and is incorporated into the Service Agreement (the "Agreement") between You and Haivision Network Video Inc. ("Haivision"). Capitalized terms used but not otherwise defined in this supplement shall have the meaning ascribed to them in the Agreement. Haivision may, upon prior written notice to You, amend this supplement to incorporate improvements to the service levels and support commitments at no additional cost to You. This supplement applies only to those products and services set forth below.

2. Definitions

- "Audience Member" means an individual or entity that accesses Your Published Media Objects through a public URL.
- "Access Service" means the service provided by Haivision VCMS that verifies an Audience Member's credentials.
- "Digital Media File" means a computer file containing text, audio, video, or other content.
- "Outage" is a 12-minute period of consecutive failed attempts by all six agents to PING the domain on the Haivision Streaming Media network.
- "Published Media Object" means a Digital Media File with a public URL.
- "Transaction" means the creation of a right for an Audience Member to access a Media Object and the completion of an order logged in the order history service.

3. Service Levels for the Video Content Management System

The service levels in this **Section 3** apply only to the hosted version of Haivision VCMS and the Haivision VCMS development kit (collectively, the "Standard Hosted Components" of Haivision Video Cloud Services). Subject to the exceptions noted in **Section 4** below, the aforementioned components of Haivision Video Cloud Services will be available for use over the course of each calendar month as follows:

Type of Access	Definition	Availability Level
Write Functions	• Access to all functions through the administrative user interface. • Ability to add or modify objects and metadata through the application programming interface ("API") • Ability of ingest service to check for new or updated files or feeds	99.999%
Read-Only Functions	• Ability to retrieve data through the API • Ability for Audience Members to authenticate through the Access Service • Ability for Audience Members to play Published Media Objects • Ability for Audience Members to play Haivision VCMS-authenticated or entitled Published Media Objects • Ability to complete Transactions	99.999%

4. Exceptions to Availability for the VCMS

The Standard Hosted Components may not be available for use under the following circumstances, and in such case such periods of unavailability shall not be counted against Haivision Video Cloud for purposes of calculating availability:

a. Normal Maintenance, Urgent Maintenance and Upgrades as defined in the table below;
b. Breach of the Agreement by You as defined in the Agreement;
c. The failure, malfunction, or modification of equipment, applications, or systems not controlled by Haivision Video Cloud;
d. Any third party, public network, or systems unavailability;
e. Acts of Force Majeure as defined in the Agreement;
f. Modification of software made available to You as part of Haivision Video Cloud Services by You or a third party acting on Your behalf; and
g. Any third party product or service not incorporated into Haivision Video Cloud Services or any third party plug-in.

Haivision Video Cloud shall make commercially reasonable efforts to notify, or work with, applicable third parties to repair or restore Haivision VCMS functionality affected by such exceptions.

Type of Maintenance	Purpose	Write Functions Available	Read Functions Available	Maximum Time Per Month	Continuous Time in Mode (Max)	Window (Central Time)	Min Notice
Normal	• Preventive maintenance on the software/hardware components of Haivision VCMS • Addition of new features/functions • Repair errors that are not immediately affecting Your use of Haivision VCMS	No	Yes	10 Hours	6 Hours	10:00pm - 5:00am	48 Hours
Urgent	• Repair errors that are immediately affecting Your use of Haivision VCMS	No	Yes	30 Minutes	15 Minutes	Any Time	3 Hours

Type of Maintenance	Purpose	Write Functions Available	Read Functions Available	Maximum Time Per Month	Continuous Time in Mode (Max)	Window (Central Time)	Min Notice
Upgrades	• Perform upgrades on software or hardware elements necessary to the long term health or performance of Haivision VCMS, but which, due to their nature, require that certain components of Haivision VCMS to be shut down such that no access is possible	No	No	1 Hour	1 Hour	12:00am - 4:00am M-F	5 Days

5. Credits for Downtime for the VCMS

Haivision Video Cloud will grant a credit allowance to You if You experience Downtime in any calendar month and you notify Haivision Video Cloud thereof within ten (10) business days after the end of such calendar month. In the case of any discrepancy between the Downtime as experienced by You and the Downtime as measured by Haivision Video Cloud, the Downtime as measured by Haivision Video Cloud shall be used to calculate any credit allowance set forth in this section. Such credit allowance shall be equal to the pro-rated charges of one-half day of Fees for each hour of Downtime or fraction thereof. The term "Downtime" shall mean the number of minutes that Standard Hosted Components are unavailable to You during a given calendar month below the availability levels thresholds in Section 3, but shall not include any unavailability resulting from any of the exceptions noted in Section 4. Within thirty (30) days after the end of any calendar month in which Downtime occurred below the availability levels thresholds in Section 3, Haivision Video Cloud shall provide You with a written report detailing all instances of Downtime during the previous month. Any credit allowances accrued by You may be offset against any and all Fees owed to Haivision Video Cloud pursuant to the Agreement, provided that a maximum of one month of credit may be accrued per month.

6. Support Services for the VCMS

Support for Haivision Video Cloud Services as well as the Application Software (defined as the VCMS application software components that Haivision licenses for use in conjunction with the Video Cloud Services) can be reached at hvc-techsupport@haivision.com and shall be available for all Your support requests. Haivision Video Cloud will provide 24x7 monitoring of the Standard Hosted Components.

Cases will be opened upon receipt of request or identification of issue, and incidents will be routed and addressed according to the following:

Severity Level	Error State Description	Status Response Within	Incident Resolution within
1 – Critical Priority	Renders Haivision VCMS inoperative or causes Haivision VCMS to fail catastrophically.	15 minutes	4 hours
2 – High Priority	Affects the operation of Haivision VCMS and materially degrades Your use of Haivision VCMS.	30 minutes	6 hours
3 – Medium Priority	Affects the operation of Haivision VCMS, but does not materially degrade Your use of Haivision VCMS.	2 hours	12 hours

Severity Level	Error State Description	Status Response Within	Incident Resolution within
4 – Low Priority	Causes only a minor impact on the operation of Haivision VCMS.	1 business day	3 business days

7. Service Levels for Haivision Streaming Media Service

Haivision agrees to provide a level of service demonstrating 99.9% Uptime. The Haivision Streaming Media Service will have no network Outages.

The following methodology will be employed to measure Streaming Media Service availability:

Agents and Polling Frequency

a. From six (6) geographically and network-diverse locations in major metropolitan areas, Haivision's Streaming Media will simultaneously poll the domain identified on the Haivision Streaming Media network.
b. The polling mechanism will perform a PING operation, sending a packet of data and waiting for a reply. Success of the PING operation is defined as a reply being received.
c. Polling will occur at approximately 6-minute intervals.
d. Based on the PING operation described in (b) above, the response will be assessed for the purpose of measuring Outages.

If an Outage is identified by this method, the customer will receive (as its sole remedy) a credit equivalent to the fees for the day in which the failure occurred.

Haivision reserves the right to limit Your use of the Haivision Streaming Media network in excess of Your committed usage in the event that Force Majeure events, defined in the Agreement, such as war, natural disaster or terrorist attack, result in extraordinary levels of traffic on the Haivision Streaming Media network.

8. Credits for Outages of Haivision Streaming Media Service

If the Haivision Streaming Media network fails to meet the above service level, You will receive (as your sole remedy) a credit equal to Your or such domain's committed monthly service fee for the day in which the failure occurs, not to exceed 30 days of fees.

9. No Secondary End User Support

UNDER NO CIRCUMSTANCES MAY YOU PROVIDE CONTACT INFORMATION FOR HAIVISION SERVICES TO CUSTOMERS OR AUDIENCE MEMBERS OR OTHER THIRD PARTIES WITHOUT HAIVISION'S EXPRESS PRIOR WRITTEN CONSENT.

Getting Help

General Support	North America (Toll-Free) **1 (877) 224-5445** International **1 (514) 334-5445** *and choose from the following:* Sales - 1, Cloud Services - 3, Support - 4
Managed Services	U.S. and International 1 (512) 220-3463
Fax	1 (514) 334-0088
Support Portal	https://support.haivision.com
Product Information	info@haivision.com