



HAIVISION

Haivision Media Platform 2.6
Administrator's Guide

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Edition Notice

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Contents

Edition Notice	2
About Haivision	2
Trademarks	2
Disclaimer	2
Contents	3
About This Document	6
Conventions	6
Typographic Conventions and Elements	6
Action Alerts	6
Obtaining Documentation	7
Getting Service Support	7
New Product Features	9
Administrator Choice of Default Player (Modern or Legacy)	9
Selective Stream Distribution (varies by Edition)	9
Portal Branding (system-wide)	9
Portal “Light Color” Scheme (system-wide)	10
User Interface Enhancements (highlights)	10
Enhancements to Existing Capabilities (varies by Edition and licenses)	10
Haivision Play Set-Top Box Capabilities (varies by Edition)	10
Introduction	11
Haivision Media Platform Overview	11
Product Features	12
Product Editions	13
Multicast Support via Haivision Helper and Multicast Agent	14
HMP-Media Gateway Pairing	16
SRT (Secure Reliable Transport)	16
Appliance Options	16
Physical Description	17
System Interface	17
LED Status Indicators	18
Getting Started	21
Accessing the HMP Web Interface	21
Navigating the Interface	22
Basic Actions	24
Editing Items	24
Deleting Items	26
Sharing Items	27
Configuring HMP	30
Configuring Feeds and Activating the Portal	30
Managing Sources	33
Configuring Sources	34
Source Settings	37
Configuring Secure Reliable Transport (SRT) Sources	39
SRT Source Statistics	39
Configuring IPTV Channels	41
Configuring Export Destinations	42
Export Destination Settings	44

- Configuring Locations 44
 - Multicast Playback..... 45
 - Managing Locations..... 45
 - Troubleshooting Multicast & Diagnostic Tool 47
 - Location Settings..... 48
 - Locations Topology 50
 - Locations Policies..... 51
- Configuring HMP-Media Gateway Pairings 53
 - Configuring Paired Media Gateways..... 54
 - Configuring Multi-Site Live Distribution 55
- Configuring Metadata 57
 - Metadata Settings 61
 - Managing KLV Inputs..... 61
- STB Administration 63
 - Setting Device Defaults..... 63
 - Tagging Devices..... 66
- Managing Stream Outputs 67
- Re-Branding the User Interface 68
 - User Interface Settings..... 71
- Configuring Video and Session Settings 71

Managing Access Control 74

- Managing Users 74
 - Assigning Roles to LDAP/AD Users..... 76
 - Managing User Accounts (Non LDAP/AD) 77
 - User Settings 78
- Managing Groups (LDAP/AD Only) 79
 - Assigning Roles to LDAP/AD Groups 80
- Managing Roles 80
 - Adding Users and Groups to Roles 81
 - Editing Role Permissions 82
 - Creating Custom Roles..... 83
 - Default Roles 84
- Managing Share Permissions 86

Managing System Settings 88

- Activating Command Line API Access 88
- Backing Up and Restoring HMP..... 89
 - Backing Up HMP 91
 - Uploading Downloaded File..... 93
 - Restore to a Previous Configuration..... 93
 - Backup/Restore Settings 94
- Managing Certificates 95
 - Certificate Settings 99
- Managing Directory (Authentication) Services 100
 - Connecting to a Directory Server 100
 - Disconnecting from a Directory Server 104
 - Directory Service Settings 104
 - Integrating HMP with Single Sign-On (SSO) Environments 107
 - Single Sign-On (SSO) Settings..... 108
- Managing Licenses 111
- Configuring Network Settings..... 113
 - Network Settings 114
- Managing Network Storage..... 116
 - Configuring Network Storage 117
 - Configuring Watch Folders 118
 - Formatting XML Data to Import into HMP with Media Files 119
 - Importing Custom EPG Data into HMP..... 121
- Managing Security..... 123
 - Configuring Secure Streaming 123
 - Configuring a Watermark..... 124
 - Configuring Appliance Security..... 125
 - Security Settings..... 127
- Installing System Updates..... 131

Reporting 134

- Viewing Reports..... 134
- Reports and Logs 135
- Viewing System Activity..... 136

KLV Dictionary Format 138

- Dictionary Syntax 138
- Item - Translation..... 138
- Item - Translation/Format/Suffix/Precision 139
- Item - Enum..... 140
- 64-bit Integer..... 142

Technical Specifications 143

- Haivision Media Platform (All Systems)..... 143
- Haivision Media Platform - 1RU 143
- Haivision Media Platform - 2RU 144

Warranties 145

- 1-Year Limited Hardware Warranty 145
- EXCLUSIONS AND LIMITATIONS 145
- OBTAINING WARRANTY SERVICE..... 146
- APPLICABLE LAW 146
- EULA - End User License Agreement..... 147
- READ BEFORE USING 147
- SLA - Service Level Agreement..... 147
- 1. Introduction..... 147
- 2. Definitions 147
- 3. Service Levels for the Video Content Management System 147
- 4. Exceptions to Availability for the VCMS 148
- 5. Credits for Downtime for the VCMS..... 149
- 6. Support Services for the VCMS 149
- 7. Service Levels for Haivision Streaming Media Service 150
- 8. Credits for Outages of Haivision Streaming Media Service 150
- 9. No Secondary End User Support 150

Getting Help 151

About This Document

Conventions


The following conventions are used to help clarify the content.

Typographic Conventions and Elements


<i>Italics</i>	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>.

This guide explains how to set up, configure, and manage Haivision Media Platform (HMP) systems.

New Product Features

Haivision Media Platform (HMP, formerly "Calypso") Version 2.6 introduces the following new features, as well as enhancements to existing capabilities (varies by Edition and licenses).

Administrator Choice of Default Player (Modern or Legacy)

Version 2.6 introduces a new native HTML5 player for desktop browsers (via HLS) for use in all supported browsers. This player is called the "Modern" player.

- The Modern player supports a Flash fallback mode for older browsers that do not support HTML5 video.
- The Modern player may require slightly more buffering time than the Legacy player, due to differences in HLS vs. RTMP.

The existing Flash-based player is called the "Legacy" player.

The choice of player is a system-wide setting. The System Administrator sets desktop browser playback to either Modern or Legacy.

Both newly installed v2.6 systems as well as systems upgraded to v2.6 will default to the "Legacy" Player. The "Modern" Player can be enabled in Administration -> System Settings -> Security.

See [Configuring Secure Streaming](#).

Selective Stream Distribution (varies by Edition)

System administrators now have the option to proactively create live stream routes with a new feature called Distribution Policies. Each Distribution Policy contains a list of Media Gateway locations (e.g., NYC, Chicago, Montreal) to which live sessions and scheduled events will be sent. Content Creators who wish to limit the distribution of a session or live event to specific locations can simply apply the appropriate Distribution Policy.

- By default, new Distribution Policies include the Default Location so that authenticated users in locations that are not specifically included in the Distribution Policy are still able to receive the stream.
- For systems upgraded to v2.6: All existing sessions will follow the existing Location Topology (i.e., all sessions and events are distributed to all locations).

See [Locations Policies](#).

Portal Branding (system-wide)

System administrators can now:

- Replace the Haivision graphics (large shark and small brand) that appear on the signin page.
- Replace the Haivision banner graphic at top left of the Web Interface.
- Replace the "favicon" application icon that certain browsers display in the tabs and bookmarks.
- Change the color of the top blue banner.

See [Re-Branding the User Interface](#).

Portal “Light Color” Scheme (system-wide)

System Administrators can now select a color scheme for the portal with light backgrounds and dark text for all users.

See [Re-Branding the User Interface](#).

User Interface Enhancements (highlights)

- Upcoming Live Events (within the next 24 hours) will be automatically shown in a new Portal Carousel at the top of the Portal page.
See "Portal" in the *Haivision Media Platform User's Guide* (Chapter 2: "Getting Started").
- A WYSIWYG editor has been enabled for the content description field, with support for rich text editing (bold, lists, inline images, etc.) and hyperlinks (open new browser tab/window).
See "Editing Information and Metadata" in the *Haivision Media Platform User's Guide* (Chapter 2: "Getting Started").

Enhancements to Existing Capabilities (varies by Edition and licenses)

- IPTV - A new IPTV Portal interface provides browser users access to live IPTV and navigation via the Electronic Program Guide (requires license and subscription) that is very similar to the interface on the Haivision Play Set-Top Box.
See "IPTV Portal" in the *Haivision Media Platform User's Guide* (Chapter 2: "Getting Started").
- IPTV - System Administrators can add custom program information (in XMLTV format via a watch folder) into the Electronic Program Guide which will appear inline with commercial TV programming (EPG subscription required).

Haivision Play Set-Top Box Capabilities (varies by Edition)

IPTV - The Electronic Program Guide has been updated and optimized for improved performance.

Introduction

Note

The intended audience for this guide is system integrators and administrators with administrative privileges.

For information on options available to non-administrative users, such as browsing content, working with sessions and videos, managing Portal content, and managing imports and exports, please refer to the *Haivision Media Platform User's Guide*.

Important

Because HMP capabilities vary by Edition (i.e., Workgroup, Site or Enterprise), some features mentioned in this guide may not be available on your system. For more information, see [Product Editions](#).

Topics Discussed

- [Haivision Media Platform Overview](#)
 - [Product Features](#)
 - [Product Editions](#)
 - [Multicast Support via Haivision Helper and Multicast Agent](#)
 - [HMP-Media Gateway Pairing](#)
 - [SRT \(Secure Reliable Transport\)](#)
 - [Appliance Options](#)
- [Physical Description](#)
 - [System Interface](#)
 - [LED Status Indicators](#)

Haivision Media Platform Overview

Haivision Media Platform (HMP) is a media recording, management and distribution platform designed to capture and share video content in real-time while providing organization and discoverability to video assets. HMP helps you organize, manage and share secure, high quality live and on-demand video to viewers on any screen/device – desktops, monitors and mobile devices – anywhere.

Haivision Media Platform offers three product Editions to allow you to choose the best solution for your organization: Enterprise, Site, and Workgroup, geared toward All Hands | IPTV | Performance Recording, respectively. For more information, see [Product Editions](#).

Haivision Media Platform is available as an on-premise solution (server appliances and/or VM appliances), cloud (on private data centers as well as leading public clouds), and as a hybrid solution (hosted in cloud or on-premises or both), with video distribution options tailored to each unique need and network infrastructure.

For information on server appliances, see [Appliance Options](#).

For information on installing and connecting to a server appliance or VMware server, please refer to the *Haivision Media Platform Quick Start Guide*.

Product Features

Key Haivision Media Platform features include the following:

Stream, Record, Play

Live stream, record multiple HD sources, or watch IPTV or VOD content.

- Broadcast live all hands and town hall meetings so employees can watch from remote offices, off-site locations or on the road.
- Live stream and record multiple HD sources simultaneously for multi-view, real-time monitoring.
- Deliver broadcast TV channels along with live internal content throughout your organization.
- Share videos and pre-recorded content (Video-On-Demand) with authenticated viewers.

Permission-Based Authentication

Support for Active Directory, LDAP and SSO ensures that administrators can easily and securely provision employees and set-top boxes with access to the designated content.

Security

Protect live and on-demand content from unauthorized viewing, copying, and redistribution with glass-to-glass AES 128/256 encryption.

Multicast/Unicast

Standards-based support for unicast and multicast ensures minimal IT intervention for WAN/LAN infrastructure.

Multisite eCDN (Enterprise Content Delivery Network)

Distribute live video to multiple locations worldwide without overwhelming the network.

High Quality Players

Haivision's hardware and software players provide broadcast-quality viewing experiences on any device.

Set-Top Box Management

Centrally manage and schedule when and where your video is displayed – in hallways, public areas, conference rooms, and auditoriums.

Metadata Tagging

Apply file-based and real-time metadata tags and keywords to make important content easy to find and manage.

Hybrid/Cloud

On-premise, cloud and hybrid video distribution options fit your unique needs and network infrastructure.

SRT

Haivision’s SRT (Secure Reliable Transport) technology enables the delivery of encrypted, high performance video over the public Internet.

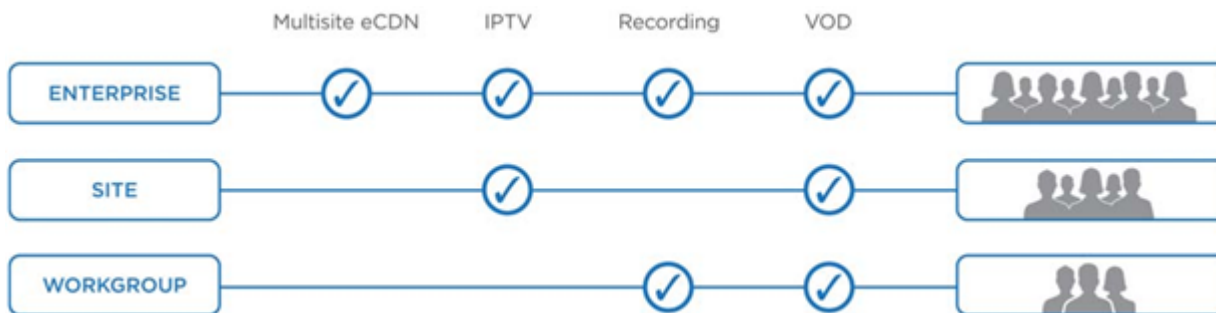
Watch On Any Screen

Deliver video securely to any screen, including desktops, mobile devices, and televisions. See Haivision Play for more information.

Enterprise Integration

Easily publish live and on-demand video to third-party portals such as Microsoft Share Point.

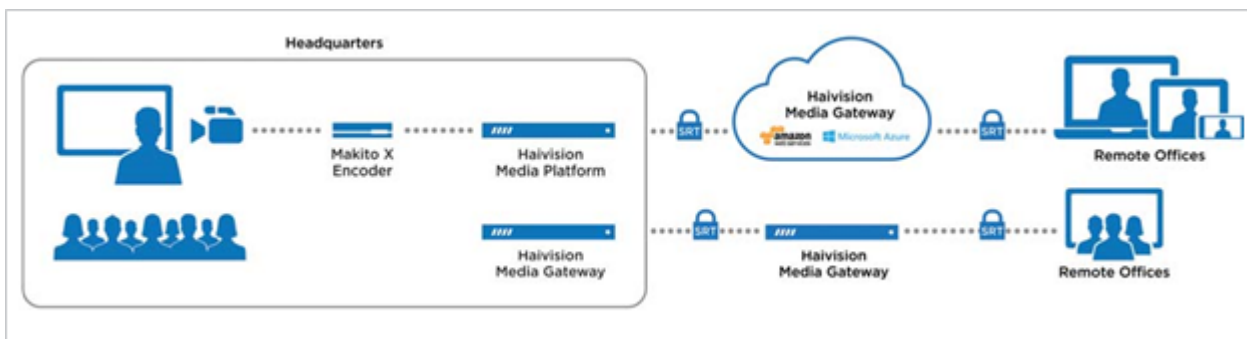
Product Editions



Enterprise Edition

Broadcast and Record All Hands, Town Halls and Internal Live Events Across Multiple Locations

The Haivision Media Platform **Enterprise Edition** enables you to securely distribute live and on-demand broadcast-quality video, such as CEO all-hands, company events, HR updates, product launches and IPTV to employees watching on any screen at headquarters, remote offices, and on the road.

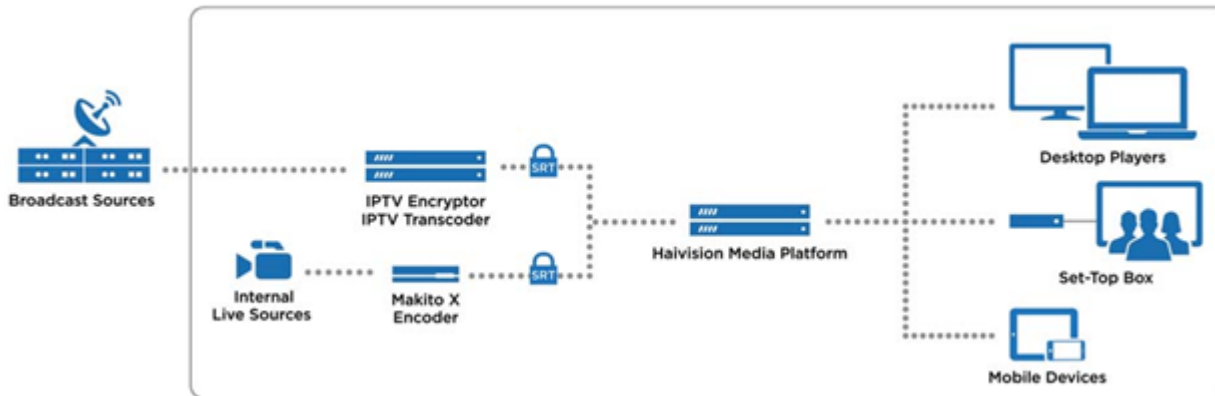


Site Edition

Distribute IPTV and Live Corporate Content to All Screens, Desktops and Devices in a Single Location

The Haivision Media Platform **Site Edition** enables you to manage and deliver broadcast television channels and other live content throughout your facility, including auditoriums, lobbies, break rooms, and

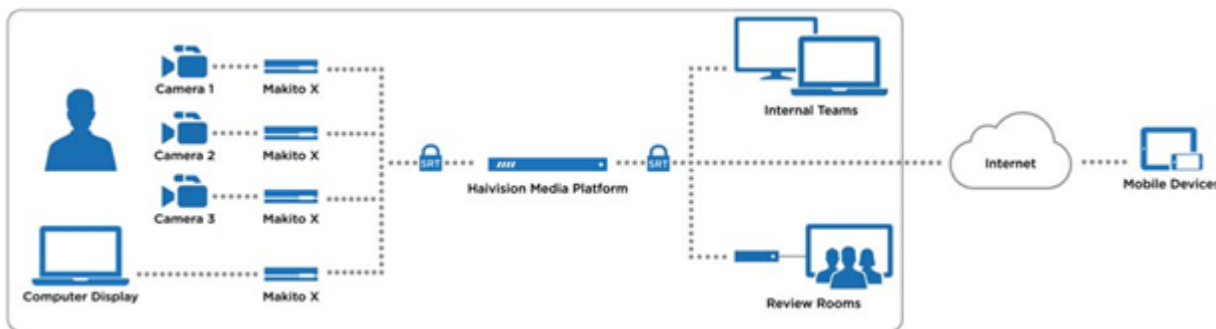
conference areas. The Site Edition is available in Base, Advanced, and Advanced VOD versions, from 10 live channels/100 concurrent users maximum, to up to 500 live channels/500 concurrent users.



Workgroup Edition

Performance Recording for Research Teams and Training Facilities

The Haivision Media Platform **Workgroup Edition** is designed to enable teams to watch and record multiple synchronized HD video sources for review and analysis. Users can apply metadata to track and manage important moments in the video. This edition is ideal for research, including usability testing, focus groups, simulations, and training. The **Workgroup Edition** is available in 5-1, 25-1, and 50-1 versions, supporting from 5 to 25 to 50 concurrent recording streams.



Note

Licensed features per Edition include the maximum number of sources/IPTV channels, maximum number of concurrent recordings, and Video On Demand (VOD). Haivision Media Platform Editions are expandable through licensing, for example, additional 2,500 user/device license packs, or 5 recording channel packs. For detailed information, please refer to Haivision's website at: <https://www.haivision.com>

Multicast Support via Haivision Helper and Multicast Agent

Important

To configure browser-based multicast using Media Gateway, the Haivision Helper application must be installed on each user's computer (either by single/manual install or mass-deployment via an .MSI package). Haivision Helper is a cross-platform (Windows and OSX) utility that launches a multicast agent to enable multicast support.

The Haivision Helper application and Installation Guide are available from the [Haivision Support Portal](#).

With Multicast Support on systems running the Haivision Helper application, HMP delivers a multicast agent to the user who receives a multicast Transport Stream and delivers a Web standard stream to the user's local Web browser. This helps reduce overbandwidth consumption on multicast enabled LANs.

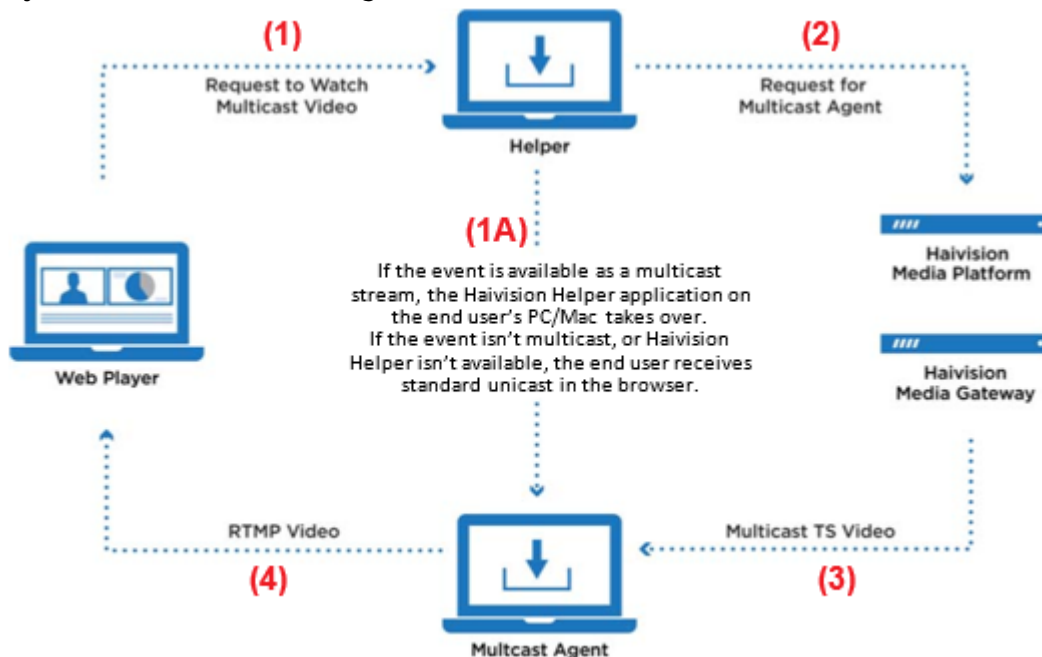
Following is a description of the process by which the Helper launches the multicast agent and enables multicast support:

1. **Request to Watch Multicast Video:** The end user clicks a link to a live video asset in their browser (on the HMP Portal or embedded player).

Note

The remaining steps are invisible to users.

2. If the event is available as a multicast stream, Haivision Helper on the end user's PC/Mac takes over. If the event is not multicast, or Haivision Helper is not available, the end user receives standard unicast in the browser.
3. **Request for Multicast Agent:** On HMP, Haivision Helper executes the multicast agent. If this is the user's first multicast request, Haivision Helper "fetches" the multicast agent from the nearest Media Gateway or HMP. The multicast agent is then held in cache for future use.



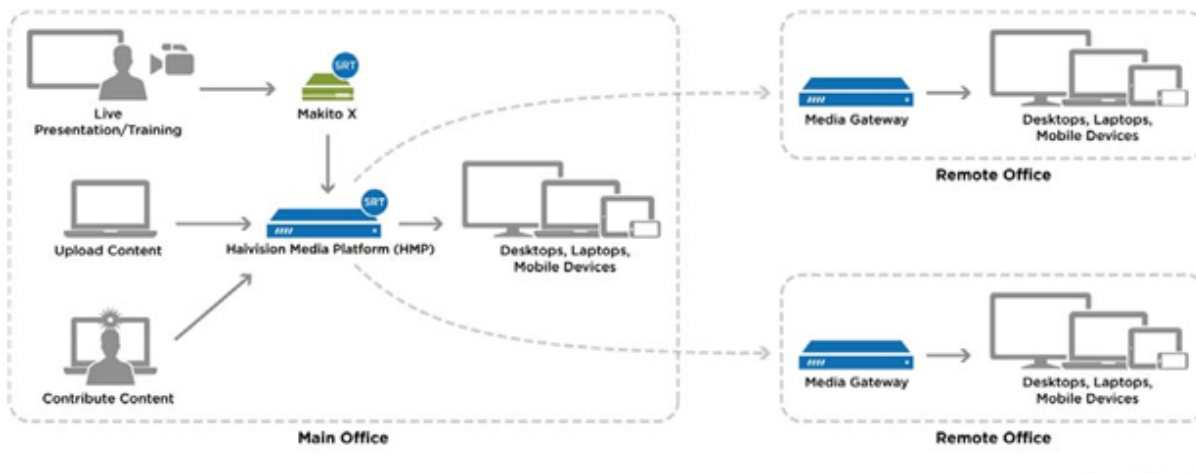
4. **Multicast TS Video:** The multicast agent joins the Multicast Group, and negotiates access and encryption for the video.
5. **RTMP Video:** The multicast agent converts the stream from Multicast TS to Native Web Video (RTMP is used for low latency), and the RTMP stream is delivered securely to the local browser over local host (all within the user's PC/Mac).

Note

For the latest information, please refer to the *Haivision Helper Installation Guide*, available from the [Haivision Support Portal](#).

HMP-Media Gateway Pairing

A Haivision Media Platform server may be integrated with multiple Haivision Media Gateways in order to distribute video to remote locations. The Media Gateways provide a network of caching for HMP live and on-demand videos, allowing users at each location to watch video from their local gateway.



SRT (Secure Reliable Transport)

Haivision Media Platform supports Haivision’s Secure Reliable Transport (SRT) from a Makito X encoder or Media Gateway as an input type. This enables end-to-end security and stream resiliency for recording and streaming applications. For more information, please refer to the *SRT Deployment Guide* (available from the [Haivision Support Portal](#)).

SRT is a transport technology that optimizes streaming performance across unpredictable networks, including the public Internet, for secure, reliable, low latency HD video. SRT as a protocol is included with Makito X encoders and decoders and Haivision’s Media Gateway. HMP sources can be set up using either UDP or SRT protocol.

Appliance Options

Haivision Media Platform is available either as a 1U or 2U appliance (shown in the following figures).

Haivision Media Platform 1U System

- 25/50 or 50/100 Mbps recording/playback
- Active Directory support
- approximately 5 to 10 HD sources simultaneously (expandable)
- 1.8 TB RAID storage.



Haivision Media Platform 2U System

- 50/100 to 200/400 Mbps recording/playback
- Active Directory support
- approximately 10 to 40 HD sources simultaneously (expandable)
- 6.6 TB RAID storage.



For more information, see the following section, [Physical Description](#).

Physical Description

Note

To install and connect to your Haivision Media Platform physical server or VMware server, please refer to the *Haivision Media Platform Quick Start Guide*.

System Interface

Haivision Media Platform provides either two or four 1 Gb Ethernet (GbE) Network Interface Card (NIC) ports for both traffic and management.

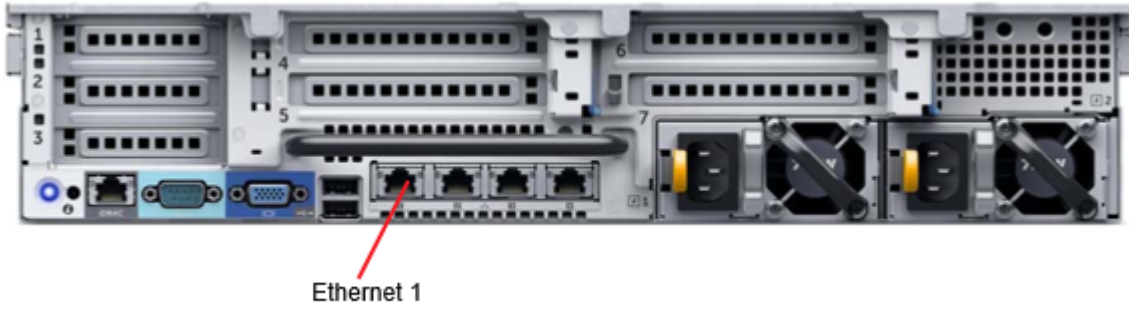
- 1U system: two ports.
- 2U system: four ports.

The RJ-45 connectors are located on the rear of the appliance.

Ethernet Connection - Rear View (1U System):





Ethernet Connection - Rear View (2U System):



LED Status Indicators

The LED colors and flashing (blinking) speed indicate the status (operational state) of the appliance.

1U System LEDs

Indicator	Icon	Description
Front Panel		
Power-On		Power-on indicator lights when the system power is on. The Power button controls the power supply output to the system.
LCD Panel		Displays system ID, status information, and system error messages.
		<ul style="list-style-type: none"> • LCD lights blue during normal system operation • LCD lights amber when the system needs attention, and the LCD panel displays an error code followed by descriptive text.
Front & Back Panel		
System Identification Buttons		Can be used to locate a particular system within a rack. When one is pressed, the system status indicator on the back flashes until one of the buttons is pressed again.

LED Status Indicators - Sample Front panel (1U System):



LED Status Indicators - Rear View (1U System):

System Identification button



2U System LEDs

Indicator	Icon	Description
Front Panel		
Power-On	⏻	Power-on indicator lights when the system power is on. The Power button controls the power supply output to the system.
Diagnostic Indicators		Diagnostic indicators (including Health, Hard-drive, Electrical, and Temperature) display error status during system startup.
		<ul style="list-style-type: none"> • Solid blue during normal system operation • LCD lights amber when the system needs attention, and the LCD panel displays an error code followed by descriptive text.
Front & Back Panel		
System Identification Buttons	ⓘ	Can be used to locate a particular system within a rack. When one is pressed, the system status indicator on the back flashes until one of the buttons is pressed again.

LED Status Indicators - Sample Front panel (2U System):

Power-On indicator
Diagnostic indicators
System ID button



LED Status Indicators - Rear View (2U System):



System Identification button

Getting Started

! Important

Before proceeding, make sure that the appliance is set up correctly and all necessary network and A/V connections are established.

For information on installing and connecting to your Haivision Media Platform physical or VMware server, please refer to the *Haivision Media Platform Quick Start Guide*.

Topics Discussed

- [Accessing the HMP Web Interface](#)
- [Navigating the Interface](#)
- [Basic Actions](#)
 - [Editing Items](#)
 - [Deleting Items](#)
- [Sharing Items](#)

Accessing the HMP Web Interface

i Note

Your browser may need to be Flash-enabled in order to use this site. System Administrators can set desktop browser playback to either the "Modern" HTML5 (via HLS) or "Legacy" Flash-based player. Both newly installed v2.6 systems as well as systems upgraded to v2.6 will default to the "Legacy" Player. For more information, see [Configuring Secure Streaming](#).

To access the Haivision Media Platform Web interface:

1. Open a Web browser of your choice, such as Chrome, Firefox, Safari, Microsoft Edge, or Internet Explorer (IE11).

2.

i Note

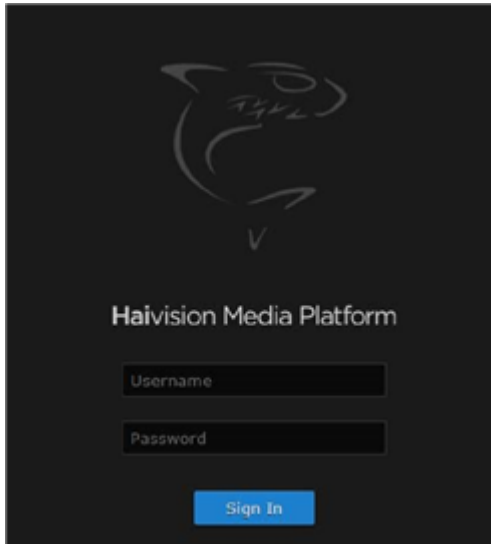
Haivision Media Platform ships with a default IP address of 10.5.1.3

3. If you see a Security Certificate warning, click **Proceed anyway** (or equivalent) to accept the certificate and continue to the Sign-in screen.
4. On the Sign-in screen, type the Username and Password and click **Sign In** (or press **Enter**).

The default administrative Username and Password are:

Username: `haiadmin`

Password: `manager`



Note

Note that your initial admin credentials may have been set to something other than `haiadmin` / `manager`, if requested. In this case, please contact Haivision Technical Support to retrieve this information.

Important

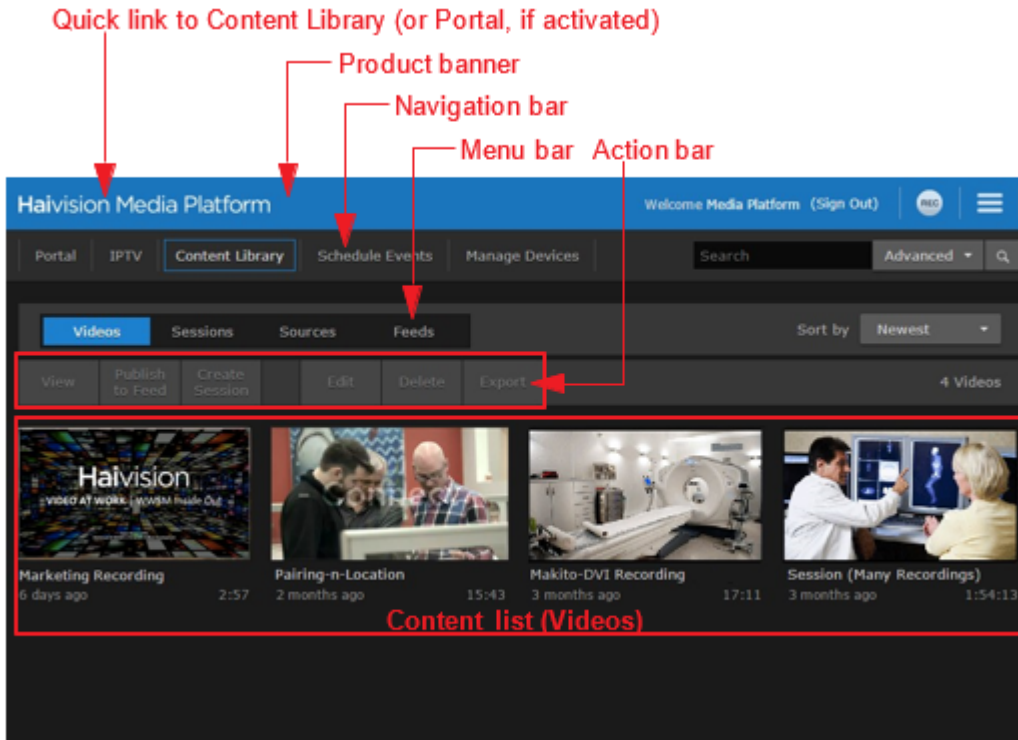
`haiadmin` is a special "system user" intended primarily for initial setup and system troubleshooting. It is not intended for regular use because it has unrestricted access privileges that cannot be changed. For day-to-day system control and administration, you are strongly advised to create a regular (administrative) user with a secure password.

As a security measure, be sure to change the default password for the `haiadmin` account.

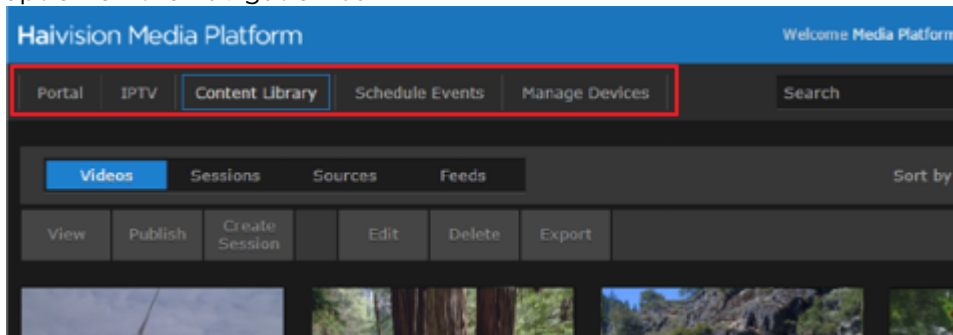
To change the current user password, click the user name on the banner (next to "Welcome").

Navigating the Interface

When you first Sign in, the Haivision Media Platform Web interface opens to the Content Library (showing the Videos list, as shown in the following example). If you activate the Portal, the Web interface opens to the Portal. If EPG is licensed on your system, the IPTV link will show on the navigation bar.

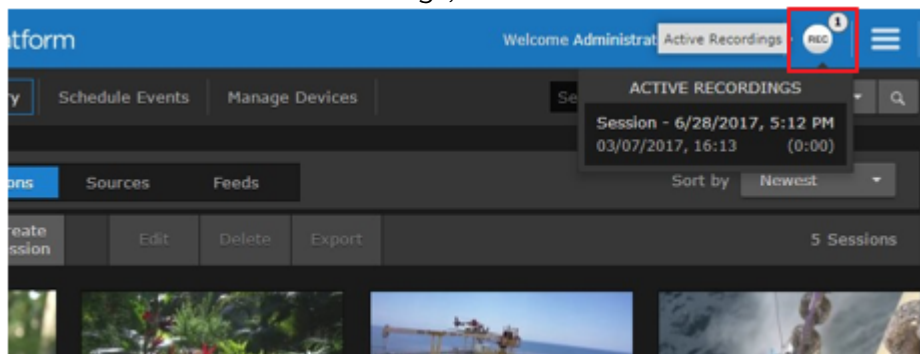


- To open the Portal, view live IPTV content, or schedule an event or manage set-top boxes, click the option on the navigation bar.




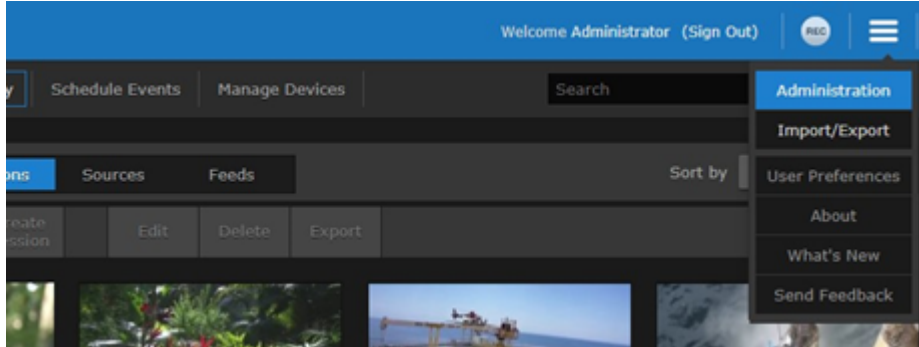
Clicking an option opens the selected screen.

- To view a list of active recordings, click the  icon on the banner.



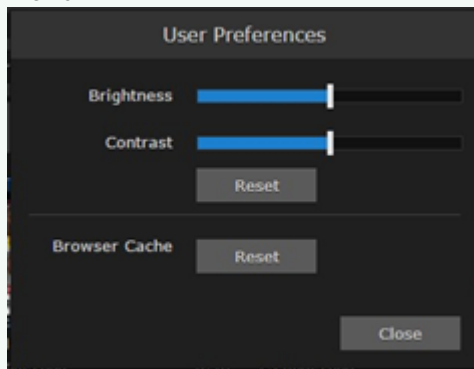
Clicking on a recording in the list takes you to the Viewer for that recording.

- To navigate the Administration or Import/Export screen, click  icon on the banner and select from the navigation drop-down menu.



✓ Tip

To display a list of new Haivision Media Platform features, select **What's New** from the navigation drop-down menu. To adjust the brightness and contrast, or reset the Haivision Media Platform browser cache, select **User Preferences** from the navigation drop-down menu.



After successfully signing in, system integrators and administrators will need to go to the Administration screen (see [Configuring HMP.](#))

For an overview of the Web interface, including viewing and search options, see the *Haivision Media Platform User's Guide*.

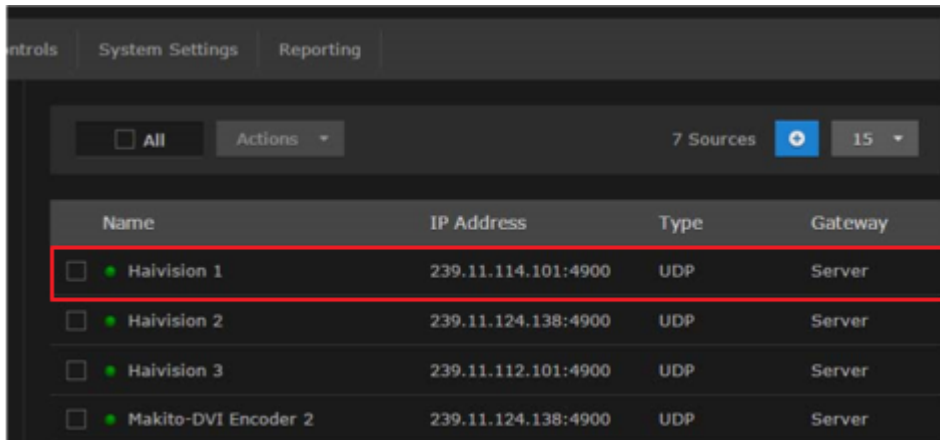
Basic Actions

This section shows how to perform basic editing, deleting, and sharing tasks that recur throughout HMP configuration and administration. These tasks may be applied to items such as feeds, locations, and sources on the Administration screens.

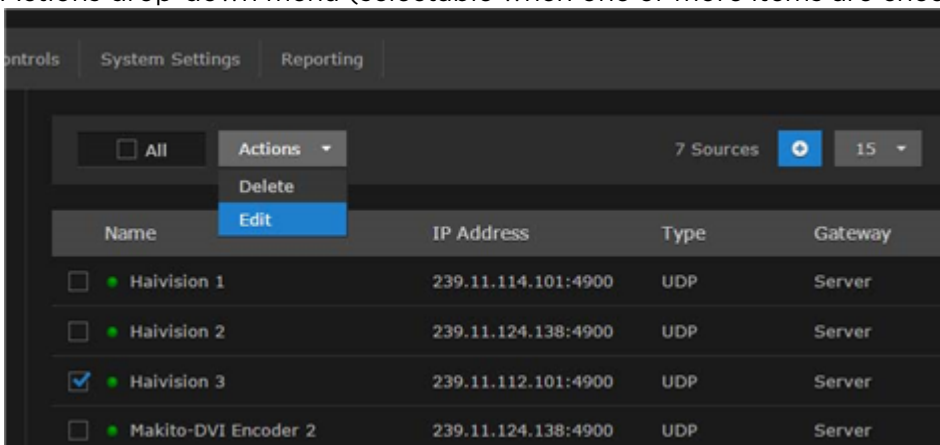
Editing Items

To edit items:

1. On a list such as the Administration Sources list (example shown below), select an item to edit by mousing over the item in the list and clicking anywhere in the row.



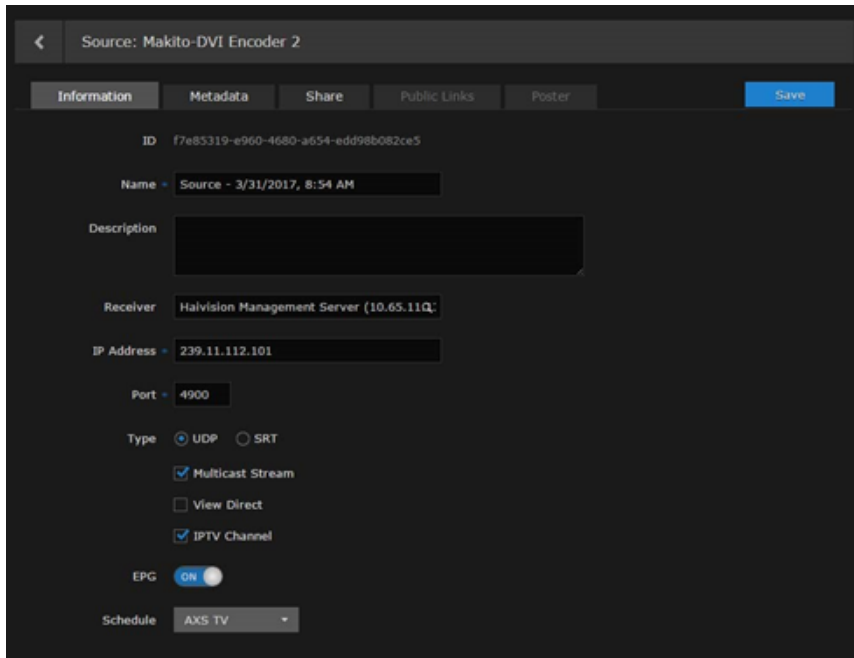
Or you can check the checkbox next to one or more items (or check All) and select **Edit** from the Actions drop-down menu (selectable when one or more items are checked).



Note

If you select multiple items, in some cases, the Edit menu option is not available, or the Information pane contains only a limited subset of values such as the Description.

Selecting an item from the list opens the Information pane, such as the following Source example.



2. On the Information pane, enter or select the value(s) to modify the item.
3. Click **Save**.
4. To assign metadata to the item (where applicable), click the **Metadata** tab. For details, see [Configuring Sources](#) to assign metadata to sources, or the *Haivision Media Platform User's Guide* to edit Metadata for Sessions and Videos.
5. To share the item, click the **Share** tab. For details, see [Sharing Items](#).



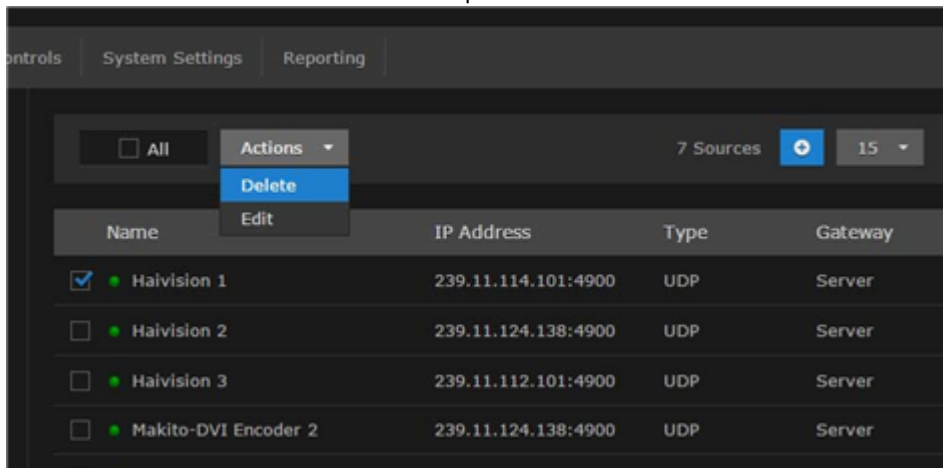
Tip

When editing sessions (Content Library screen), you can also define Public Links. To do so, click the **Public Links** tab. For details, see the *Haivision Media Platform User's Guide*.

Deleting Items

To delete items:

1. Check the checkbox next to one or more items in the list (or check **All**).
2. Select **Delete** from the Actions drop-down menu.



3. Click **Confirm** (or where applicable, select **Delete** from the warning dialog).

The selected item(s) will be removed from the list.

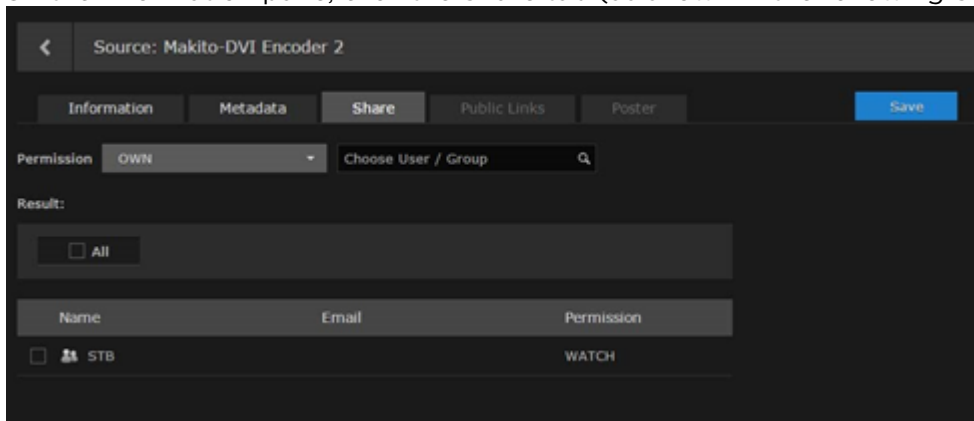
Sharing Items

You can share items such as feeds, sources, videos, and sessions with other users or groups. You can specify access permissions on a per-user or per-group basis. Sharing is defined on the Share pane (by clicking the **Share** tab from the Information pane when setting up or editing an item).

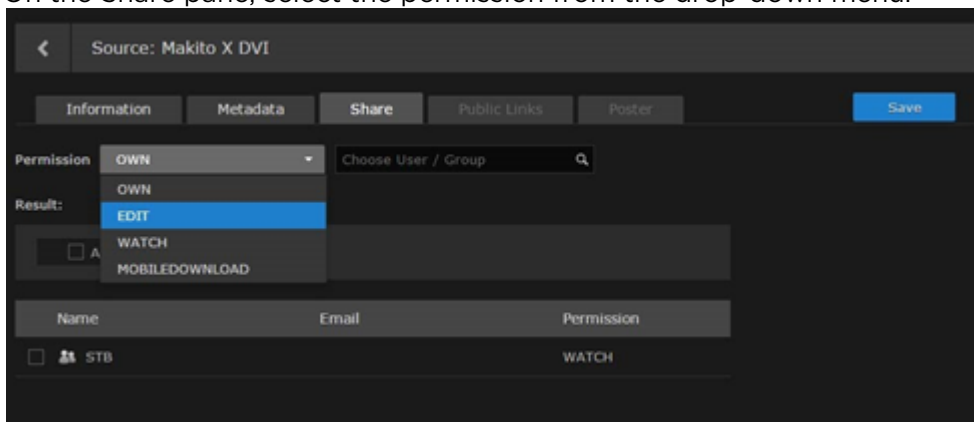
For information on the default share permissions, see the *Haivision Media Platform User's Guide* ("Sharing Items"). For information on the adding and modifying share permissions, see [Managing Share Permissions](#).

To share items with a user or group:

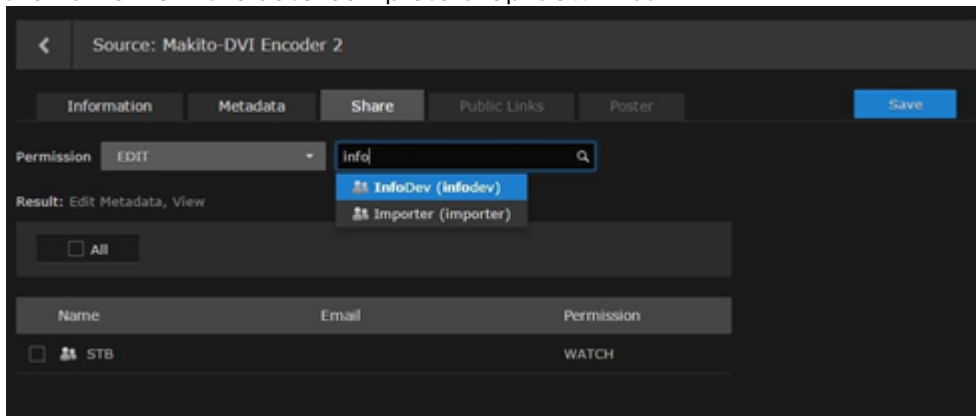
1. Select an item in the list, or check the checkbox next to one or more items and select Edit from the Actions drop-down menu.
2. On the Information pane, click the **Share** tab (as shown in the following Source example).



3. On the Share pane, select the permission from the drop-down menu.



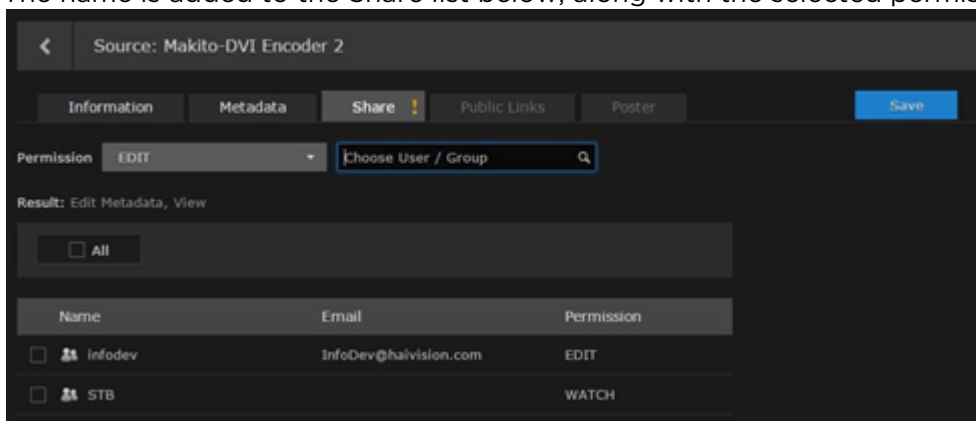
4. Type the first few characters of the first user or group's name in the search field, and then select the name from the auto-complete drop-down list.



Note

Only users and groups that have been assigned roles appear in the autocomplete list.

The name is added to the Share list below, along with the selected permission.

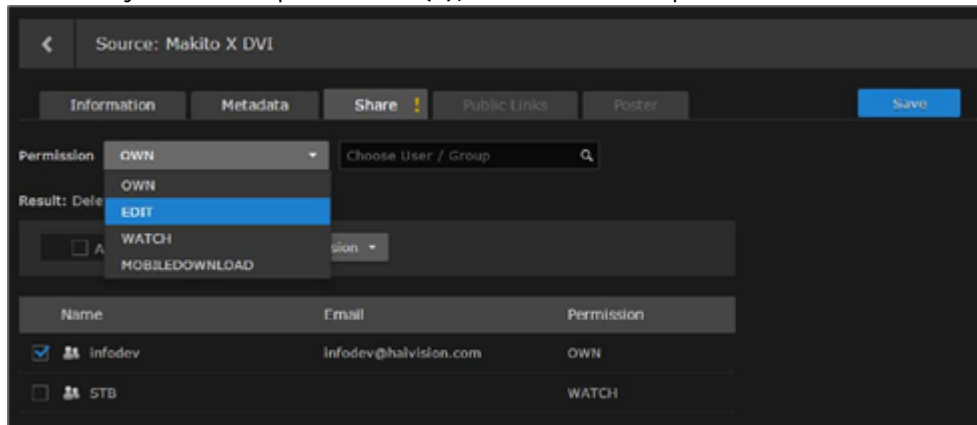


5. Repeat for each user (or group) with whom you wish to share the item.
6. Click **Save**.
7. Click to return to the list.

To modify or delete share permissions:

1. On the Share pane, select one or more names in the list.

- To modify the share permission(s), select the new permission from the drop-down menu.



- To delete the share permission(s), click **Delete**.
- Click **Save**.
- Click to return to the list.

Configuring HMP

This chapter describes how to configure your Haivision Media Platform (HMP), including the Portal, sources, IPTV channels, locations, paired Media Gateways, and Set-top Box administration.

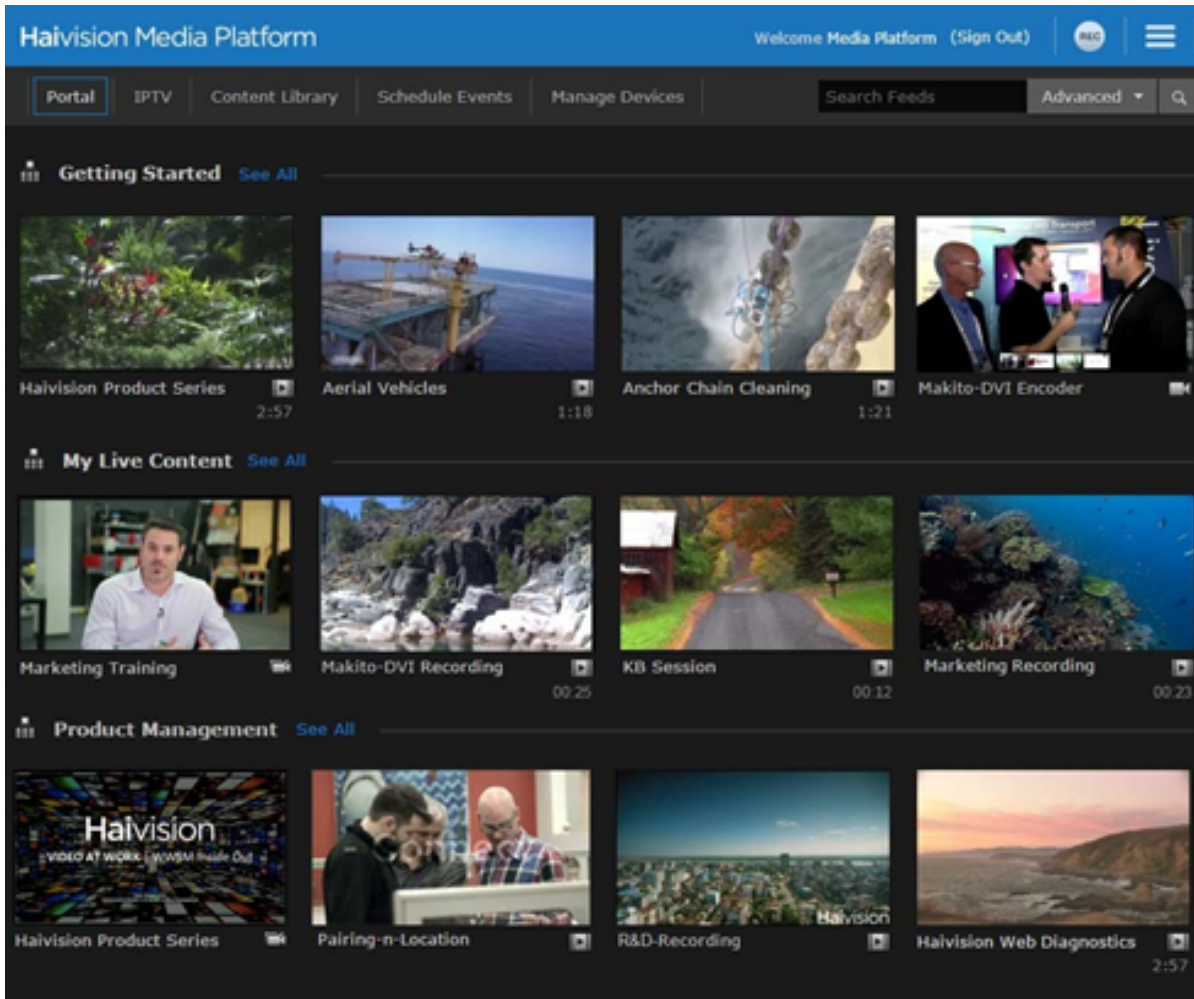
Topics Discussed

- [Configuring Feeds and Activating the Portal](#)
- [Managing Sources](#)
 - [Configuring Sources](#)
 - [Source Settings](#)
 - [Configuring Secure Reliable Transport \(SRT\) Sources](#)
 - [SRT Source Statistics](#)
- [Configuring IPTV Channels](#)
- [Configuring Export Destinations](#)
 - [Export Destination Settings](#)
- [Configuring Locations](#)
 - [Multicast Playback](#)
 - [Managing Locations](#)
 - [Troubleshooting Multicast & Diagnostic Tool](#)
 - [Location Settings](#)
 - [Locations Topology](#)
 - [Locations Policies](#)
- [Configuring HMP-Media Gateway Pairings](#)
 - [Configuring Paired Media Gateways](#)
 - [Configuring Multi-Site Live Distribution](#)
- [Configuring Metadata](#)
 - [Metadata Settings](#)
 - [Managing KLV Inputs](#)
- [STB Administration](#)
 - [Setting Device Defaults](#)
 - [Tagging Devices](#)
- [Managing Stream Outputs](#)
- [Re-Branding the User Interface](#)
 - [User Interface Settings](#)
- [Configuring Video and Session Settings](#)

Configuring Feeds and Activating the Portal

The Portal is an optional feature that Haivision Media Platform administrators can use to create and maintain a custom landing (home) page for your organization.

The Portal displays thumbnails of selected videos, sessions, and sources – grouped by video feed. When enabled, the Portal is the first thing users see when they sign into HMP.



From the Portal, viewers can browse feeds, search for items, and launch the video, session, or source in a default viewer. For the Portal user workflow, see "Exploring the Web Interface" in the *Haivision Media Platform User's Guide*.

From the Feeds pane, administrators can create, share, and manage Portal feeds, including turning the Portal on and off.

Once the Portal is turned on, content managers can populate the feeds and promote items to "Suggested" and "Featured" using the (Content Library) Feeds editor. For details, see "Managing Feeds" in the *Haivision Media Platform User's Guide*.

To view and manage video feeds:

1. On the Administration screen, click **Configuration** on the toolbar and then **Feeds** on the sidebar. The Feeds pane opens, displaying the list of defined feeds, if any (see following example).
2. To activate the Portal, toggle the **Portal Access** button to **On**. The "Portal" option will be added to the navigation bar (next to Content Library).
3. To allow Feed permissions to take precedence over the Share Permissions assigned to individual videos, sessions, or sources, toggle the **Use Feed Permission** button to **On**.

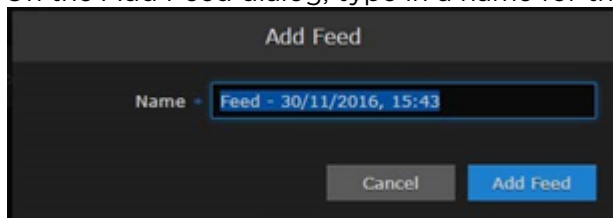
Note

By default, viewing permissions are enforced from the video asset itself, and users are prevented from watching content that is not shared with them. However, the **Use Feed Permission** toggle option allows administrators to reverse this. This setting saves content managers from having to share all the individual items in feeds. Instead they simply share the feed.

The next step is to begin adding feeds.

To add a video feed:


1. On the Feeds pane, click the **+** icon.
2. On the Add Feed dialog, type in a name for the feed.

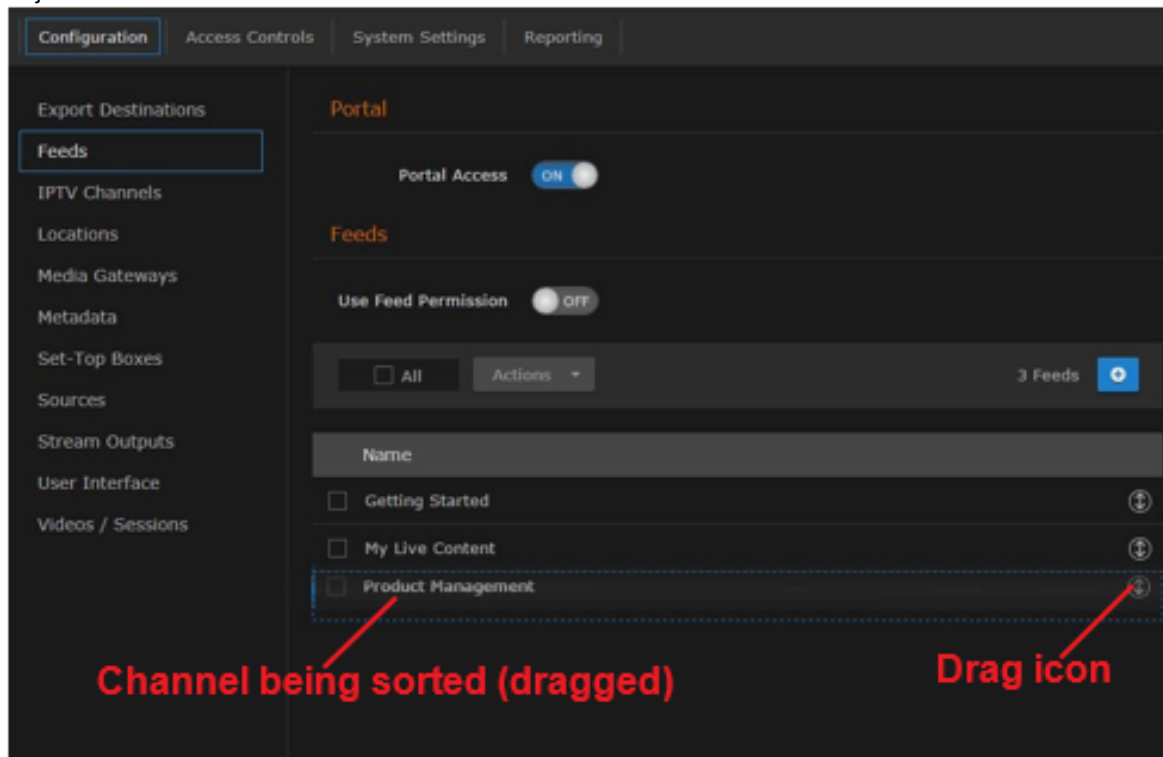


3. Click **Add Feed**.
The new feed will be added to the Feeds list.
4. To share a feed, select the feed from the list, and on the Information pane, click the **Share** tab. Follow the steps in [Sharing Items](#).

Note

See the note in the previous section re: Feed Permissions.

- To change the feed display order, on the Feeds list, click the  icon for a feed and drag it to the adjust the order of the list.



For details on populating the feeds using the (Content Library) Feeds editor, see “Managing Feeds” in the Haivision Media Platform User’s Guide.

Managing Sources

A *source* is an incoming unicast or multicast video stream or IPTV channel that can be recorded or viewed live. When setting up Haivision Media Platform, you need to define the streaming A/V sources to be available for content creators and other users to view and capture.

When adding a source, you can assign a name, description, IP address and port, and protocol type. By default, the source has an HMP receiver, but for multi-site live distribution, you can associate the source with a Media Gateway receiver. When editing the source information, you can add metadata as well as share the source with other users or groups.

The protocol types are UDP or SRT (Haivision’s Secure Reliable Transport) streaming protocol. With UDP, you can select multicast or unicast streaming. SRT optimizes streaming performance across unpredictable networks, including the public Internet.

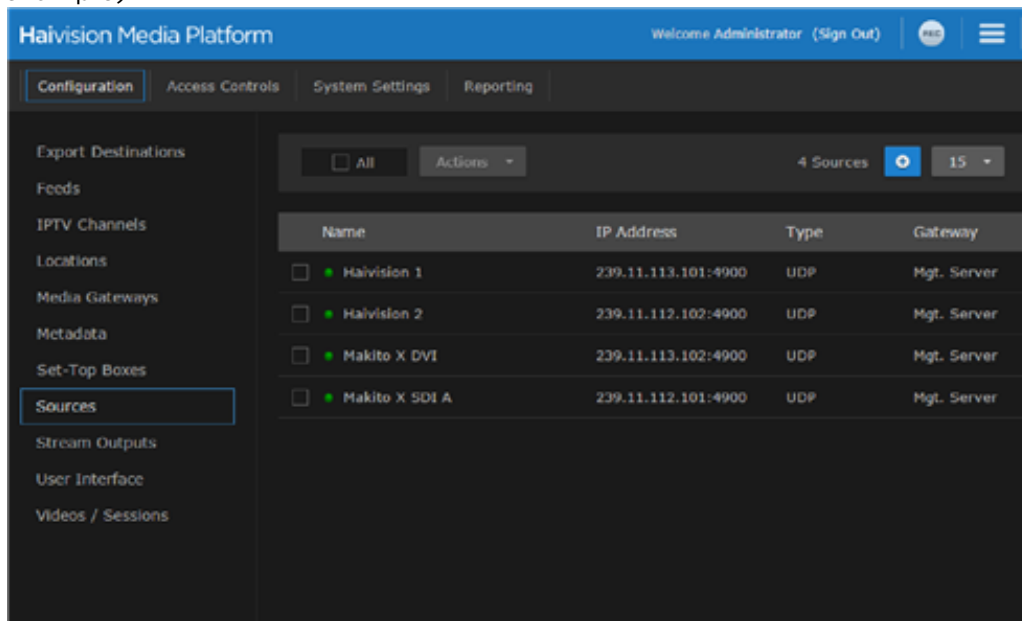
Note

Users can view source content before creating a session on the Content Library screen. See “Previewing Sources” in the *Haivision Media Platform User’s Guide*.

To view and manage sources:

- On the Administration screen, click **Configuration** on the toolbar and then click **Sources** on the sidebar.
The Sources list opens, displaying the list of defined sources for your platform (see following

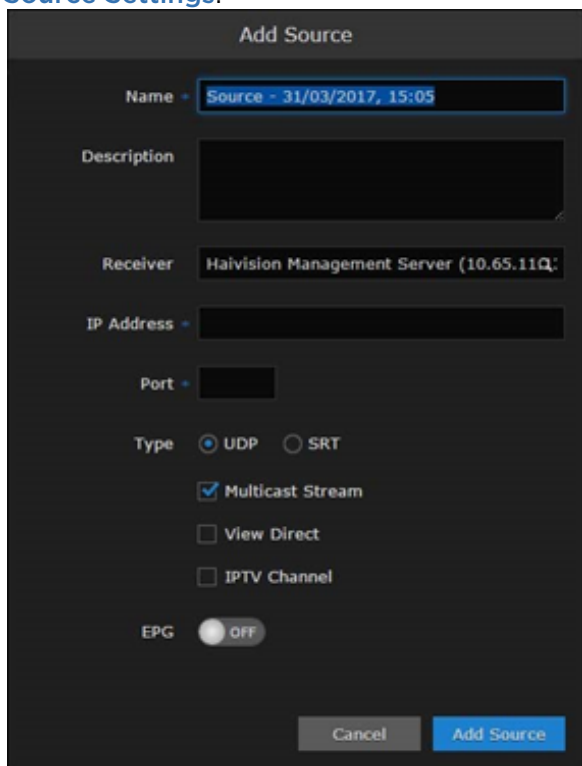
example).



Configuring Sources

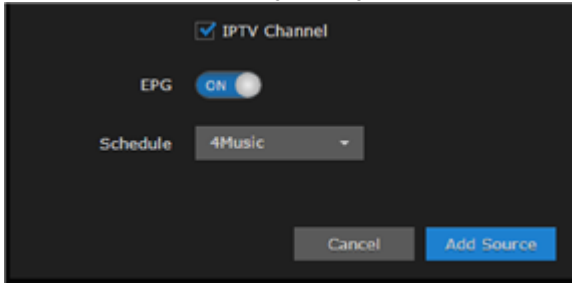
To add a source:

1. From the Sources list (Administration screen), click the **+** icon.
2. On the Add Source dialog, type in a name and enter or select the value(s) to define the source. See [Source Settings](#).



The fields vary depending on the Protocol Type selected and licensed features.

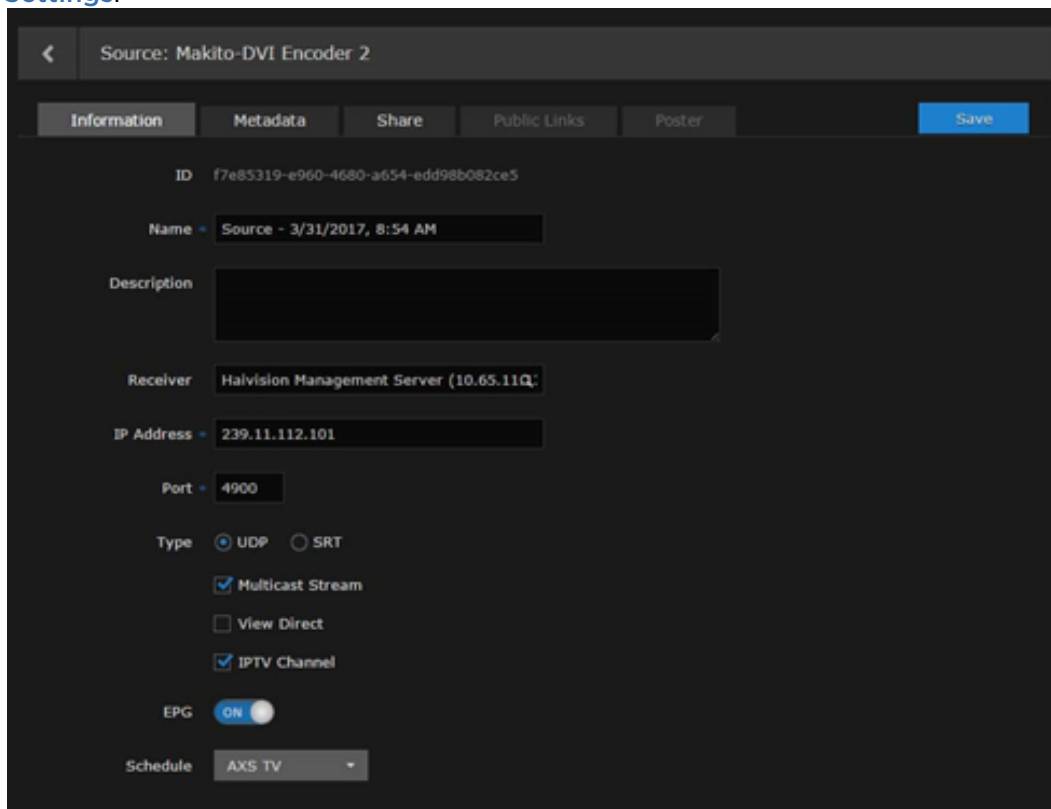
3. To configure the source for multi-site live distribution, select a Media Gateway from the Receiver list of paired media gateways for your platform (if any, see [Configuring HMP-Media Gateway Pairings](#)).
4. To configure a source using the SRT streaming protocol, select SRT for the Type and then fill in the additional fields. For details, see the "SRT Settings" heading in [Source Settings](#).
5. To enable the source for IPTV deployment, check the IPTV Channel checkbox.
6. To display EPG data on set-top boxes, toggle the **EPG** button to **On** and select the Schedule. (EPG must be licensed on your system.)



7. Click **Add Source**.
The new source will be added to the Sources list.

To edit sources:

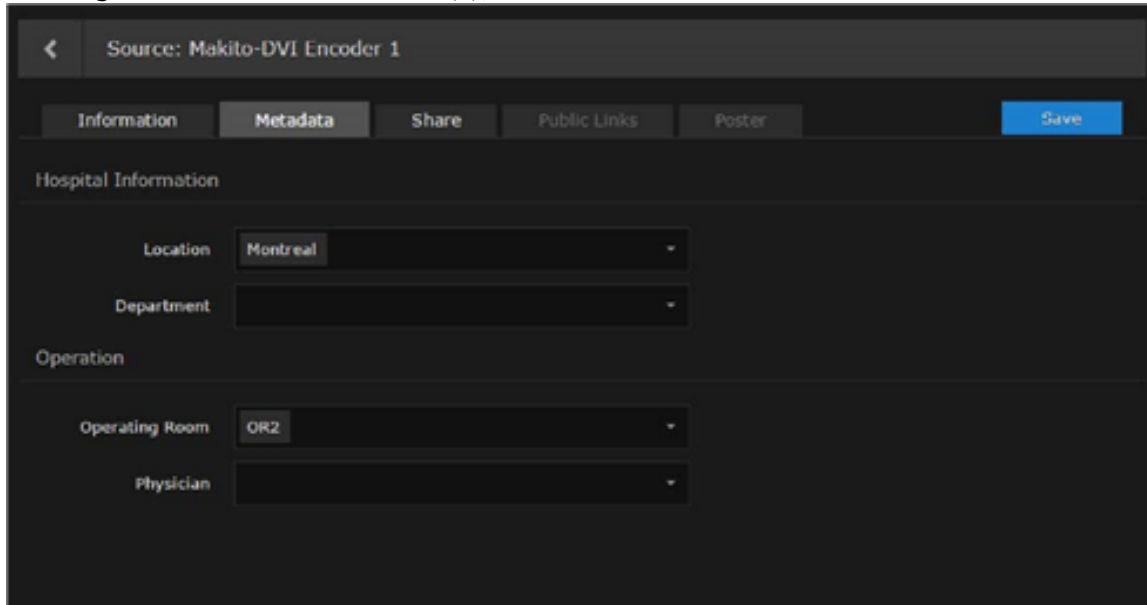
1. Select one or multiple sources in the Sources list.
2. On the Source Information pane, enter or select the value(s) to modify the source. See [Source Settings](#).



Tip

If you select multiple sources, you can only edit the Description field. To configure an SRT source, see [Configuring Secure Reliable Transport \(SRT\) Sources](#).

3. Click **Save**.
4. To assign metadata to the source(s), click the **Metadata** tab.



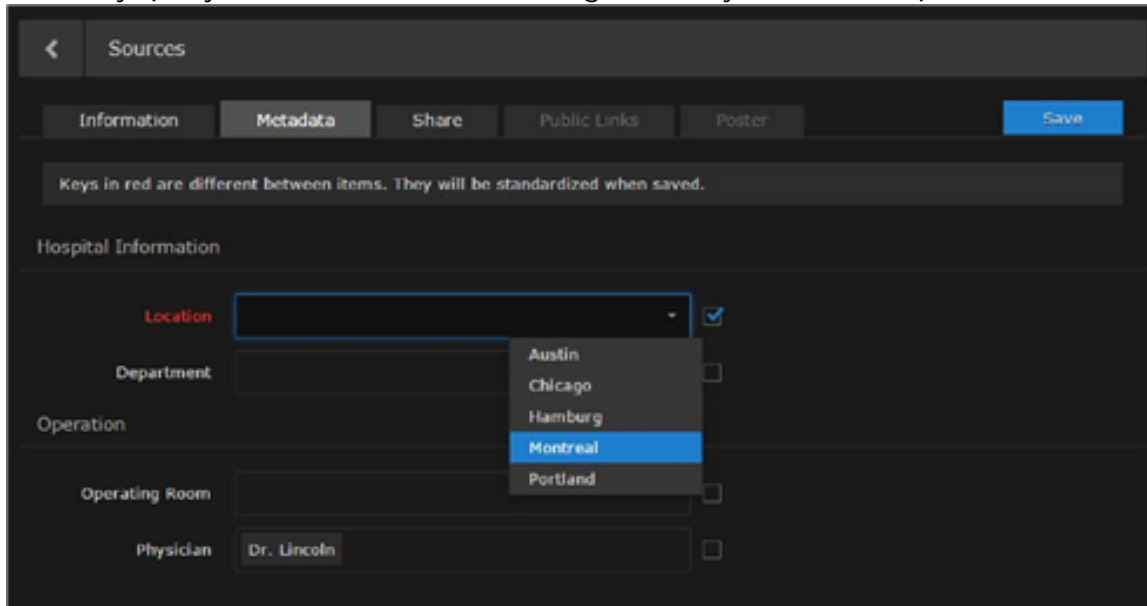
Metadata must be pre-defined on your system. See [Configuring Metadata](#).

5. On the Source Metadata pane, select the applicable metadata and value(s) from the drop-down list(s). See [Source Settings](#).

Note

If you select multiple sources and the metadata has “mixed” (i.e., different) values, you will see a warning across the top of the list and the metadata with mixed values will be displayed in red (as shown in the following example).

- To "bulk-edit" metadata values for multiple sources, check the checkbox beside each metadata key to modify. (Only checked items will be changed when you click **Save**.)



⚠ Caution




Bulk edits cannot be undone. For information on bulk editing metadata, see "Editing Information and Metadata" in the *Haivision Media Platform User's Guide*.

- Click **Save**.
- To share sources, click the **Share** tab and follow the steps in [Sharing Items](#).

Source Settings

The following table lists the Source configuration settings:

Source Setting	Default	Description/Values
Information		
ID	n/a	<p>i Note</p> <p>If you are using the HMP Command Line API, you will need to copy this ID to add this source to a session.</p>
Name	date, time	Enter a name for the source. This name will be selectable on the Sources list when content creators define sessions.
Description	n/a	Enter a description for the source.
Receiver	None	<p>To associate the source with a Media Gateway receiver for multi-site live distribution, select a defined Media Gateway from the list (see Configuring Multi-Site Live Distribution).</p> <p>i Note</p> <p>The default is the current HMP server.</p>
IP Address	n/a	Type in the IP address for the source

Source Setting	Default	Description/Values
Port	n/a	Type in the port number for the source
Type	UDP	Select the protocol type, either: <ul style="list-style-type: none"> • UDP: User Datagram Protocol • SRT: Secure Reliable Transport (see the SRT Settings section of this table)
Multicast Stream	Enabled	(Type must be UDP) Check this checkbox to indicate this is a multicast stream.
View Direct	Disabled	(Type must be UDP) Check this checkbox to specify that the Haivision Play Set-Top Box use the configured Source URL directly and not use an HLS version of the stream. If a multicast Source has View Direct enabled, the Web player starts the Multicast Agent to receive the source directly on the client and flip to the browser. If the Source is embedded in a session or does not have View Direct enabled, the video should still flow through the normal multi-site live distribution mechanism (which requires at least one Media Gateway).
IPTV Channel	Disabled	Check this checkbox to specify that the Source should be used in IPTV workflows. It will then be added to the IPTV Channels list (see Configuring IPTV Channels) as well as in the Program Guide on Haivision Play Set-Top Boxes. You can set up IPTV channels and assign access from here or from the IPTV Channels pane.
EPG		To enable EPG display on set-top boxes, toggle the EPG button to On. (EPG must be licensed on your system.)
Schedule		(EPG must be On) Select the schedule for the EPG display from the drop-down list.
SRT Settings		
Mode	Caller	Specifies the SRT Connection Mode: <ul style="list-style-type: none"> • Caller: HMP acts like a client and connects to a server listening and waiting for an incoming call. • Listener: HMP acts like a server and listens & waits for clients to connect to it. • Rendezvous: Allows calling and listening at the same time. <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p> Tip To simplify firewall traversal, Rendezvous Mode allows HMP and the encoder to traverse a firewall without the need for IT to open a port.</p> </div> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p> Note See the following section, Configuring Secure Reliable Transport (SRT) Sources.</p> </div>
Latency	n/a	Specifies how long HMP will buffer received packets. The size of this buffer adds up to the total latency. A minimum value must be 3 times the round-trip-time (RTT). <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p> Note Latency is for the SRT protocol only and does not include the capture, encoding, decoding and display processes of the endpoint devices.</p> </div>

Source Setting	Default	Description/Values
Passphrase	n/a	(Optional, must match encoder passphrase) This parameter is required if the stream is encrypted and is used to retrieve the cryptographic key protecting the stream. Range = 10-79 UTF8 characters
Statistics	n/a	Click to view the statistics for the SRT source. See SRT Source Statistics .
Metadata		
Metadata	n/a	<div style="border: 1px solid #ccc; padding: 5px;"> <p>Note Metadata must be pre-defined. See Configuring Metadata.</p> </div>

Configuring Secure Reliable Transport (SRT) Sources

Haivision’s Secure Reliable Transport (SRT) streaming protocol is designed to provide reliable and secure end-to-end transport between two SRT-enabled devices (such as a Makito X encoder or Media Gateway and Haivision Media Platform) over a link which traverses the public Internet. SRT optimizes video streaming performance across unpredictable Internet networks, recovering from packet loss, jitter, network congestion and bandwidth fluctuations that can severely affect the viewing experience.

For SRT-specific statistics and graphical display, see [SRT Source Statistics](#).

To create an SRT connection:

1. Make sure the encoder or Media Gateway and HMP are accessible from the public Internet by appropriate configuration of any firewalls.
2. Set up the SRT stream on the encoder or Media Gateway and start the stream connection.
3. Using the Statistics page, monitor the link statistics to see if the link is oversubscribed (and adjust the video encoder bitrate if it is).

For additional information required to set up and tune SRT streams, please see the *SRT Deployment Guide* (available through Haivision’s Support Portal at: <https://support.haivision.com>)

SRT Source Statistics

The following table lists the SRT Source statistics:

Source Statistic	Description/Values
Source	
State	The current operating status of the source, either: <ul style="list-style-type: none"> • Connected • Disconnected • Streaming • Stopped • Paused
Mode	The SRT Connection Mode.
Up Time	(only available when State is Connected) The length of time the source is actively streaming (dd:hh:mm:ss).
Bitrate	The stream bitrate (in kbps).

Source Statistic	Description/Values
Received Packets	Number of RTP or UDP packets received for that stream.
Used Bandwidth	The used bandwidth in kbps.
Signal Losses	The number of lost signals and reconnections since the stream started.
SRT	
Buffer	SRT buffer in milliseconds. Buffers are the received stream packets waiting to be transmitted. This statistic shows the portion of the buffers up to the first missing packet. In other words, the remaining time to transmit the missing packet before it's too late. The level of the buffer in absence of packet lost is just below the latency value. In presence of packets lost, it is between 0 and the latency value.
Latency	Maximum of the sender and receiver configured latency. For example: Sender Configured SRT Latency = 750 Receiver Configured SRT Latency = 20 The SRT Stats Latency (which is the current SRT connection applied Buffering Latency) = 750 (largest of the two). At startup, handshake exchanges the value configured on both sides and the largest one is selected. The receiver default is set to the minimum (20ms) so it can be completely controlled from the sender side.
RTT	Measured Round Trip Time (in ms).
Lost Rate	The rate of packet loss (in bps).
Lost Packets	Number of SRT packets reported missing. Most are recovered.
Packet Loss Rate	The rate of packet loss (in packets/second).
Skipped Packets	Number of lost packets not recovered.
Max Bandwidth	Maximum bandwidth (input stream rate * (1 + overhead)).
Path Max Bandwidth	Maximum link bandwidth measured. This can change due to cross traffic.
Decryption	Indicates whether Haivision Media Platform can decrypt the stream. Either Active, Initializing, Inactive (no passphrase), or Inactive (invalid passphrase).
Encryption	Indicates whether AES encryption has been enabled. Either None, AES-128 or AES-256.
Download CSV	Click to download the statistics in CSV ("Comma Separated Value") file format, which may be used to exchange data with applications such as Microsoft Excel.

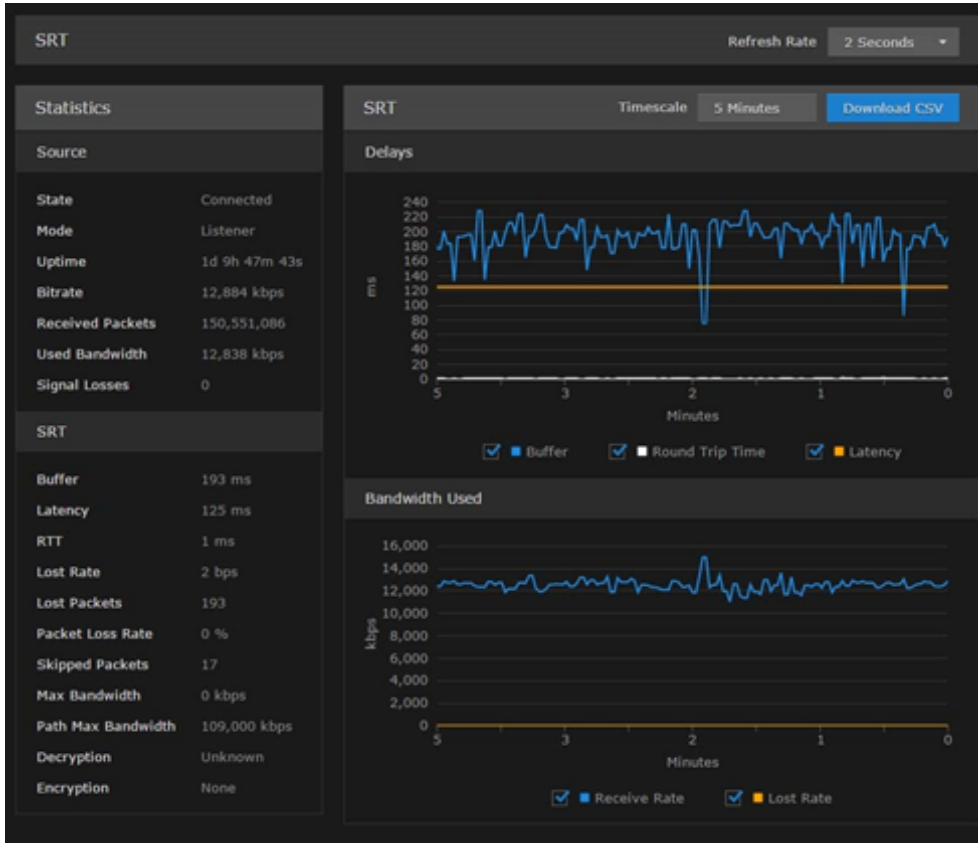
Note

Not all browsers can support the statistics graphics for SRT. You need an up-to-date version of Firefox, Chrome, Safari, or IE11 (or higher) to support the graphics in the SRT Statistics page.

Tip

For both the Delays and Bandwidth Used displays, you can select the inputs, such as the Buffer, RTT and/or Latency, or the Receive Rate and/or Lost Rate over the time period.

SRT streams include a graphical statistics display as shown in the following example:

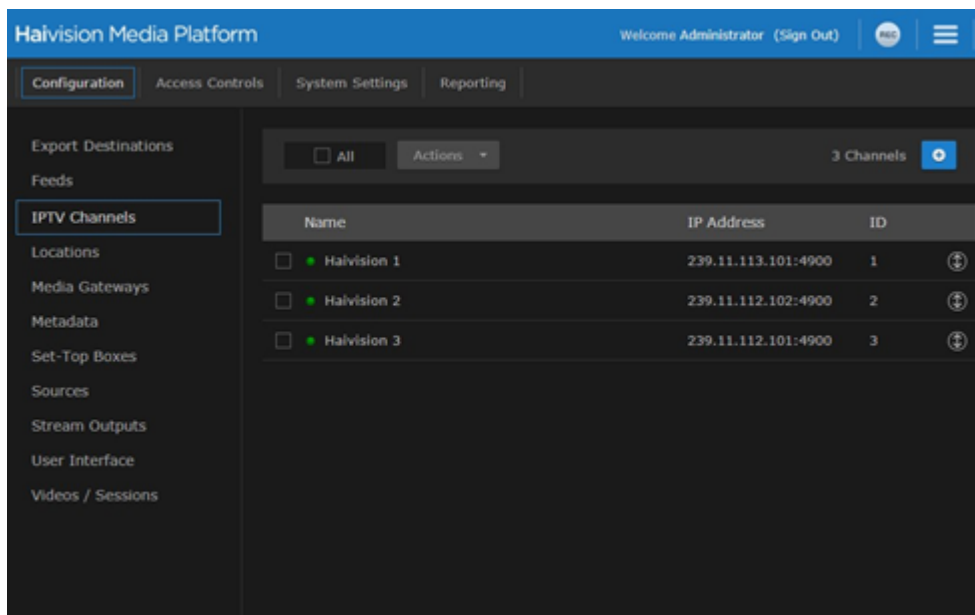


Configuring IPTV Channels


IPTV channels are sources that have been enabled for IPTV deployment via Haivision Play Set-Top Boxes. You can set up IPTV channels and assign access from here or from the Sources pane.

To view and manage IPTV channels:

1. On the Administration screen, click **Configuration** on the toolbar and then click **IPTV Channels** on the sidebar. The IPTV Channels pane opens, displaying the list of defined channels for your platform (as shown below).



To add an IPTV channel:

1. From the IPTV Channels pane, click the  icon.
This opens the Add Source dialog, with the IPTV Channel checkbox checked.
2. Type in a name and enter or select the value(s) to define the source. See [Source Settings](#).
3. Click **Add Source**.

The new source will be added to both the IPTV Channel and Sources lists

Configuring Export Destinations

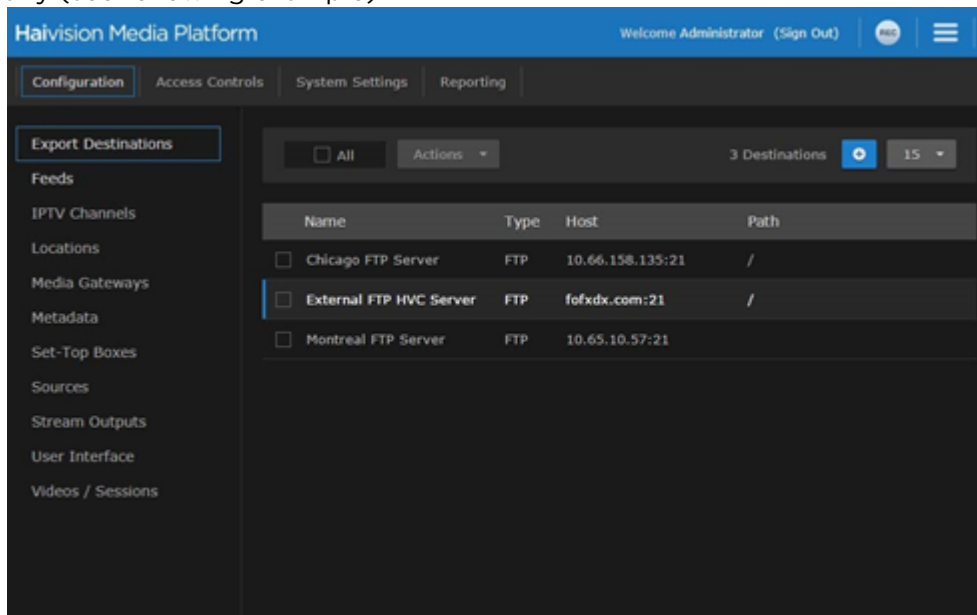
When setting up Haivision Media Platform, administrators can add export destinations for video and metadata to FTP/FTPS servers and the Haivision Video Cloud (HVC) platform.

These destinations will be available for users to select when exporting videos. For more information, see "Managing Exports" in the *Haivision Media Platform User's Guide*.

To view and manage the export destinations:

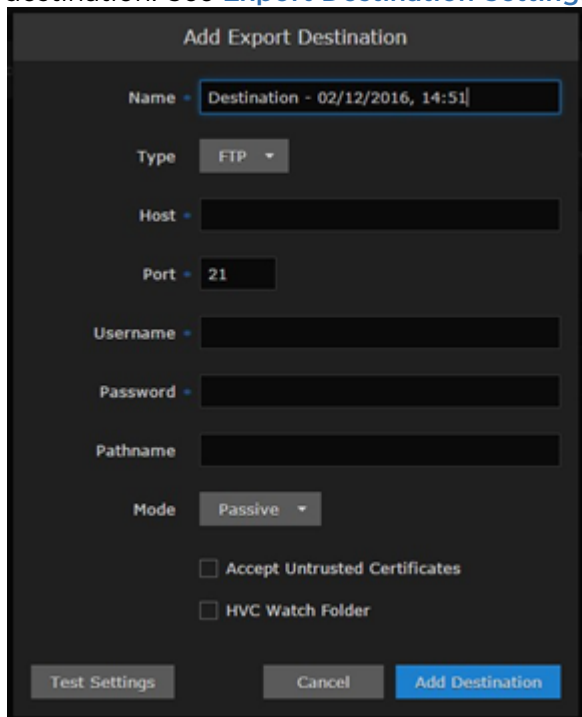
1. On the Administration screen, click **Configuration** on the toolbar and then click **Export Destinations** on the sidebar.
The Export Destinations pane opens, displaying the list of defined destinations for your platform, if

any (see following example).



To add an export destination:

1. From the Export Destinations pane, click the **+** icon.
2. On the Add Export Destination dialog, type in a name and enter or select the value(s) to define the destination. See [Export Destination Settings](#).



3. To test the connection, click **Test Settings**.

Note

You do not need to save in order to test settings.

4. Click **Add Destination**. The new export destination will be added to the list.

Export Destination Settings

The following table lists the Export Destination configuration settings:

Export Destination Setting	Default	Description/Values
Name	n/a	Enter a name for the destination. This name will be selectable on the Export Video list.
Type	FTP	Select the protocol type, either: <ul style="list-style-type: none"> • FTP: File Transfer Protocol • FTPS: FTP with explicit Transport Layer Security (TLS)
Host	n/a	Type in the server's DNS host name or IP address for the destination.
Port	21	Type in the port number for the destination server.
Username	n/a	Type in your login username for the site.
Password	n/a	Type in your password.
Pathname	n/a	(Optional) Type in the file path to use on the server, or leave blank for the server's default path
Mode	Passive	Select the FTP data connection mode provided by your FTP administrator, either: <ul style="list-style-type: none"> • Passive: Passive mode may be used in situations where the client is behind a firewall and unable to accept incoming TCP connections. By default, most Web browsers use passive (PASV) mode, which more easily traverses end-user firewalls. • Active: In active mode, the client creates a TCP control connection.
Accept Untrusted Certificates	Disabled	Check this checkbox to allow Haivision Media Platform to connect to an FTPS server that is using an untrusted SSL certificate.
HVC Watch Folder	Disabled	<div style="border: 1px solid #ccc; padding: 5px;"> <p>Note</p> <p>This file contains information about a recording (e.g. author, duration, key/value metadata) that can be ingested by platforms such as HVC. An HVC workflow automation script can be configured to use this watch folder on HMP.</p> </div>

Configuring Locations

When setting up Haivision Media Platform, depending on the Product Edition, administrators can define additional site locations (for example, satellite offices). The purpose is to define networks on which users reside in order to route users through the closest location.

Locations are typically used to set up HMP-Media Gateway pairings. The goal is to set up locations to "push" video as close as possible to users (at remote locations), using standard network definitions to identify where the user is and where the closest streaming device is (i.e., Media Gateway).

Note

For more information on HMP-Media Gateway pairing, see [Configuring HMP-Media Gateway Pairings](#). For details on Media Gateways, please refer to the *Media Gateway Administrator's Guide* as well as the Haivision website at: <https://www.haivision.com>

- To view a listing of the incoming and outgoing links between the currently configured locations, see [Locations Topology](#).
- To create Distribution Policies to manage live stream routes, see [Locations Policies](#).

Multicast Playback

With Multicast Support, HMP delivers multicast outputs from Media Gateway(s) directly to browsers running on users' desktops (PC/Mac) when the network supports multicast (MPEG2-TS).

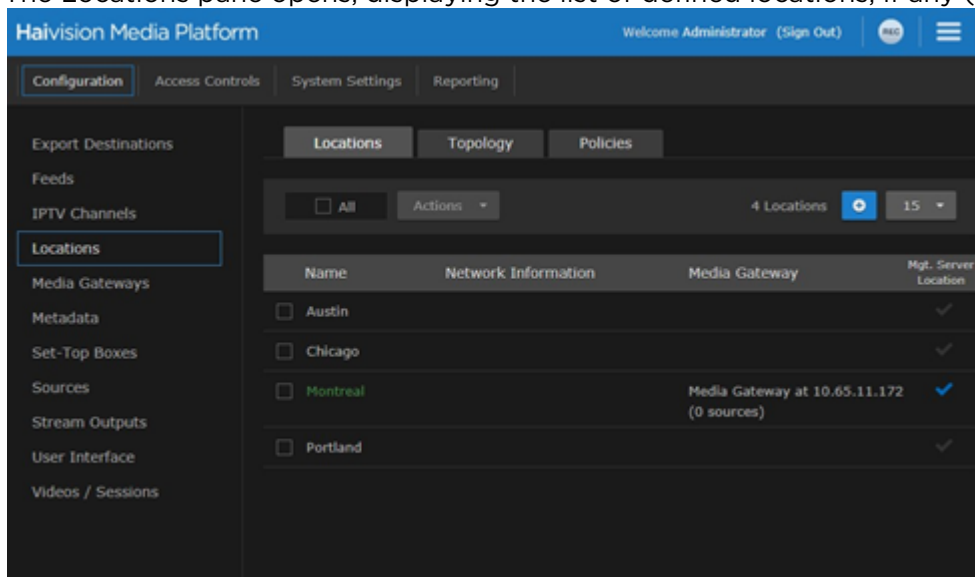
Important

To configure browser-based multicast using Media Gateway, the Haivision Helper application must be installed on each user's computer. For more information, see [Multicast Support via Haivision Helper and Multicast Agent](#).

Managing Locations

To view and manage locations:

1. On the Administration screen, click **Configuration** on the toolbar and then click **Locations** on the sidebar. The Locations pane opens, displaying the list of defined locations, if any (see following example).

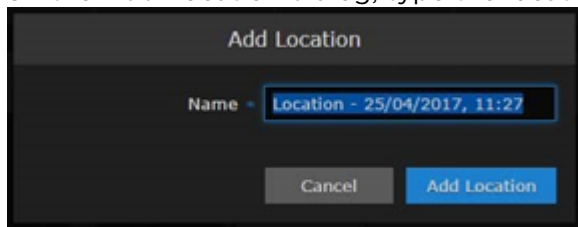


2. (If required) Check the checkbox under Mgt. Server Location to identify the location of the HMP management server.

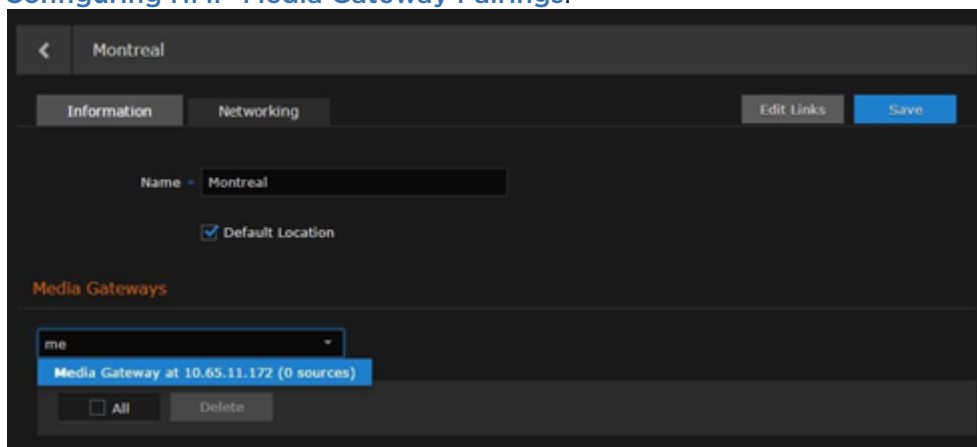
To add a site location:

1. From the Locations pane, click the **+** icon.

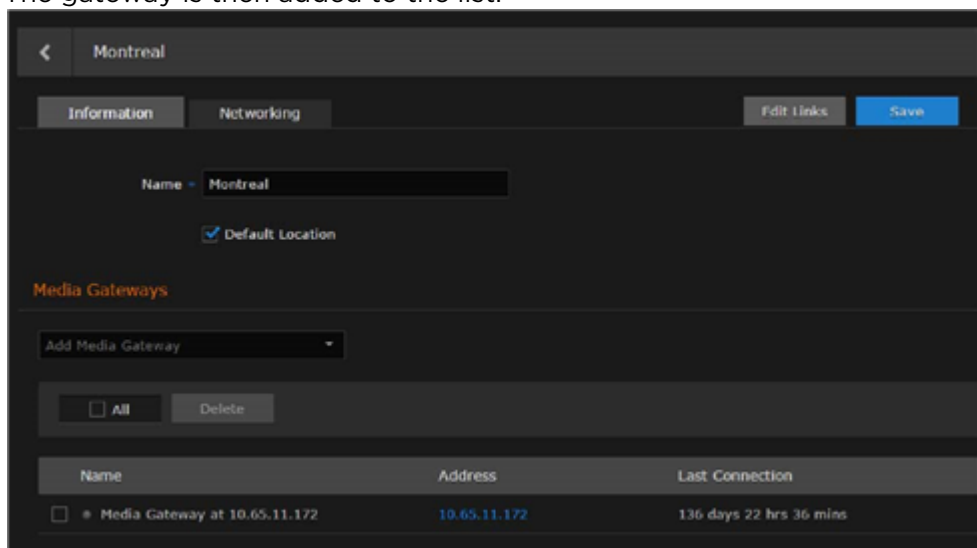
- On the Add Location dialog, type the location name in the Name text field.



- Click **Add Location**.
- On the Location Information pane, you can edit the location name, set the Default Location (see [Location Settings](#)), and configure its list of gateways.
- To select a gateway, type the first few characters of the gateway name in the Media Gateway field and then select the name from the auto-complete drop-down list of available paired gateways. See [Configuring HMP-Media Gateway Pairings](#).

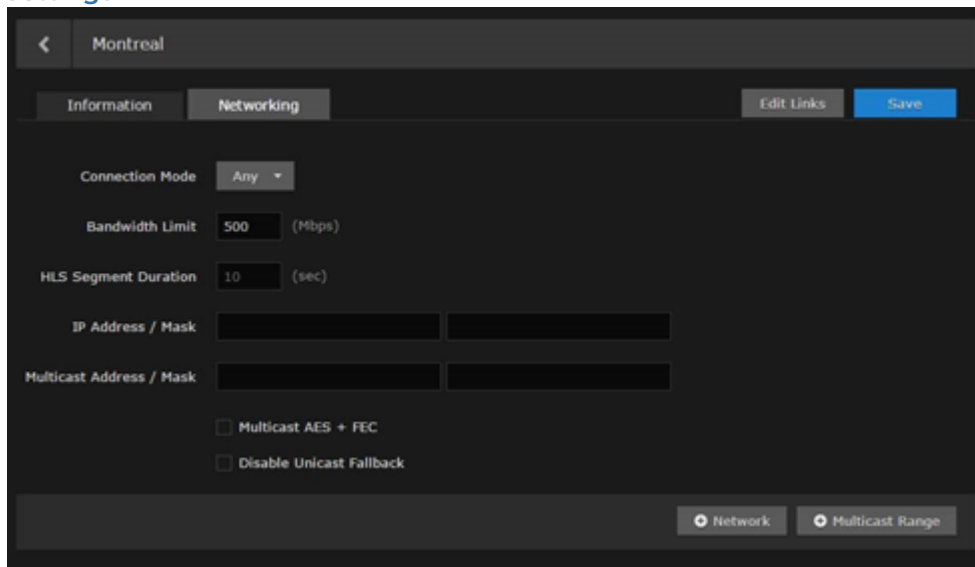


The gateway is then added to the list.



- To configure network settings as well as multicast playback, click the **Networking** tab and then fill in the fields to define the location. For details, see the "Networking" section of the table in [Location](#)

Settings.



7. To enable encrypted multicast (AES) for the location, check the Multicast AES + FEC checkbox.
8. To specify additional multicast addresses and subnet masks for the location, click **+Multicast Range**.
9. To specify additional IP addresses and subnet masks for the location, click **+Network**.

✓ Tip

Clicking Edit Links navigates to the Location Topology pane with the location selected.

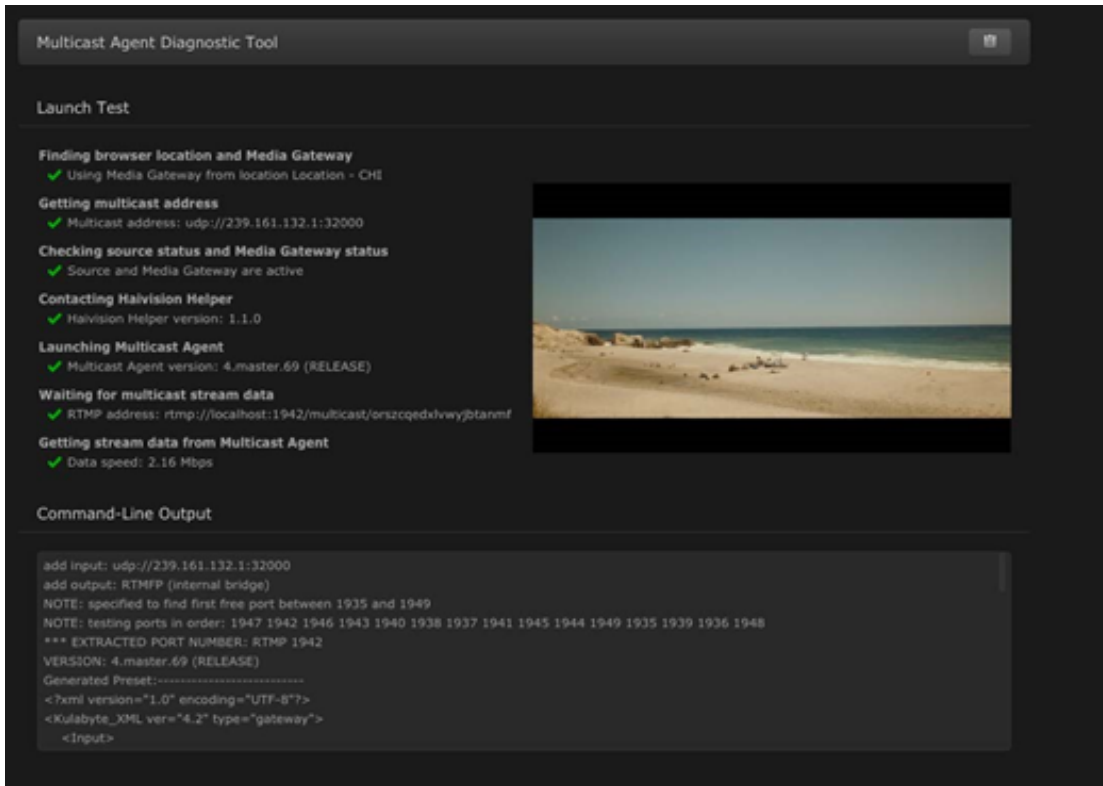
10. Click **Save**.

Troubleshooting Multicast & Diagnostic Tool

- Are HMP and the Gateway(s) properly configured?
 - Is multicast agent licensed?
- Is the source multicast enabled and provisioned?
- Is the playback device a supported Mac or PC?
 - Is the latest Haivision Helper installed on the Mac/PC?
- Is the playback device on a multicast enabled network/segment?
 - Is the device on WiFi?
 - Is HMP configured for unicast fallback; is that working?
- When you join the event, do you see "Launching multicast agent"?
- Right-click the video.
- Choose "View Multicast Agent Diagnostic Tool". If you see video here, you know multicast is working.
- Automatic fall-back to unicast (when necessary)
 - Smartphones and tablets don't (typically) support multicast
 - Network segments that don't support multicast (WAN gaps, WiFi)
 - MAC/PC without the Helper installed (or problem with Helper)

Multicast Agent Diagnostic Tool

On HMP desktop sessions and source players, you can access a Multicast Agent Diagnostic Tool pane by right-clicking on any player and clicking "View Multicast Agent Diagnostic Tool", which will cause the tool to open in a new tab. Tests done by the diagnostic tool will use the source that was in the player that was clicked in this way.



When the Multicast Agent Diagnostic Tool is opened, it performs a single test launch of the Multicast Agent and reports any failures due to bad HMP or user configuration, network issues, or other problems. It launches the Multicast Agent the same way that the normal HMP player does, but performs additional checks to help isolate problems with a multicast environment.

The pane has a **Copy to Clipboard** button that copies test results in a readable text format for easy sharing.

Location Settings

The following table lists the Location configuration settings:

Location Setting	Default	Description/Values
Mgt. Server Location	n/a	This identifies the location of the HMP management server. (The auto-generated routes on the gateway assigned to this location will include a loopback destination to HMP.)
Information		
Name	n/a	Enter a name for the location. This name will be selectable on the Locations list.
Default Location	Disabled	Check the checkbox to select this location as the default. The default location's Media Gateway will be used when a user whose IP is not in any of existing location ranges accesses HMP. The default location is displayed in green text in the Locations list.
Media Gateways	none	(Optional) Select a gateway that will deliver video to the location from the list of paired Media Gateways (if available). See Configuring HMP-Media Gateway Pairings .

Location Setting	Default	Description/Values
Networking		
Connection Mode	Any	<p>(Optional) Select the SRT mode to use between the locations on your network:</p> <ul style="list-style-type: none"> • Any • Caller • Listener <div style="border: 1px solid #f0e68c; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>This determines whether the location is always Caller or Listener in relation to other locations. If there is a conflict, it goes to Rendezvous mode. If set to “Any”, it defaults to Rendezvous mode.</p> </div>
Bandwidth Limit		(Optional) Enter the maximum bandwidth in Mbps) to control the rate of outbound traffic to this location.
HLS Segment Duration	10	(Optional) Enter the duration to balance lowlatency, tune-in time, and stream buffering (range = 1-15 seconds). In the case of HLS live, the duration must be no greater than15, or it will take too long for the playlist to become available and the initial request will be forced to time out.
IP Address/Mask	n/a	In the first field, type in an IP address for the location. This is a unique IPv4 address in dotted-decimal format (xxx.xxx.xxx.xxx). To specify a subnet mask for the location, type in a netmask in the second field, either in dotted-decimal format (e.g., 255.255.0.0) or CIDR notation. A subnet mask is a 32-bit mask used to divide an IP address into subnets and specify the network’s available hosts. You can specify multiple IP addresses / subnet masks for a location.
Multicast Address/Mask	n/a	For multicast delivery, specify the multicast address and subnet mask for the location. To disable multicast, leave the Multicast Address empty.
Multicast AES+FEC	disabled	<div style="border: 1px solid #90ee90; padding: 5px; margin-top: 10px;"> <p>Tip</p> <p>Typically you might turn off encryption due to interoperability issues with non-Haivision devices</p> </div>
Disable Unicast Fallback	disabled	<p>Check this checkbox to prevent users from falling back to HLS streaming if there are problems with the multicast. The default behavior is to give up on a multicast stream that can’t be received and go back to regular HLS viewing so that the video can always be seen. This adds latency to the stream but in small user environments doesn’t really have other negative effects.</p> <p>However, in large user environments where large numbers of users have trouble with multicast, the load from HLS streaming could overload the network or the server, so you may choose to disable the HLS fallback.</p>
+Network	n/a	Click to add another IP address and subnet mask for the location.
+Multicast Range	n/a	Click to specify additional multicast addresses and subnet masks for the location.

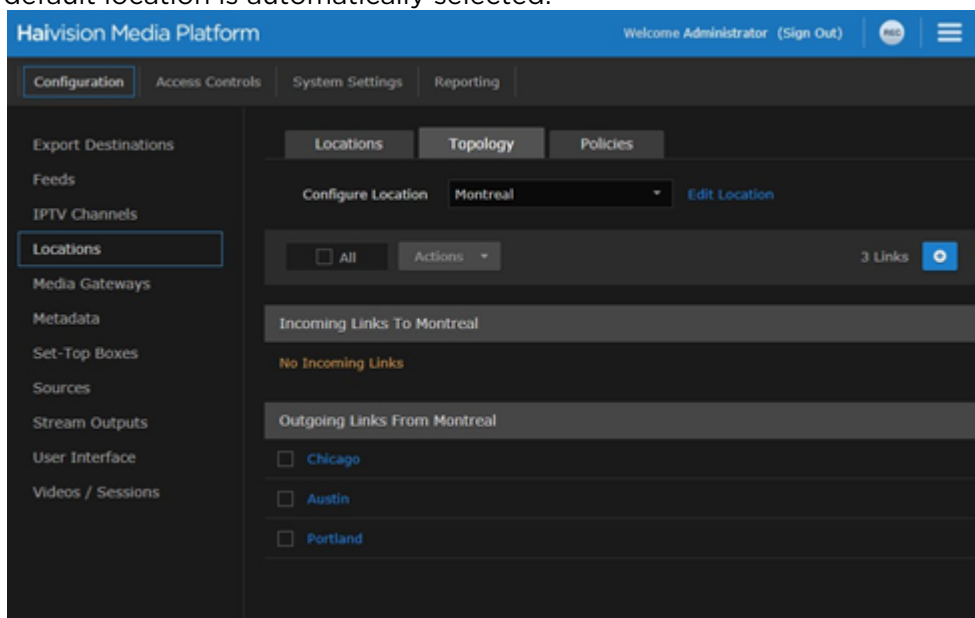
Locations Topology

The Locations Topology pane provides administrators a listing of the currently configured Media Gateway locations and shows the incoming and outgoing links between locations. This is designed for large installations where sending streams from the source location directly to *all* other locations is not appropriate or efficient.

By default, HMP automatically distributes sources from the primary HMP server. From the Locations Topology pane, administrators can configure the incoming and outgoing links between locations to control the flow of video from site to site. From here, you can add, as well as edit and delete links.

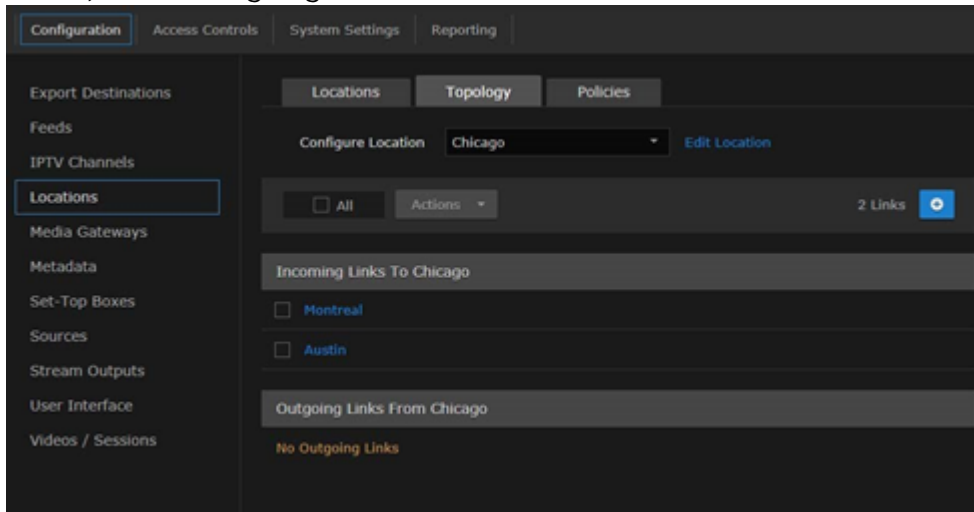
To view and configure locations topology:

1. On the Locations pane, click the **Topology** tab. The Locations Topology pane opens, displaying the list of Incoming and Outgoing links for the selected location, if any (see following example). The default location is automatically selected.



2. To filter the list by location, type the first few characters of the location name in the Configure Location search field and then select the name from the auto-complete drop-down list (if available). Or click **Edit Location** to open the Locations pane.
3. To explore the links to and from the current location, click a location hyperlink. In the previous example, if you click Chicago under Outgoing Links from Montreal, the pane will switch to Chicago for the Location and show the defined links, in this example, Incoming links from Montreal and

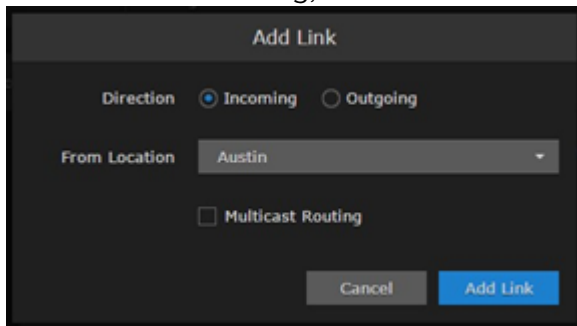
Austin, but no Outgoing links



4. Or you can click **Edit Location** to navigate to the Location Information pane for the currently selected location. (See Step #4 in [Location Settings](#).)

To add or edit a link to or from the current location:

1. From the Locations Topology pane, click the **+** icon.
2. On the Add Link dialog, select the direction and location.



3. **Tip**
 Typically, if your gateways are scattered, this should be kept off, but if your gateways are in one building, enable Multicast Routing.

Note
 When editing a link, its direction and location selection cannot be modified; only Multicast Routing can be edited.

4. Click **Add Link**.

Locations Policies

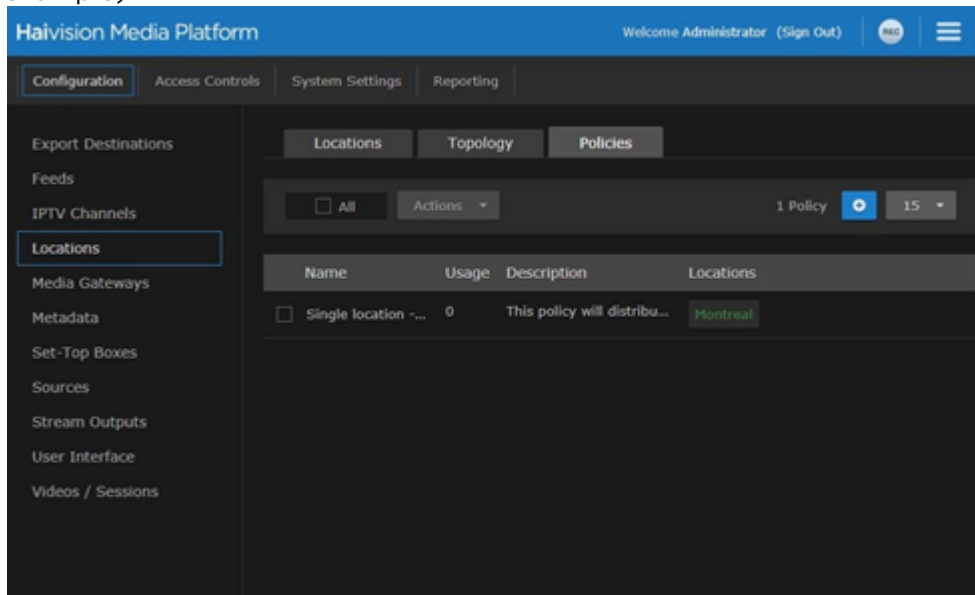
A new Version 2.6 feature called Distribution Policies provides administrators the option to set up selective stream distribution. Each Distribution Policy contains a list of Media Gateway locations (e.g., NYC, Chicago, Montreal) to which live sessions and scheduled events will be sent. Content Creators who wish to limit the distribution of a session or live event to specific locations can simply apply the appropriate Distribution Policy.

Note

For systems upgraded to Version 2.6, all existing sessions will follow the existing Location Topology (i.e., all sessions and events are distributed to all locations).

To view and manage locations policies:

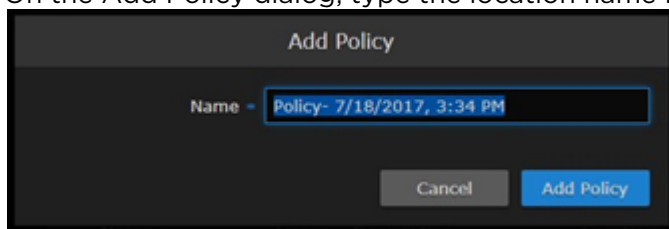
1. On the Locations pane, click the **Policies** tab.
The Locations Policies pane opens, displaying the list of defined policies, if any (see following example).



For each policy, the list shows the name, usage (i.e., the number of times the policy has been selected for a session), the description, and selected locations.

To add a location policy:

1. From the Locations Policies pane, click the **+** icon.
2. On the Add Policy dialog, type the location name in the Name text field.

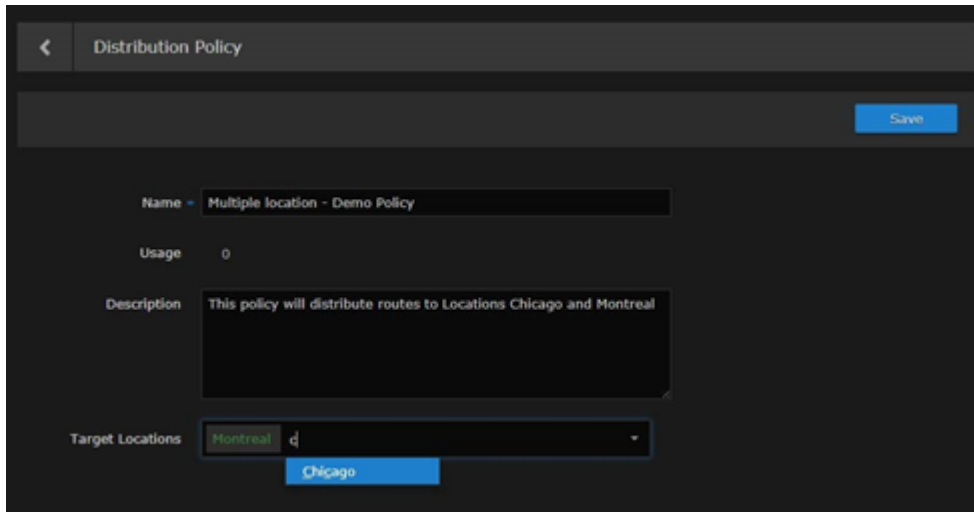


3. Click **Add Policy**.
- 4.

Tip

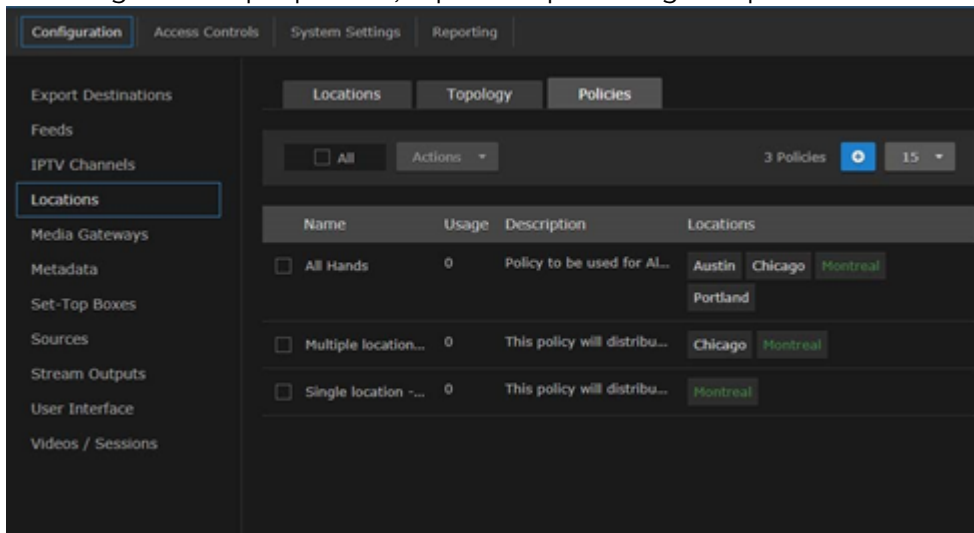
It's a good idea to provide a clear description of each policy to guide Content Creators as to which policy to use for different scenarios.

5. To select a target location, type the first few characters of the location name in the field and then select the name from the auto-complete drop-down list of available locations.



The policy is then added to the list.

- To configure multiple policies, repeat Step 1 through Step 5.



These policies are now available in the Sessions/Events Information pane for Content Creators to select.

Configuring HMP-Media Gateway Pairings

During setup, administrators can pair HMP with one or more Haivision Media Gateways in order to use the gateway as a proxy cache for media hosted by HMP. Media Gateway is a video streaming solution that gathers and distributes video streams to and from multiple locations.

HMP integration with Media Gateways is used to distribute video to distant site locations, typically pairing a single HMP server with Media Gateway appliances at each location. The Media Gateways provide a network of caching for HMP live streaming and on-demand videos. Users at each location will watch video from their local gateway device (although they will not interact directly with the gateway).

Note

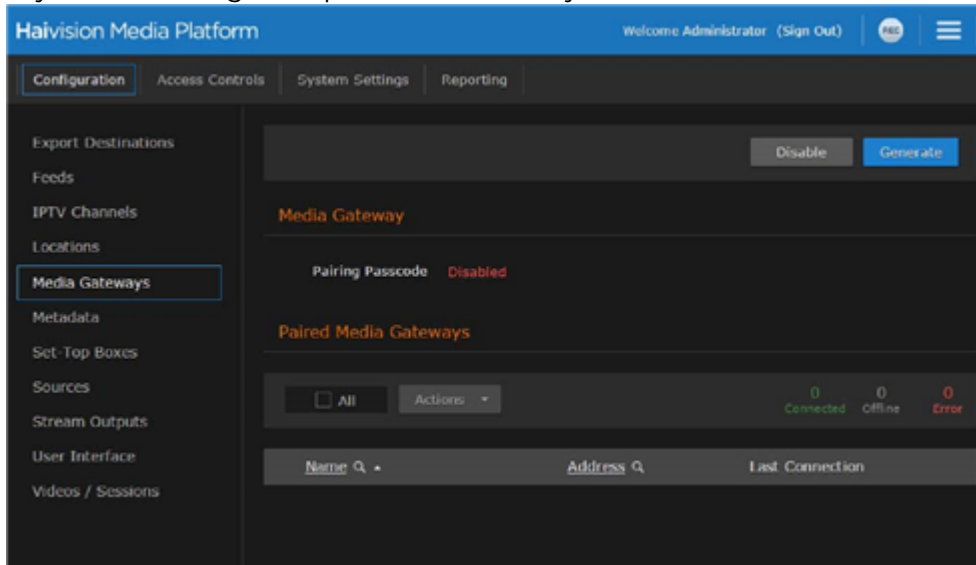
An HMP can be paired with multiple Media Gateways, but a Media Gateway can only be paired with one HMP.

Configuring Paired Media Gateways

To view and manage gateway pairings:

1. On the Administration screen, click **Configuration** on the toolbar and then click **Media Gateways** on the sidebar.

The Media Gateways pane opens, displaying the list of paired media gateways for your platform, if any. The following example shows a new system.



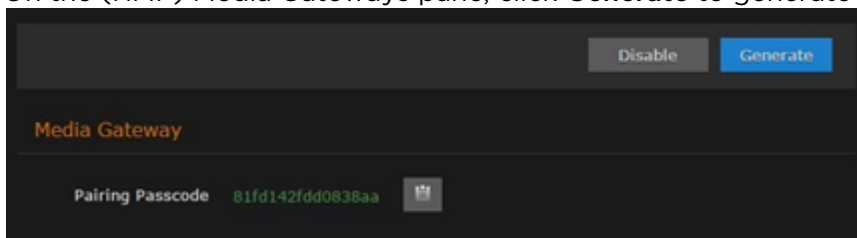
Note

Media Gateway devices initiate outbound requests to HMP to avoid issues with firewall transversal. By default, the HMP Pairing Passcode is “Disabled” as a security measure, meaning that HMP is not accepting any pairing requests.

To add a gateway pairing:

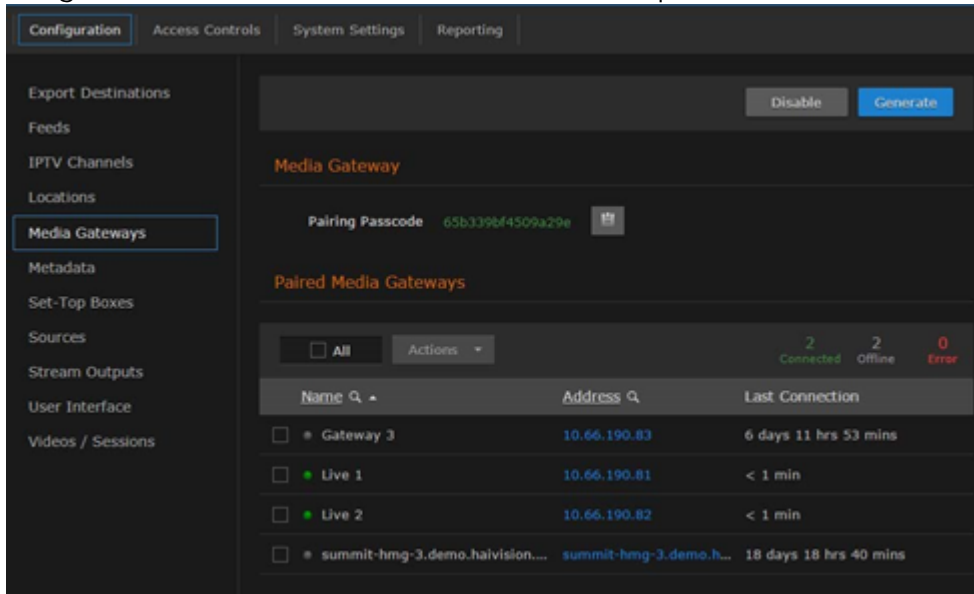
Setting up the pairing requires steps from both the HMP and Media Gateway Web interfaces.

1. On the (HMP) Media Gateways pane, click **Generate** to generate the Pairing passcode.



2. Copy the passcode to the clipboard. (Do not disable yet.)
3. On the (Media Gateway) Media Platform configuration pane, define the Gateway and HMP settings and paste the Pairing passcode into the Passcode field. For details, refer to the *Media Gateway Administrator's Guide*.

- On the (HMP) Media Gateways pane, this gateway is now listed in the Paired Media Gateways list, along with the connection status and the time elapsed since the last connection was seen.



Tip

You can filter the list by selecting either **Connected**, **Offline**, or **Error**. You can also click the gateway IP or hostname (blue) link to open the Media Gateway Web interface in a new tab.

On the (HMP) Edit Location Information pane, this gateway is now available for selection from the list of paired Media Gateways. (See Step #5 on [Managing Locations](#).)



Note

You can use the same Pairing passcode to set up multiple gateway pairings

- On the (HMP) Media Gateways pane, click **Disable** to block any new connections.

Configuring Multi-Site Live Distribution

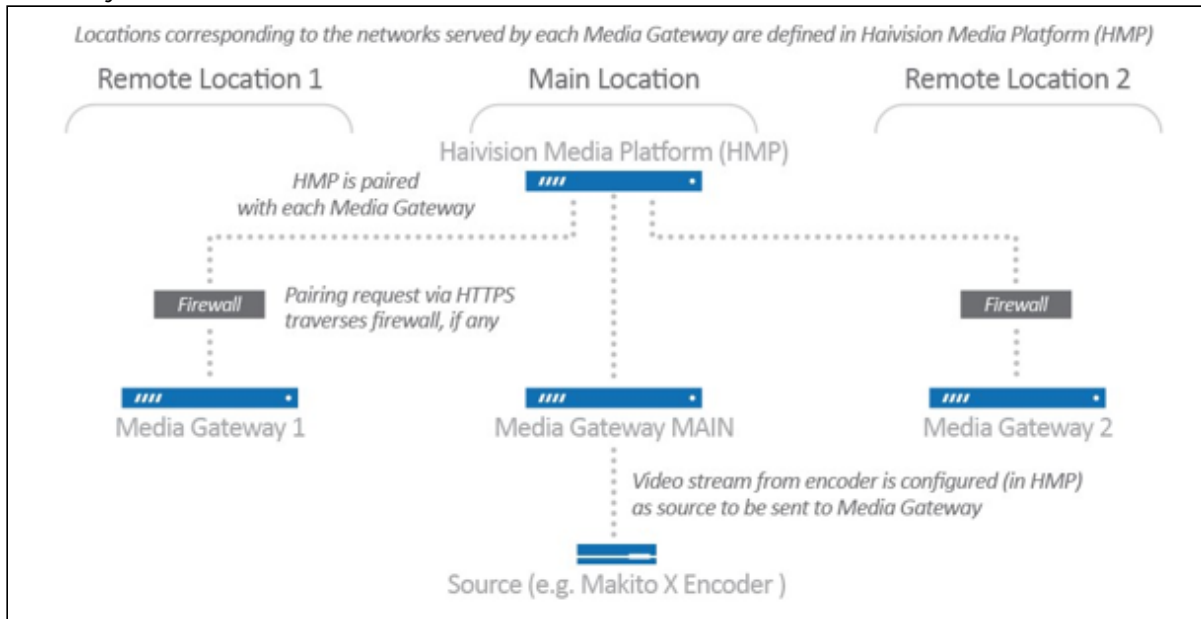
Important

Before you start, you need to plan your network. We highly recommend that you map out your locations in a network diagram from source to receivers.

To configure multi-site live distribution:

- Pair one or more Media Gateways with your HMP, following steps in the previous section [Configuring Paired Media Gateways](#). Any paired gateways will be listed on the (HMP) Media

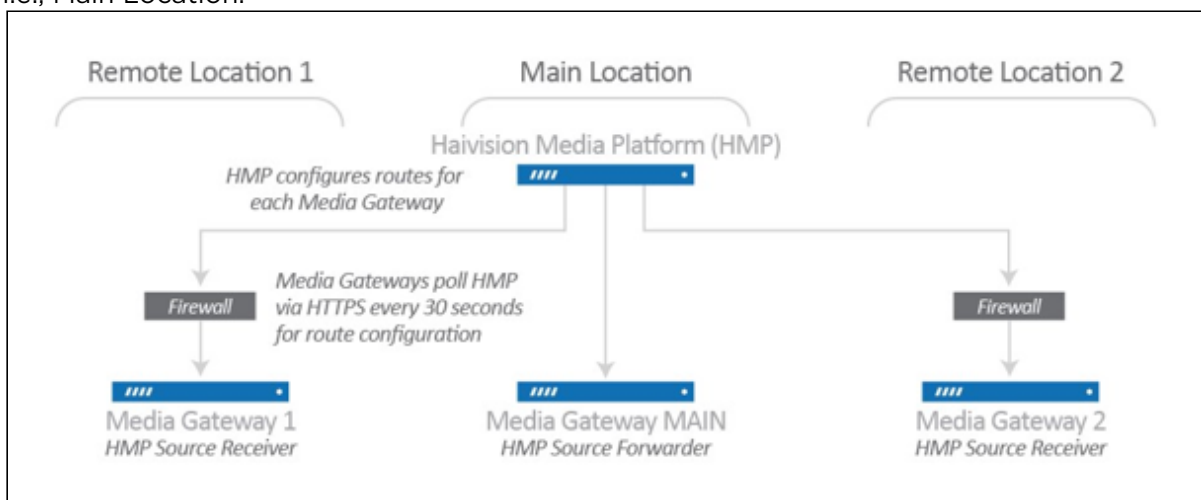
Gateways list.



Tip

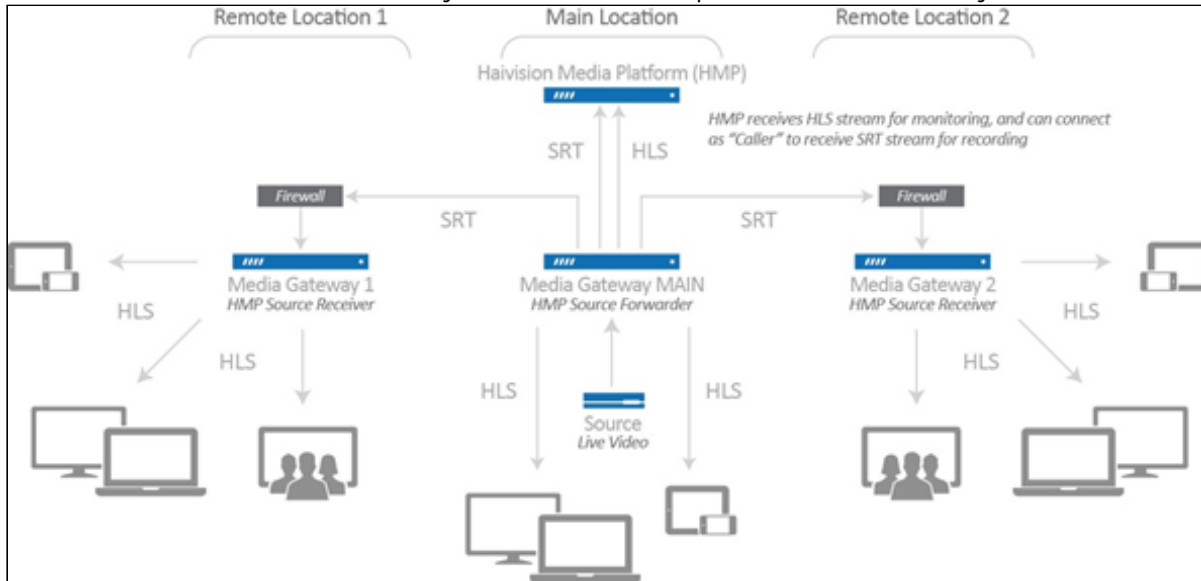
You can use the same pairing passcode while pairing multiple gateways. We recommend that you disable the passcode after all gateways have been connected. It can always be turned back on to add a new gateway to the network.

2. On HMP, create Locations, mapping each with a Media Gateway. For details, see [Configuring Locations](#). Your locations should represent a network where you have a group of users that should receive their video from a particular paired gateway. There can only be one gateway per location.
3. On the (HMP) Locations list, select the Mgt. Server Location, i.e., the location of the HMP management server. For example, referring to the previous diagram, Media Gateway “MAIN” is selected as the Management Server Location since this gateway and HMP are at the same location i.e., Main Location.



4. On HMP, create one or more Sources, selecting one of the paired Media Gateways for the Receiver. For details, see [Configuring Sources](#). For example, referring to the following diagram, while creating a source with “MXE Source,” Media Gateway “MAIN” should be selected as the receiver.

5. Create a Session with one of the configured Sources. Based either on the Schedule or “Live” state, multi-site routes will automatically be created on all paired Media Gateways.



Live multi-site routes will be created on all paired Media Gateways when a source belongs to an active Session. Specifically, multi-site Gateway routes will be created for each unique source when the source belongs to:

- a scheduled session that is inside of the scheduling window
- a scheduled session that is starting within 5 minutes
- a scheduled session that has ended within 5 minutes
- a manually created, unscheduled session (i.e., no end time) that is in the “Live” state

Note

A scheduled session will have active multi-site routes regardless of its “Live” state. All configured gateways will receive live streams when a source is made available through a session.

For additional information, please refer to [Multi-site Live Workflow](#) in the *Media Gateway User’s Guide*.

Configuring Metadata

Haivision Media Platform administrators can define metadata with selectable values to identify and store custom metadata. For example, videos, sessions, and sources may be categorized by surgical procedure, course title, geographical location, or patient ID number – whatever makes sense in your environment.

This metadata can be assigned to videos, sessions, and sources. From the Content Library and Portal, viewers can select metadata keys and values to filter the Videos, Sessions, or Sources list. For details, see “Filtering Lists” in the *Haivision Media Platform User’s Guide*.

Note

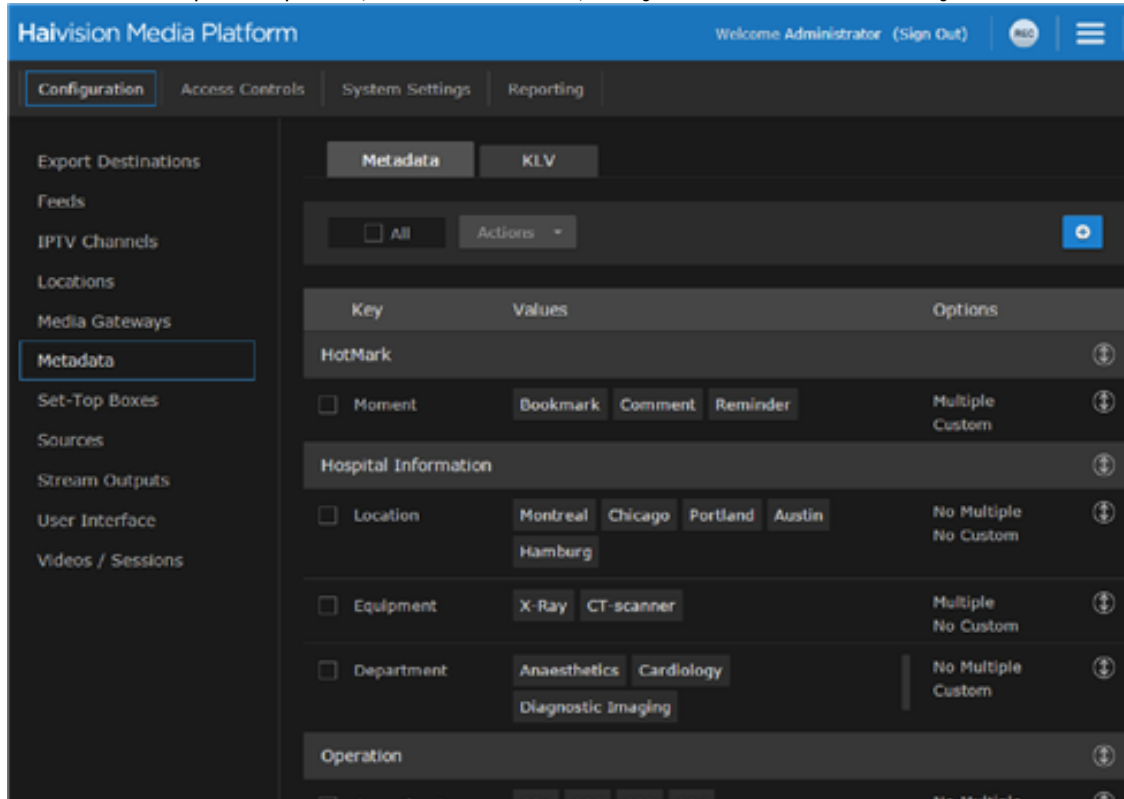
Viewers only see metadata assigned to videos for which they have access

To help you manage your metadata, you can organize metadata into groups, change the display order of metadata keys within the group, and sort groups within the list of keys. (Note that metadata cannot be sorted on mobile devices because they do not have the same drag and drop support as desktop Web browsers.)

To view and configure metadata:

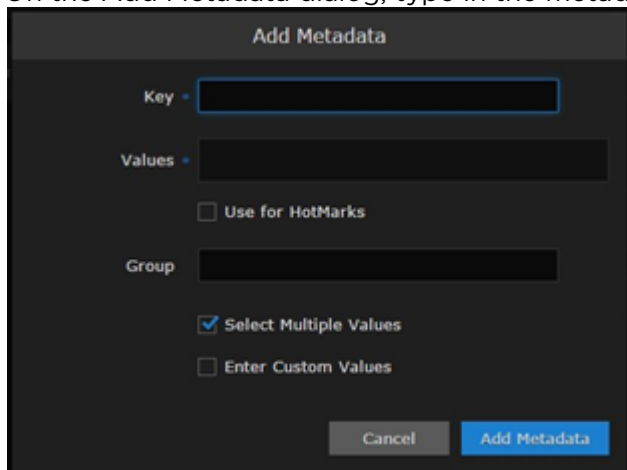
1. On the Administration screen, click **Configuration** on the toolbar and then click **Metadata** on the sidebar.

The Metadata pane opens (as shown below). Any defined metadata keys are listed.



To define metadata:

1. On the Metadata pane, click the **+** icon.
2. On the Add Metadata dialog, type in the metadata key (label), for example, "Department".



3.

Note

By default, users will be able to enter multiple values, but not custom (i.e., their own) values when assigning metadata to videos, sessions, and sources.

To remove a value, mouse over the value and click the **X** icon.

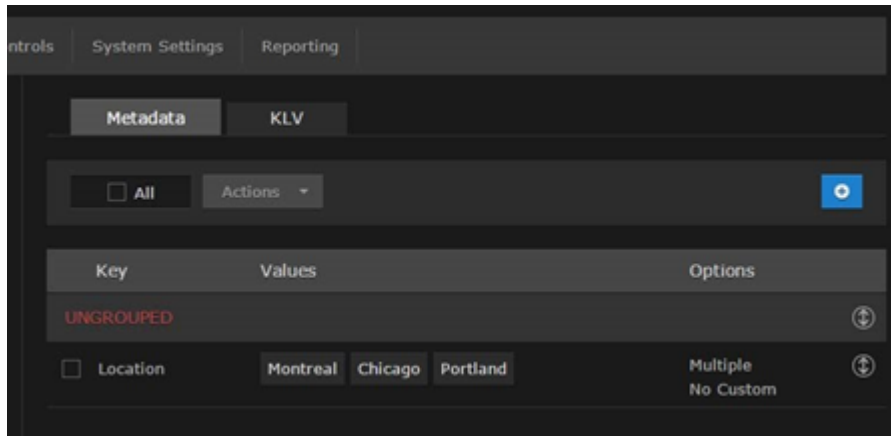
4. To use the Metadata for HotMarks, check the checkbox. Note that “HotMarks” will serve as the group for the metadata.

-or-

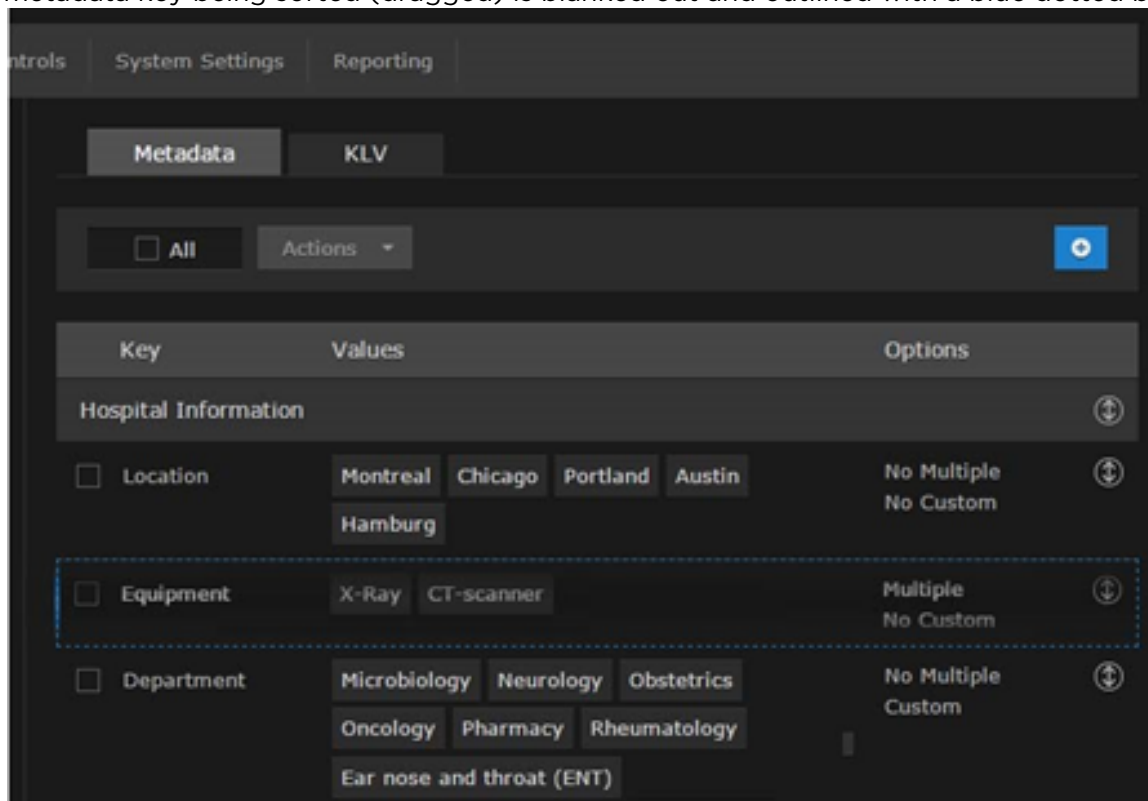
In the Group field, type in the group for the metadata.

Tip

If you do not assign a group to the metadata or select it for use with HotMarks, it will be listed as “UNGROUPED”.



5. Check the checkboxes to modify the default settings for Multiple Values and Custom Values as required. For more information see [Metadata Settings](#).
6. When you have finished typing in the values, click **Add Metadata**. The new metadata key will be added to the Metadata list.
7. To change the display order of metadata keys within a group or groups within the Metadata list, click the icon for the metadata key or group and drag it to the adjust the order of the list. The metadata key being sorted (dragged) is blanked out and outlined with a blue dotted border.



Tip

If you select multiple metadata keys to edit, only the Group field is available.

Important

Deleting a metadata key will also remove associated values on all videos, sessions, and sources.

For details, see [Managing KLV Inputs](#).

Metadata Settings

The following table lists the Metadata configuration settings:

Metadata Setting	Default	Description/Values
Key	n/a	The label for the metadata.
Values	n/a	One or more default values that can be selected by users for this metadata.
Use for HotMarks	Disabled	Check this checkbox to add this metadata to the HotMarks list instead of the general Metadata list.
Group	n/a	(Optional) The group to assign the metadata to. Grouping helps you organize large numbers of metadata keys and intuitively arrange them for viewers. You can also sort keys within groups and sort groups within the list of keys.
Select Multiple Values	Enabled	Check this checkbox to allow users to add more than one value to this metadata key.
Enter Custom Values	Disabled	Check this checkbox to allow users to add their own values for this metadata key.

Related Topics

- "Filtering Lists" in the *Haivision Media Platform User's Guide*

Managing KLV Inputs

Note

KLV is a licensed option. For more information, please contact Haivision Sales.

Haivision Media Platform supports KLV data parsing and display as a licensable option per system. Administrators can create and upload a metadata dictionary file to customize and dynamically display KLV metadata to provide context with associated video/audio streams.

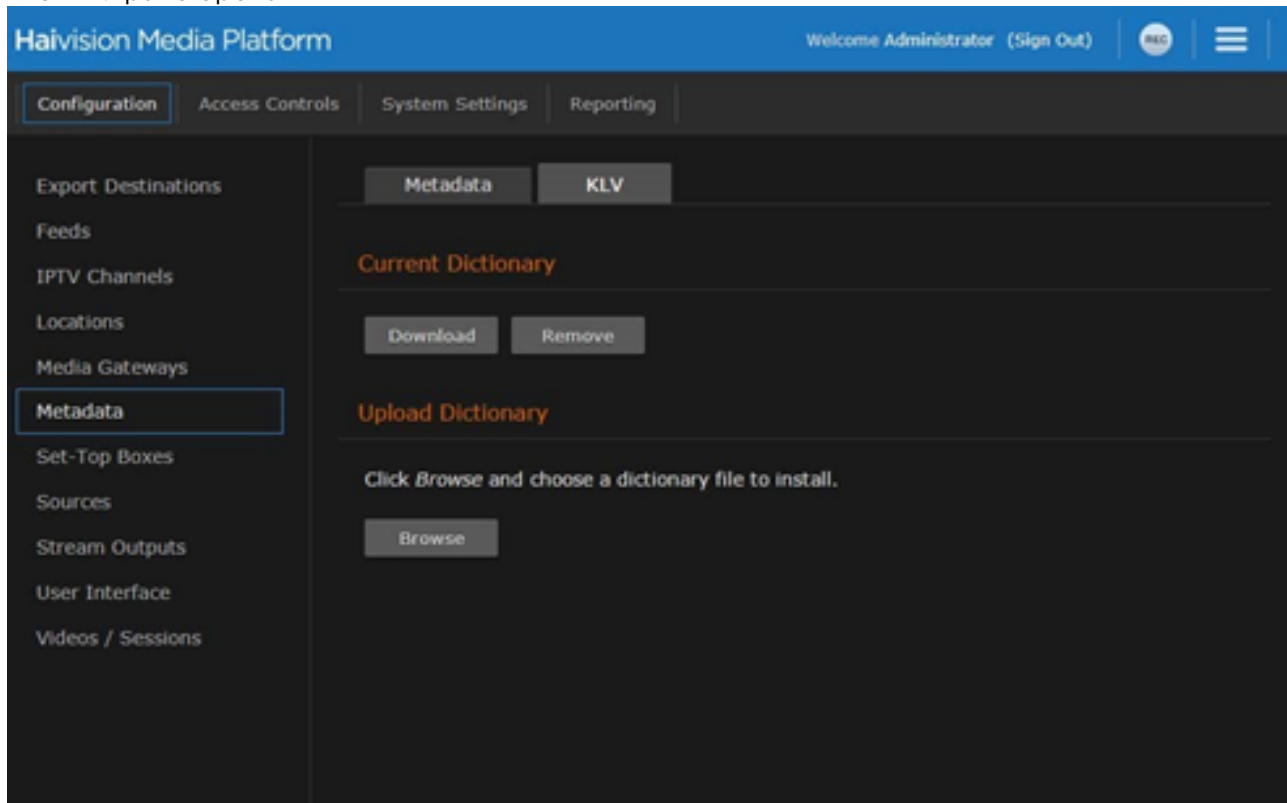
To accommodate changes to the KLV dictionary, HMP accepts a library file which will translate the KLV data being sent into human readable fields and units of measure. The library file is in JSON format and complies with MISB RP 0602.2 and Standard 0604.1.

Administrators can also download and review the currently uploaded KLV dictionary.

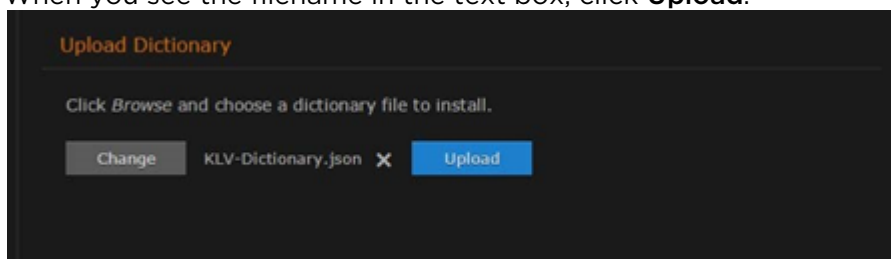
On the Content Library screen, users can turn on/off the display of KLV data in a sidebar in the multi-window viewer.

To manage KLV inputs:

1. On the Metadata pane, click **KLV** on the sidebar.
The KLV pane opens.



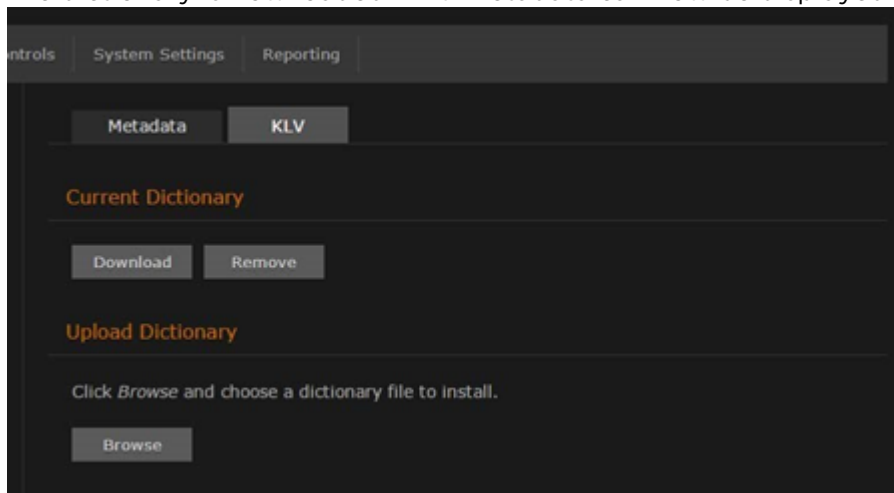
2. To upload a dictionary, click **Browse** and select the dictionary file to load in the Open File dialog box. For details on the dictionary file format, see [KLV Dictionary Format](#).
A sample dictionary file is available on Haivision’s Support Portal at: <https://support.haivision.com>
3. When you see the filename in the text box, click **Upload**.



Tip

To select a different dictionary file, click Change. To remove the selection, click the **X** icon.

The dictionary is now loaded. KLV metadata can now be displayed for videos, sessions and sources.



4. To view the currently installed dictionary, click **Download**. You can then open the file in a text editor to view the KLV dictionary
5. To remove the currently installed dictionary from your system, click **Remove**.

STB Administration

From the Administration screen, you can configure default settings to assign to new set-top boxes registered in the Haivision Media Platform domain. You can also create tags for tagbased configuration of devices.

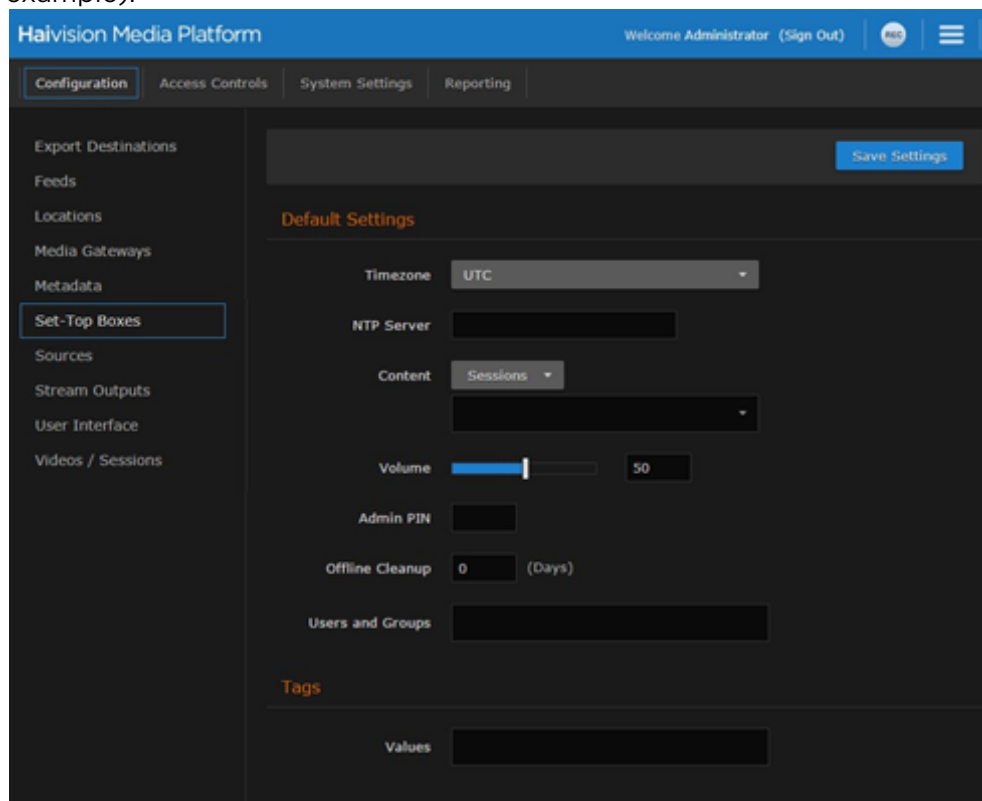
When a new set-top box is registered as a device in an HMP domain, it is assigned the default settings. This is useful to control settings such as the channel lineup, volume level, NTP server, and Timezone, the first time the device boots up.

Setting Device Defaults

To configure default device settings:

1. On the Administration screen, click **Configuration** on the toolbar and then click **Set-Top Boxes** on the sidebar.
The Set-Top Boxes pane opens showing the device default settings (as shown in the following

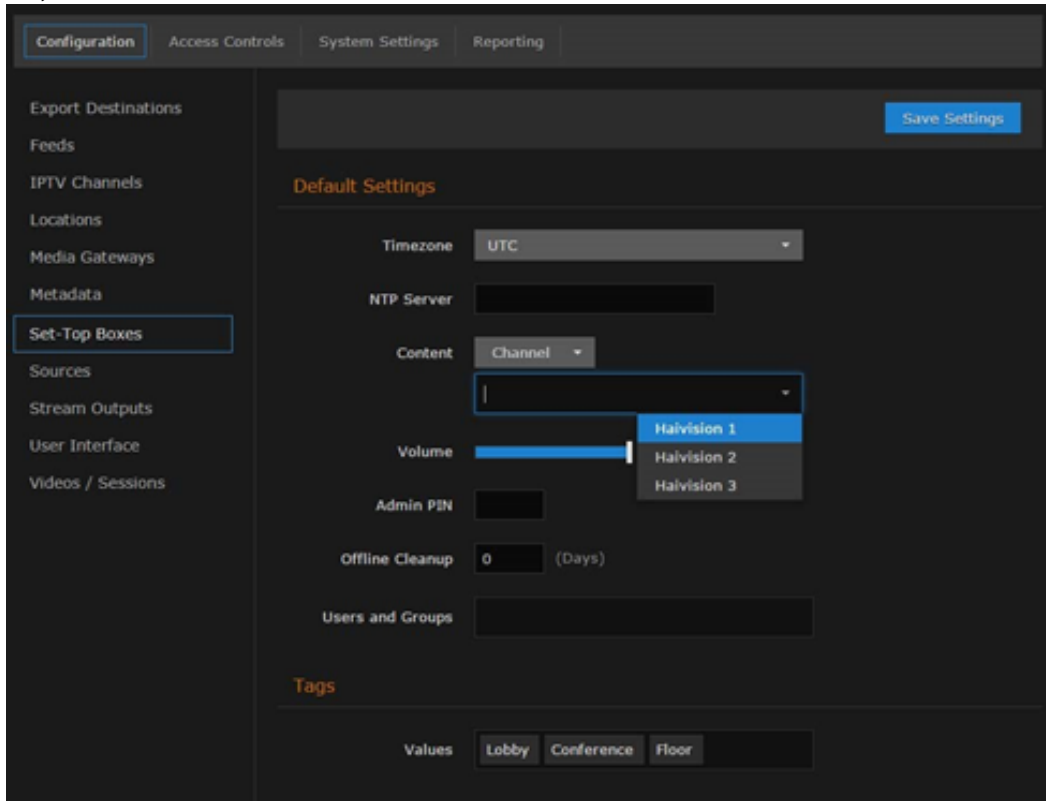
example).



2. Enter or select the value(s) to serve as default device settings. See the following section, [Device Default Settings](#).

The changes take effect immediately and will apply to new STBs registered with the server.

- To specify the default content type, select either Channel, Videos or Sessions from the drop-down list, and then select a title from the detailed list.




- Click **Save Settings**.

Device Default Settings

The following table lists the Device Default settings:

Device Default Setting	Description/Values
Default Settings	
Timezone	<p>Note</p> <p>The times are based on hours added to or subtracted from Greenwich Mean Time (GMT).</p>
NTP Server	<p>This is blank the first time you open the (HMP) Manage Devices screen after an upgrade. Once the default is set, it is applied to new STBs registered.</p> <p>Tip</p> <p>Generally, it is recommended to use the same NTP server as HMP.</p>
Content	Select the default content type for the device, either Channel, Videos, or Session. Then select the channel, video, or session title from the drop-down list.
Volume	To raise or lower the volume, move the volume slider right or left. Or type in the volume level in the text box.

Device Default Setting	Description/Values
Admin PIN	To set the Admin PIN code, type in a 4-8 digit PIN. When an Admin PIN is set, this locks down Settings screen, and users must enter this PIN to access the STB Settings application. <div style="border: 1px solid green; padding: 5px;"> <p> Tip If you are not using an Admin PIN, clear the input field (leave it empty) and click Save.</p> </div>
Offline Cleanup	To set the offline cleanup period, enter the number of days. Devices offline for more than the specified cleanup period will be removed from the Devices list. To disable automatic cleanup, set to 0 (default).
Users and Groups	Type in the name(s) of defined users and groups to assign access to the STB content.
Device Tags	
Values	Type in one or more words or phrases to describe and manage the device. See the following section, Tagging Devices .

Tagging Devices

Tag-based configuration facilitates online management of large installations of devices. It provides a helpful way to sort, manage and schedule devices with a high degree of control over content being sent to individual or groups of devices.

Tags are similar to, but more specific than groups and are generally used to describe and manage devices with more granularity.

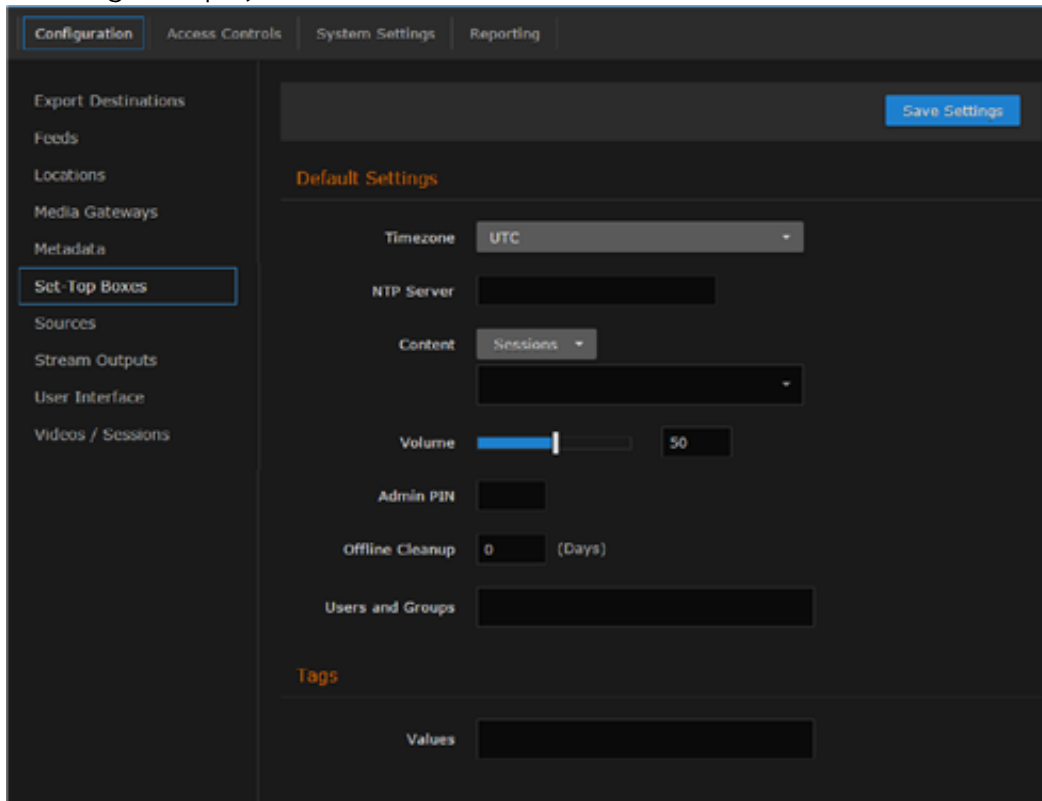
Tag-based configuration is also more powerful than groups because a single device can have more than one tag. Tag-based configuration allows devices to essentially be in more than one group.

Once devices are tagged, you can filter by tags to view, edit or schedule only devices that share selected tags. This is useful to narrow down and manage long lists of devices and also makes it easier to locate devices in large installations. (See "Filter by Tags" in the *Haivision Media Platform User's Guide*)

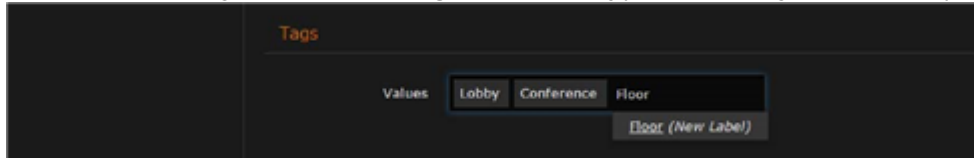
To add or delete tags:

1. On the Administration screen, click **Configuration** on the toolbar and then click **Set-Top Boxes** on the sidebar.
The Set-Top Boxes pane opens showing the defined tags for the HMP domain (as shown in the

following example).



- To add a new tag, click in the **Tags** text box, type in the tag name, and press **Enter**.



- To remove a tag, mouse over the name and click the **X** icon.
- Click **Save Settings**.
Keep in mind that the Save Settings button applies to both default settings and tags.
The newly created tags are now available to assign to devices and then to filter the displayed list.

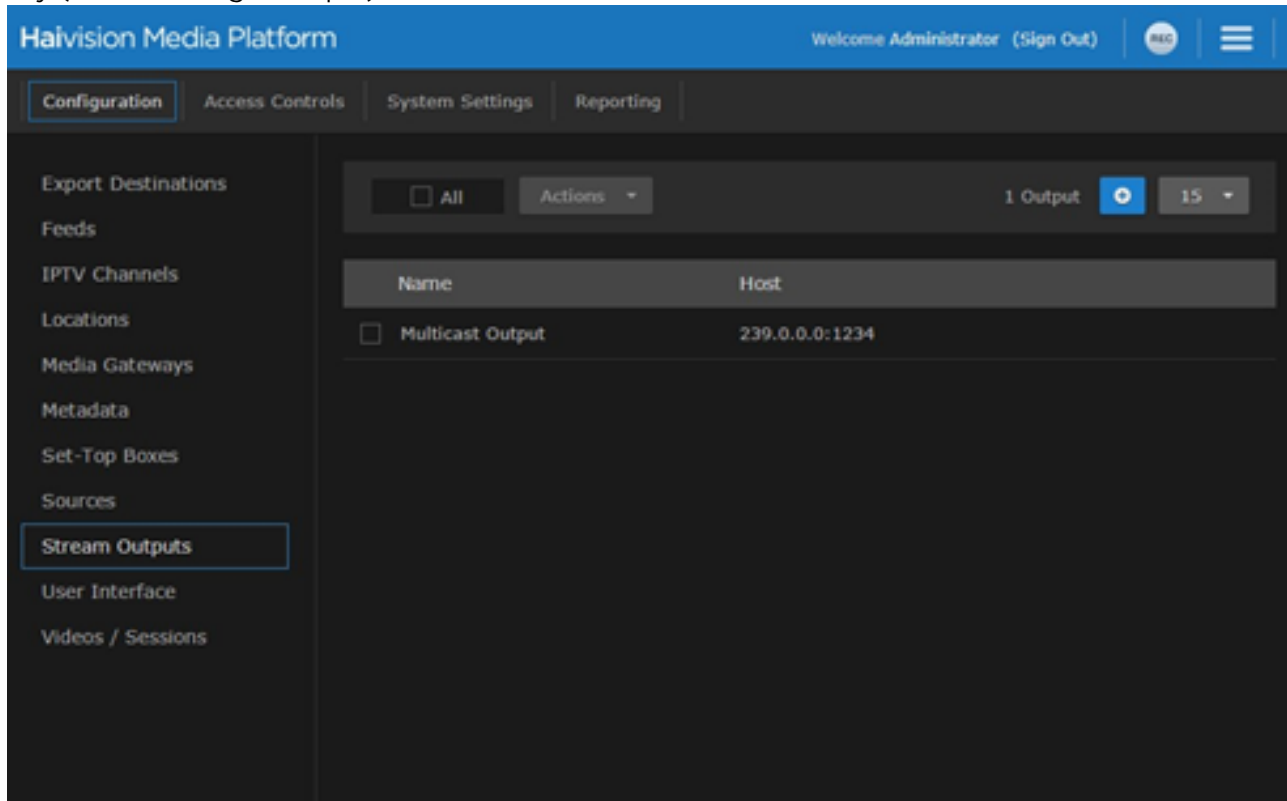
Managing Stream Outputs

When setting up Haivision Media Platform, you can define multiple stream outputs for users to select from when re-streaming videos. (Note that they can also enter an IP address and Port for the streaming output.) With multi-source videos, users can choose the track to re-stream and then choose a different streaming output for each track. See "Re-Streaming Videos" in the *Haivision Media Platform User's Guide*.

To manage Stream Outputs:

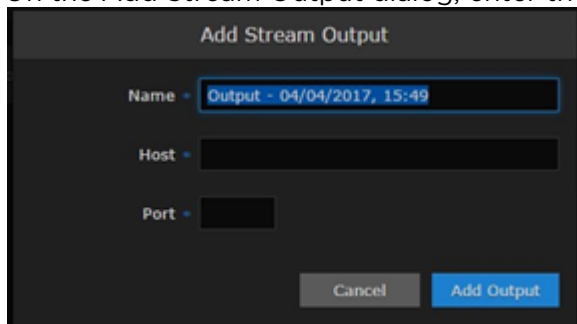
- On the Administration screen, click **Configuration** on the toolbar and then click **Stream Outputs** on the sidebar.
The Stream Outputs pane opens, displaying the list of defined stream outputs for your system, if

any (see following example).



To add a Stream Output:

1. From the Stream Outputs pane, click the **+** icon.
2. On the Add Stream Output dialog, enter the name, host IP address or URL, and port for the output.



3. Click **Add Output**.
The new output will be added to the Stream Outputs list.

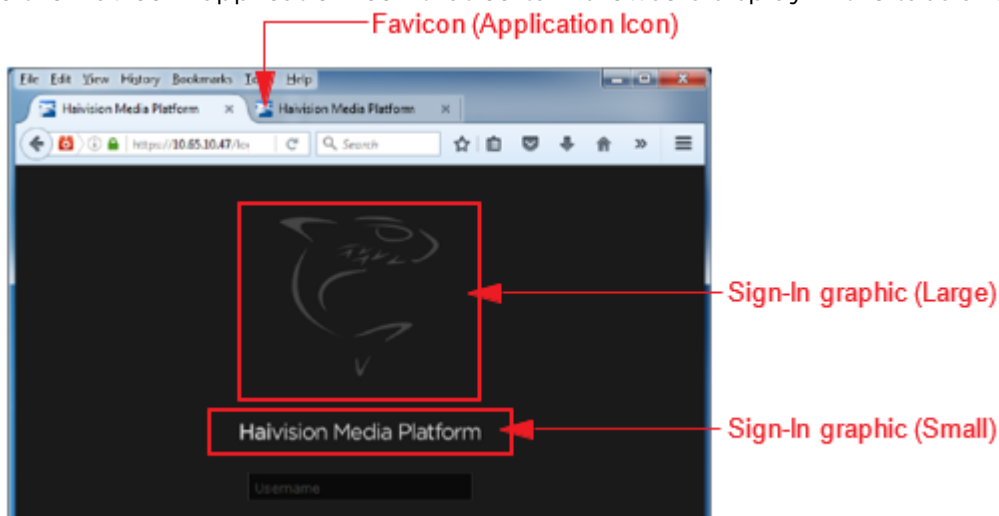
Re-Branding the User Interface

From the User Interface page, you can customize the Haivision Media Platform user interface to suit your organization. For example, you can add your own branding images and color (which will be applied to all users the next time the user’s browser window is refreshed). You can also disable the display of one or both Sign-In page graphics.

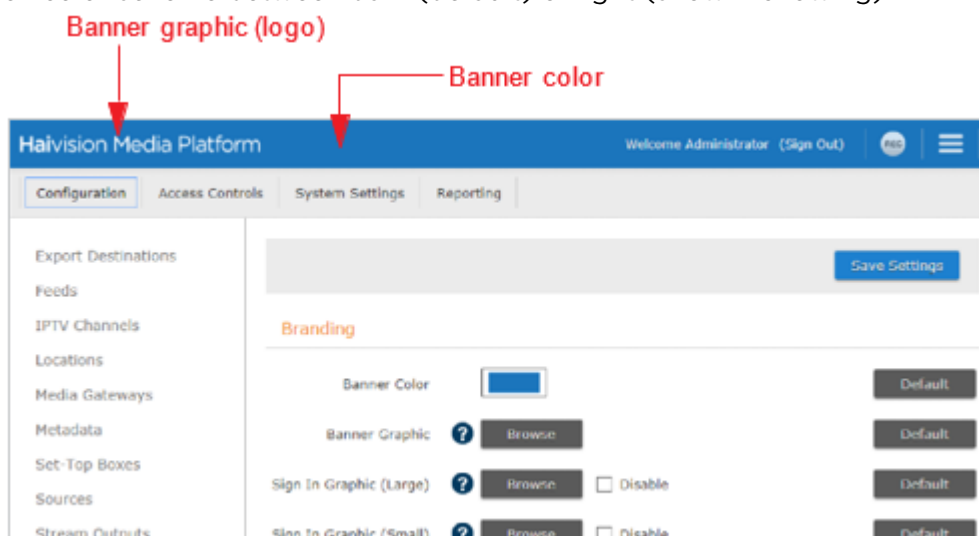
You can customize the following user interface components:

- Replace the Haivision graphics (large shark and small brand) that appear on the signin page (as shown following).

- Replace the "favicon" application icon that certain browsers display in the tabs and bookmarks.

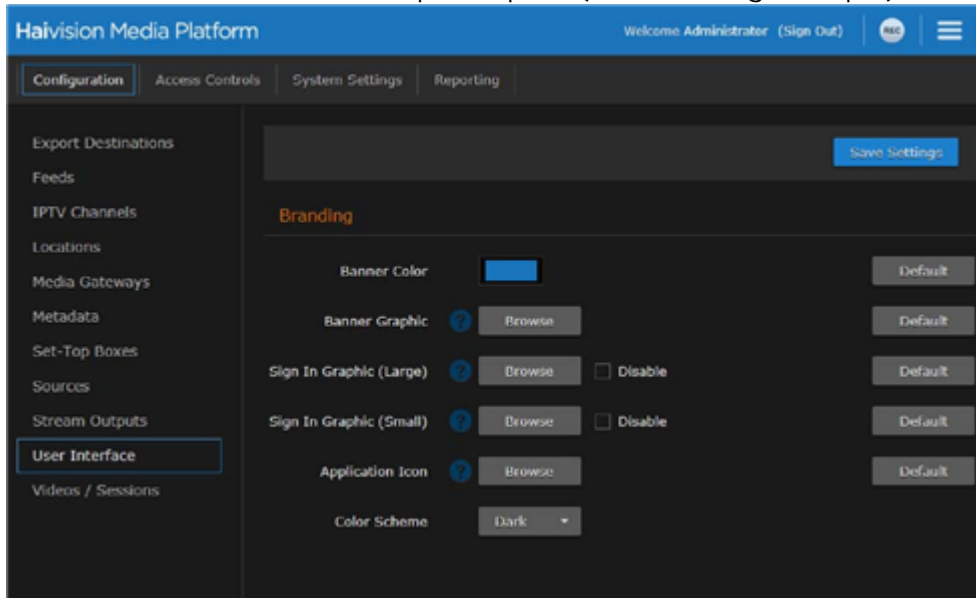


- Replace the Haivision banner graphic (logo) at top left of the Web interface.
- Change the color of the top blue banner.
- Switch color scheme between dark (default) or light (shown following).



To customize the HMP user interface:

1. On the Administration screen, click **Configuration** on the toolbar and then click **User Interface** on the sidebar. The User Interface pane opens (see following example).

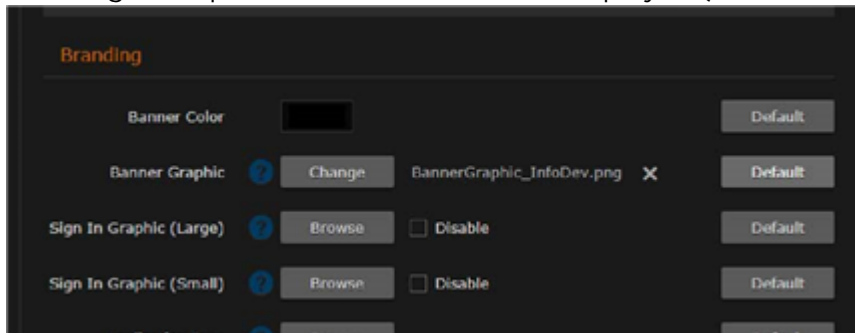


2. To change the banner color, click the color box and select the new color (either directly from the color picker or enter the color values).

3. **Tip**

To view the expected dimensions for an image, hover the cursor over the **?** icon.

4. Click **Browse** to choose the new graphic. The image is imported and the filename is displayed (as shown in the following example).



- To select a different graphic, click **Change**.
- To clear the selection, click the **X** icon.

Tip

To revert to the default image or banner color, click **Default**.

5. To hide one of the Sign-In page graphics (large or small), check the Disable checkbox. To show it again, choose a new graphic or click on **Default**.






Note

Unchecking the Disable checkbox does not re-enable the graphic.

6. To switch the interface color scheme between dark (default) and light, select from the drop-down menu.
7. Click **Save Settings**.

User Interface Settings

The following table lists the User Interface configuration settings: (For corresponding illustrations, see [Re-Branding the User Interface](#).)

User Interface Setting	Default	Description/Values
Banner Color	Haivision blue (RGB: 27-117-188)	The color of the banner along the top of the page.
Banner Graphic	Haivision Media Platform (text logo)	<div style="border: 1px solid green; padding: 5px;"> <p> Tip The Haivision graphic is a 235 x 16 pixel .PNG file.</p> </div>
Sign-in Graphic (large)	Haivision shark logo	<div style="border: 1px solid yellow; padding: 5px;"> <p> Note You can use this setting to create a full-screen image. However, large images can slow down or prevent page load. Also, if the screen resolution is smaller than the image, the image will be cut off. The image is centered horizontally on the page.</p> </div> <div style="border: 1px solid green; padding: 5px; margin-top: 5px;"> <p> Tip The Haivision graphic is a 126 x 206 pixel .PNG file.</p> </div>
Sign-in Graphic (small)	Haivision Media Platform (text logo)	<div style="border: 1px solid green; padding: 5px;"> <p> Tip The Haivision graphic is a 235 x 16 pixel .PNG file.</p> </div>
Application Icon	Haivision favicon	<div style="border: 1px solid green; padding: 5px;"> <p> Tip The width and height can be 16, 32, 48 or 64 pixels (squared), 8-bit or 24-bit.</p> </div>
Color Scheme	Dark	Switch interface between dark and light color schemes <ul style="list-style-type: none"> • black background with white text (default) -or- • white background with black text.

Configuring Video and Session Settings

When setting up Haivision Media Platform, administrators can configure system-wide video and session settings such as the default video expiry and maximum recording duration.

Default Video Expiry

The Default Video Expiry specifies the number of days after which a video will expire and be deleted. Alternatively, you can select "Keep Forever", so that videos will *not* be deleted automatically. The minimum expiration is one (1) day.

Note

Modifying a video does not reset the timer; it is based on the creation time. Trimming a video creates a new video and resets the timer for that new video but leaves the old one unchanged.

When editing Video information, users can override the Default Video Expiry on a per-video basis. For details, see "Editing Video Information" in the *Haivision Media Platform User's Guide*.

Maximum Recording Duration

Each recording session is limited to a maximum duration. HMP will stop recording once that duration has been reached. You can define the maximum duration for all videos. The default is 24 hours.

Videos Inherit Permissions

A session's sharing permissions may now be passed on to any videos made from that session. The objective is a workflow decision to help reduce the number of times a user must enter the sharing dialog.

Administrators can enable or disable this setting (disabled by default). Permissions are copied at the start of the recording. The recording creator is still granted "OWN" permissions on the new video.

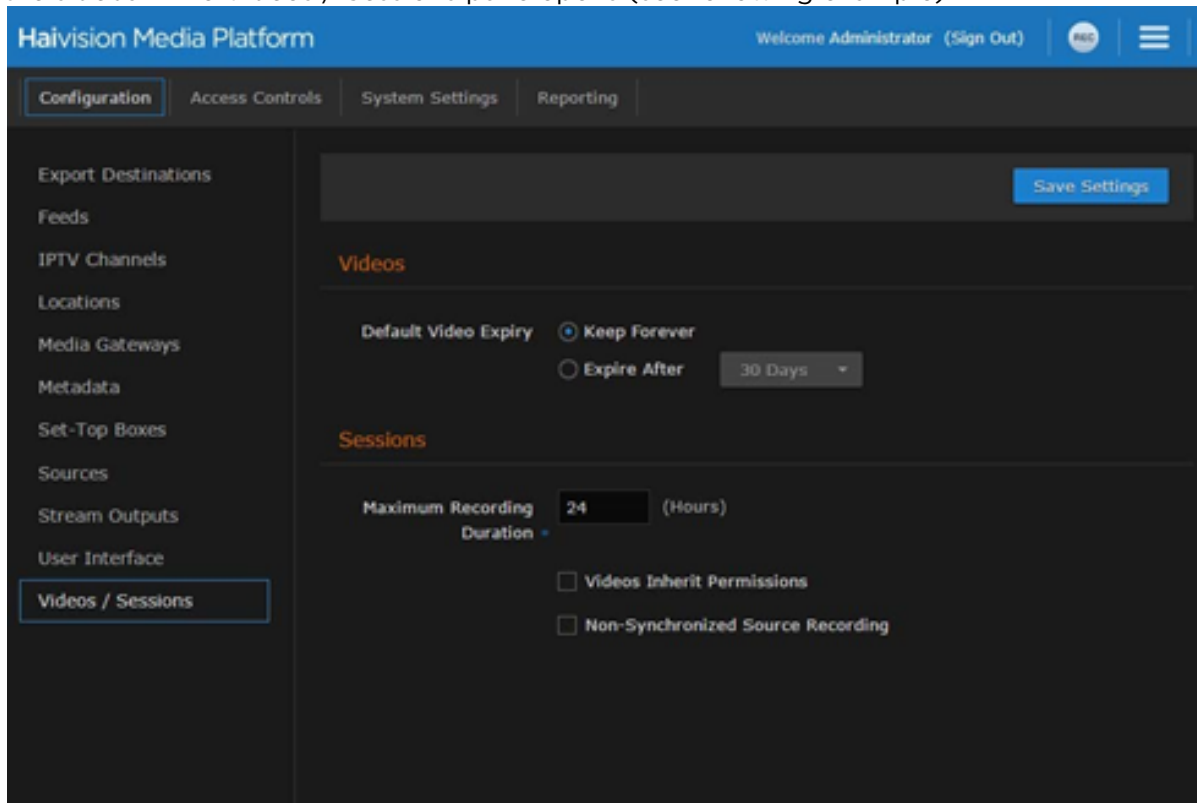
Non-Synchronized Source Recording

Administrators can now add the ability to create non-synchronized source recordings. This feature is scheduled to be deprecated in a future release.

Configuring Video and Session Settings

To configure the video and session settings:

1. On the Administration screen, click **Configuration** on the toolbar and then click **Videos/Sessions** on the sidebar. The Videos / Sessions pane opens (see following example).



2. For the Default Video Expiry, select either **Keep Forever** or **Expire After**.
3. For Expire After, select a duration from the Days drop-down menu (ranging from 1 - 180 days).
4. To change the Maximum Recording Duration, type in the number of hours.
5. To allow a session's sharing permissions to be passed on to videos made from that session (disabled by default), check the **Videos Inherit Permissions - Activate** checkbox.
6. Click **Save Settings**.

Managing Access Control

! Important

Before proceeding, make sure that:

- The appliance is set up correctly and all necessary network and A/V connections are established. For information on installing and connecting to your Haivision Media Platform server, please refer to the *Haivision Media Platform Quick Start Guide*.
- Sources and (if applicable) Directory Authentication Services have been configured for your system. See [Managing Sources](#) and [Managing Directory \(Authentication\) Services](#).

Topics Discussed

- [Managing Users](#)
 - [Assigning Roles to LDAP/AD Users](#)
 - [Managing User Accounts \(Non LDAP/AD\)](#)
 - [User Settings](#)
- [Managing Groups \(LDAP/AD Only\)](#)
 - [Assigning Roles to LDAP/AD Groups](#)
- [Managing Roles](#)
 - [Adding Users and Groups to Roles](#)
 - [Editing Role Permissions](#)
 - [Creating Custom Roles](#)
 - [Default Roles](#)
- [Managing Share Permissions](#)

Managing Users

! Important

If HMP is connected to an LDAP or Active Directory server, the Users list will be populated with information from the directory server. See [Managing Directory \(Authentication\) Services](#).

Haivision Media Platform allows you to display a list of users and assign roles to users. HMP uses roles with pre-defined permissions to provide users or groups with controlled access to videos, sessions, and sources. In order to successfully sign in, a user must be assigned a role.

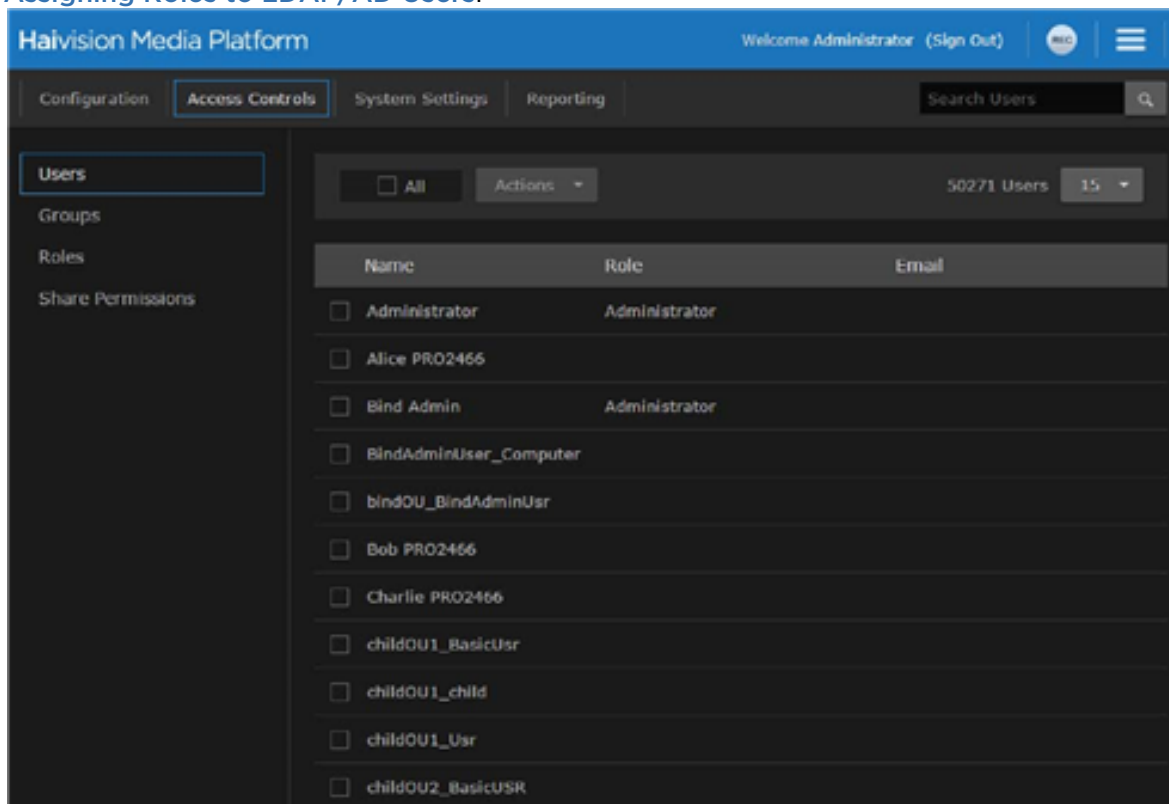
If your system is *not* connected to a directory server, you may also add and modify user accounts from HMP.

Note

Although the typical workflow in an LDAP/AD environment is to assign roles via Groups, assigning roles from the Users list may be useful in some cases.

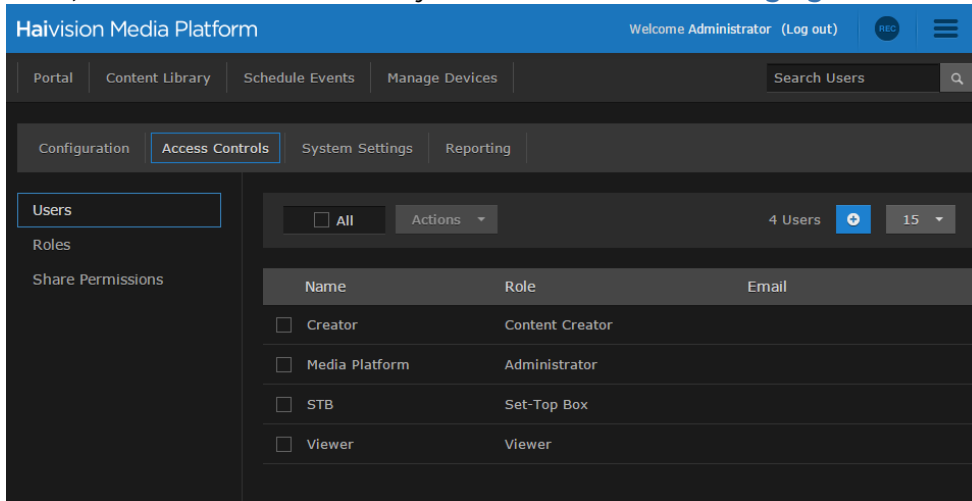
To view and manage the users for your platform:

1. On the Administration screen, click **Access Controls** on the toolbar and then click **Users** on the sidebar. The Users list opens (shown in the following examples), displaying the list of defined users for your platform.
2. In an LDAP/AD environment, you may browse through the list and assign roles to users. See [Assigning Roles to LDAP/AD Users](#).



-OR-

- If HMP is not connected to a directory server, you may browse through the list, assign roles to users, as well as add and modify user accounts. See [Managing User Accounts \(Non LDAP/AD\)](#).



Note

The default HMP users (non LDAP/AD) are creator and viewer.

Assigning Roles to LDAP/AD Users

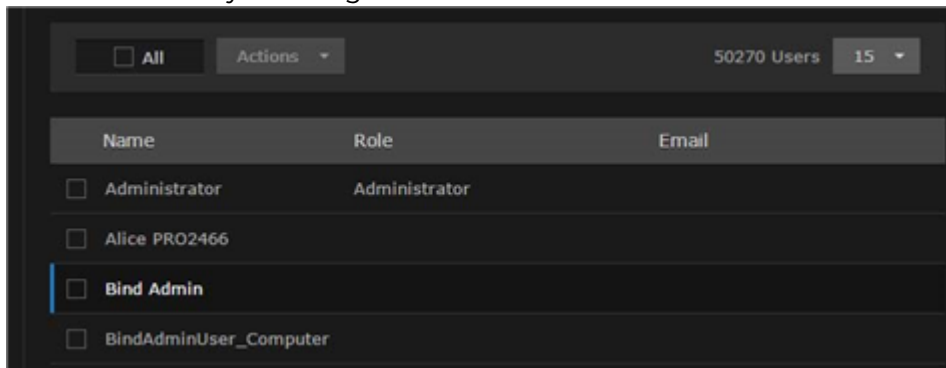
Important

If HMP is connected to a directory server, user accounts must be created or modified from the LDAP or Active Directory server. You cannot add or modify user accounts from HMP. HMP users will sign in using their LDAP/AD username and password.

In an LDAP/AD environment, you may browse through the Users list and assign roles to users.

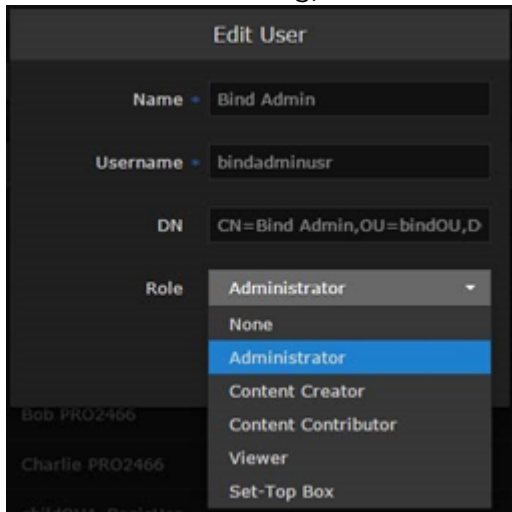
To assign a role to a user:

- Select the user by mousing over the user name in the Users list and click anywhere in the row.

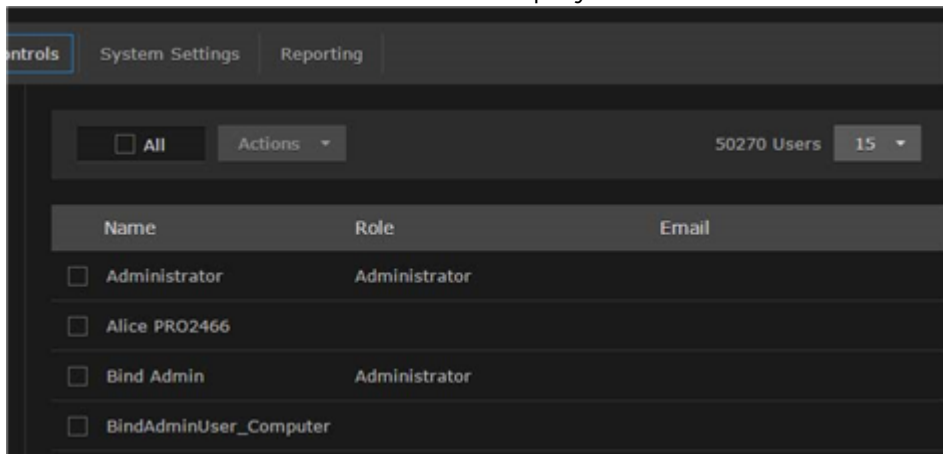


Or you can check the checkbox next to the user name and click **Edit**.

- On the Edit User dialog, select the role for the user account. See the Role entry in [User Settings](#).



- Click **Save User**. The new role will be displayed on the Users list.

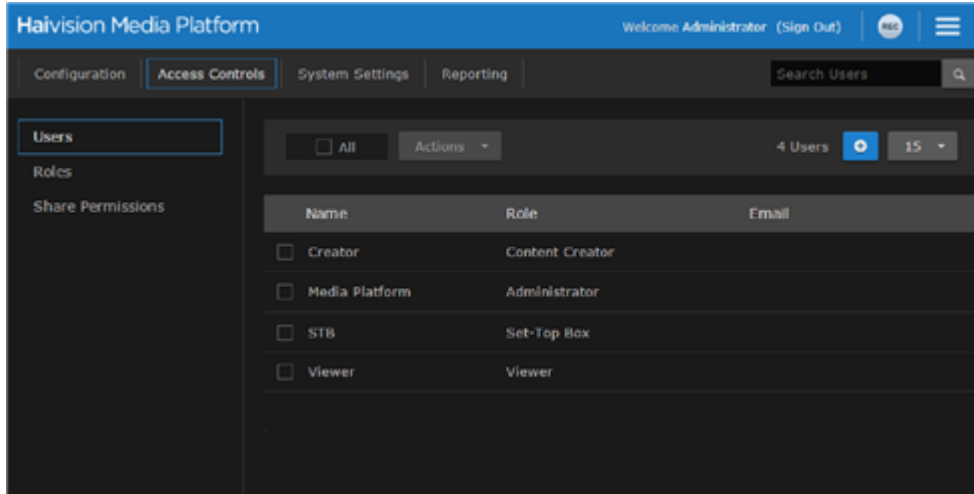


Managing User Accounts (Non LDAP/AD)

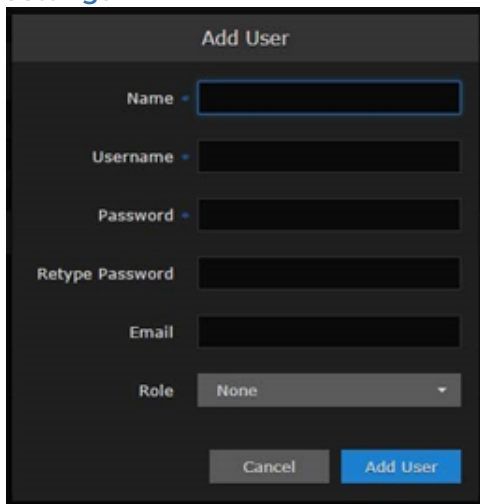
If HMP is *not* connected to a directory server, you will need to add and modify user accounts from the Users list.

To add a user:

- From the Users list (Administration screen), click the **+** icon.



2. On the Add User Information dialog, enter or select the value(s) to define the user. See [User Settings](#).



3. Click **Add User**. The new user will be added to the Users list.

User Settings

The following table lists the configurable User settings on non-LDAP/AD systems:

User Setting	Default	Description/Values
Name	n/a	Enter a name for the user. This name will be displayed on the Users list.
Username	n/a	<div style="border: 1px solid #ffc107; padding: 5px;"> <p>Note You cannot modify the username.</p> </div>
Password	n/a	Type in the new password.
Retype Password	n/a	Type in the new password again.
Email	n/a	Enter an email address to associate with the user account.

User Setting	Default	Description/Values
Role	None	<div style="border: 1px solid #ccc; padding: 10px;"> <p>Note</p> <p>For information on creating and customizing roles for your system, see Managing Roles. For the default role permissions, see Default Roles.</p> </div>

Managing Groups (LDAP/AD Only)

Important

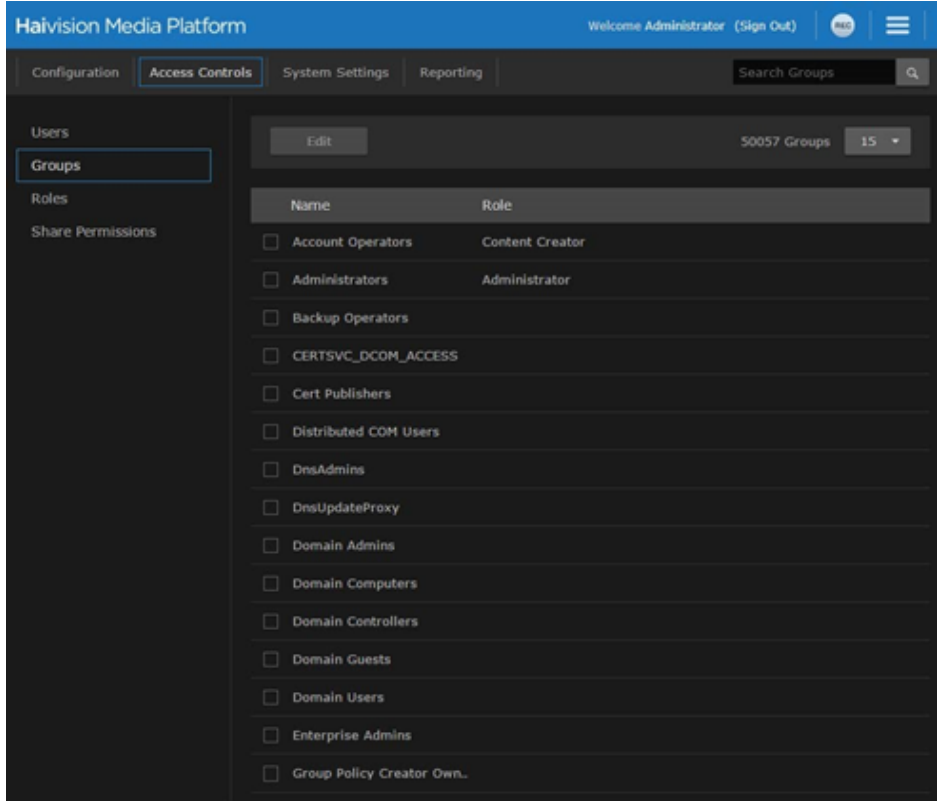
Groups are only available on Haivision Media Platform if your system is connected to an LDAP or Active Directory server. See [Managing Directory \(Authentication\) Services](#).

If Haivision Media Platform is connected to an LDAP or Active Directory server, the Groups list will be populated with information from the directory server. From the Groups list, you can assign roles to groups. This provides a means to efficiently manage multiple users. You cannot add or modify groups directly from HMP.

To view and manage the groups for your platform:

1. On the Administration screen, click **Access Controls** on the toolbar and then click **Groups** on the sidebar.

The Groups list opens, displaying the list of defined groups for your platform (shown in the following example, connected to an Active Directory server).



2. To assign roles to groups, see the following section, [Assigning Roles to LDAP/AD Groups](#).

Assigning Roles to LDAP/AD Groups

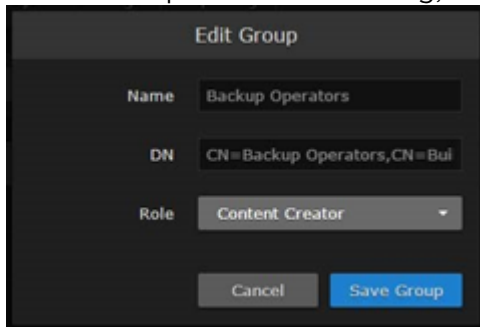
! Important

If Haivision Media Platform is connected to an LDAP or Active Directory server, the HMP Groups list will be populated with information from the directory server. See [Managing Directory \(Authentication\) Services](#).

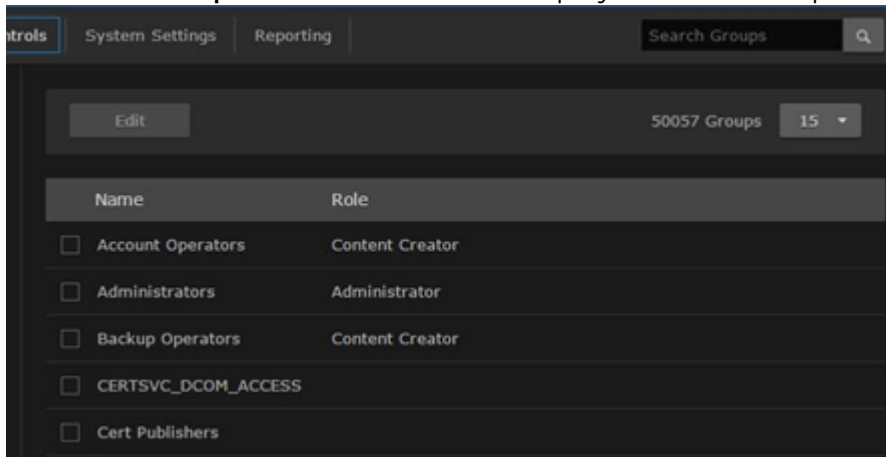
Groups must be created or modified from the directory server. You cannot add or modify groups from the HMP Web interface, other than to assign the role.

To assign a role to a group:

1. Select the group name in the Groups list.
2. On the Group Information dialog, select the role for the group. See [Default Roles](#).



3. Click **Save Group**. The new role will be displayed on the Groups list.



Managing Roles

Roles are used to confer permissions to users and groups. A user must be assigned a role in order to sign in. Haivision Media Platform provides the following default roles.

Role	Default Permissions
Administrator	In charge of system
Content Creator	Make sessions, record videos and manage feeds; no control over sources
Content Contributor	Record videos with no other system responsibilities
Viewer	View or interact with content with no other system responsibilities

Role	Default Permissions
Set-Top Box	Same as Content Creator with Set-Top Box administration added

Note

For more information, see [Default Roles](#).

In addition, users may be assigned "share" permissions for content rights (videos, sessions and sources) by administrators or other users. Share permissions may further qualify a user's privileges.

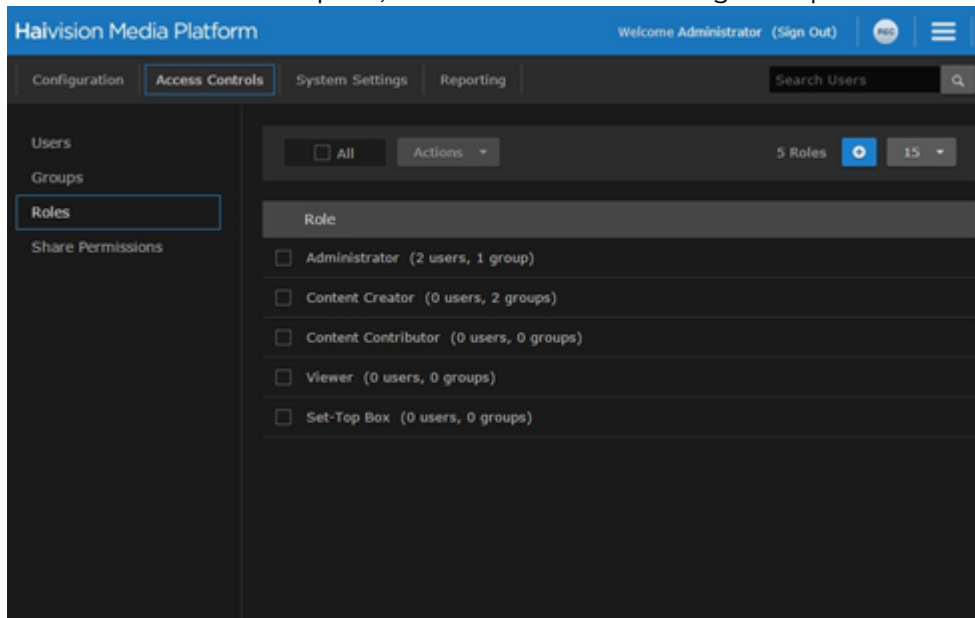
HMP roles and share permissions are fully customizable (see [Creating Custom Roles](#) and [Managing Share Permissions](#)).

Tip

The best practice is to assign a lower role to the group and then assign higher roles to individual users as required.

To view and manage the roles for your platform:

1. On the Administration screen, click **Access Controls** on the toolbar and then click **Roles** on the sidebar. The Roles list opens, as shown in the following example.



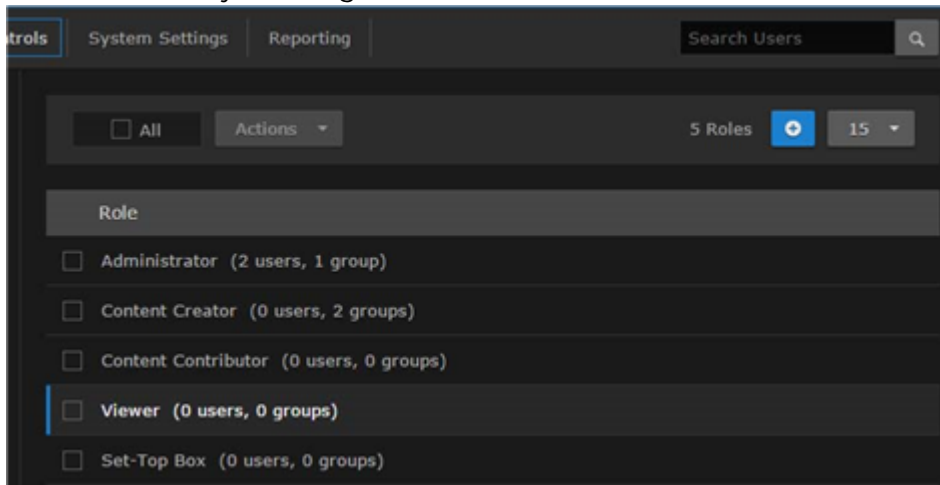
The Roles list displays the list of available roles and the number of users (and groups, if applicable) assigned to each role. From here, you can add users to and remove users from an existing role, and edit role permissions. You can also create new roles and delete roles.

- To add users (and groups, if applicable) to a role, see the following section, [Adding Users and Groups to Roles](#).
- To edit role permissions, see [Editing Role Permissions](#).
- To create new roles, see [Creating Custom Roles](#).
- To delete roles, see [Deleting Items](#).

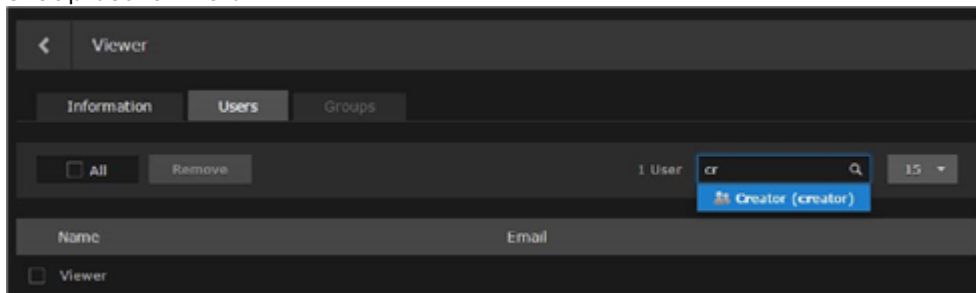
Adding Users and Groups to Roles

To add users and/or groups to a role:

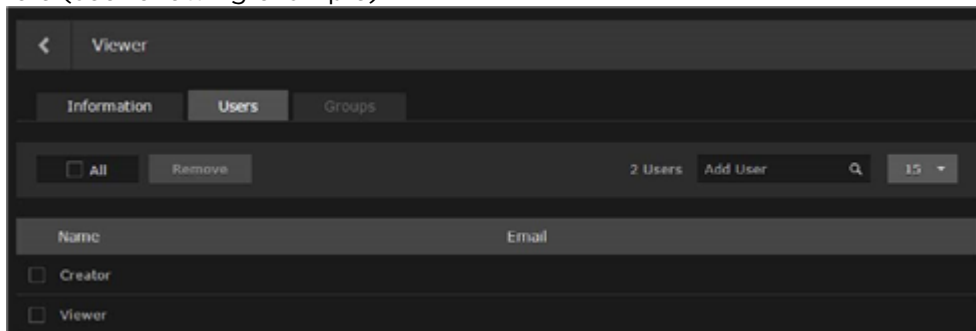
1. Select the role by mousing over the role name in the Roles list and click anywhere in the row.



2. On the Information pane, click the **Users** or **Groups** tab.
3. On the Users or Groups pane, type the first few letters of the user or group name in the Add User/Group search field.



4. Select the user or group from the list that appears. The selected user or group is now added to the role (see following example).



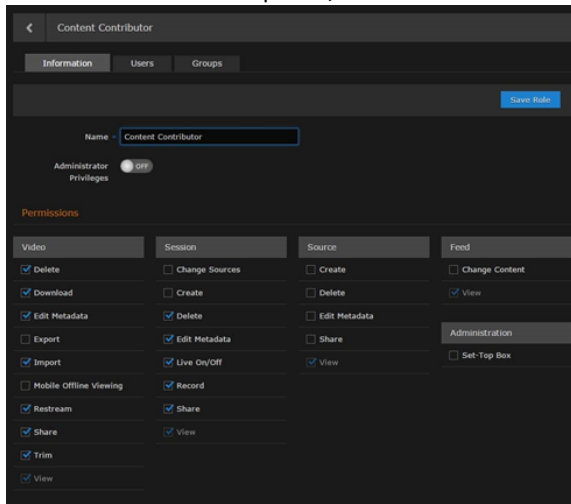
5. Click the  icon to return to the Roles list.

Editing Role Permissions

To edit permissions for a role:

1. Select the role in the Roles list.

- On the Information pane, check or uncheck the permissions as required.



Tip

To give a role full administrative privileges, toggle the Administrator Privileges button to **On**.

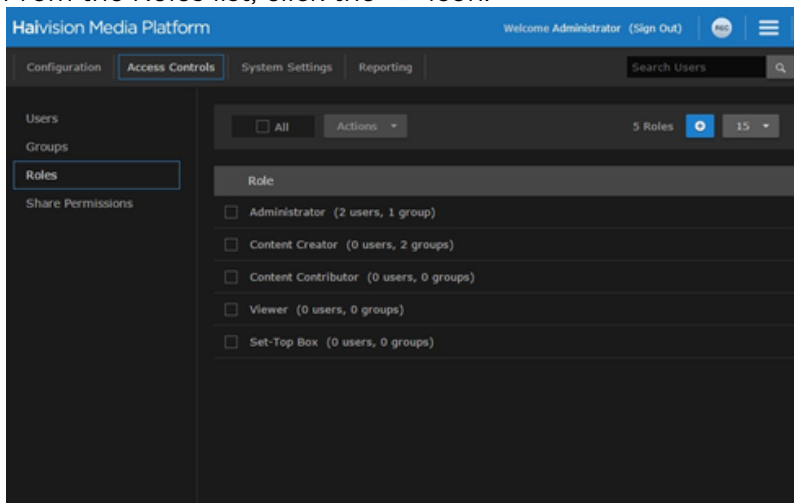
- Click **Save Role**. The selected permissions will be applied to the role.

Creating Custom Roles

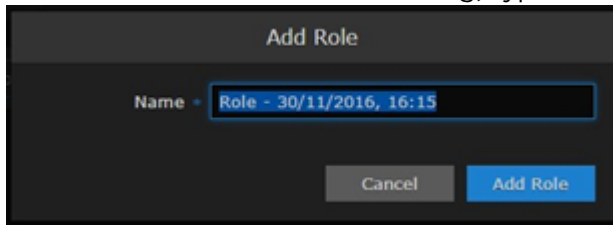
Administrators can create custom roles with full control of fine-grain permissions. For example, end-users can be assigned a role enabling them to create a session but not share it with other users, or to record a video but not download or delete it.

To create a custom role:

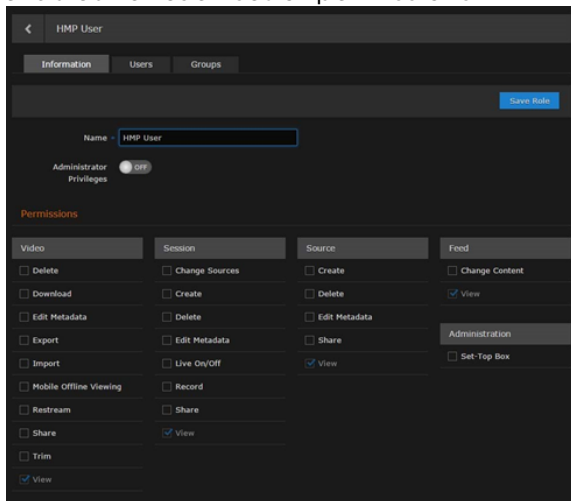
- From the Roles list, click the **+** icon.



- On the Add Role Information dialog, type in a name for the role.



- Click **Add Role**.
- On the Information pane, check the permissions to assign to the role. Note that “View” is always enabled for each set of permissions.



Tip

To give a role full administrative privileges, toggle the **Administrator Privileges** button to **On**.

- Click **Save Role**.
- To add users or groups to the role, click **Users** or **Groups** on the sidebar. See [Adding Users and Groups to Roles](#).
- Click the icon to return to the Roles list.

Default Roles

Important

Administrators may create additional roles as well as edit the permissions for the default roles. Role permissions may be further qualified by “share” permissions. For example, a user with the Viewer role might have been given “OWN” permissions on a video and can therefore edit and delete it.

The following table is a matrix of the default roles (i.e., for system functions) available to assign to HMP users and groups. In addition, where applicable, the table lists the default “share” permissions for content rights (videos and sessions):

Tasks	Roles				
	Administrator	Content Creator	Content Contributor	Viewer	Set-Top Box
Videos					

Delete Videos	✓	OWN	OWN	OWN	✓
Download Videos	✓	OWN	OWN	OWN	✓
Edit Metadata	✓	EDIT	EDIT	EDIT	✓
Export Videos	✓	✓			✓
Import Videos	✓	✓	✓		✓
Mobile Offline Viewing					
Re-stream Videos	✓	✓	✓	✓	✓
Share Videos	✓	OWN	OWN	OWN	✓
Trim Videos	✓	OWN	OWN	OWN	✓
View Videos	✓	✓	✓	✓	✓
Sessions					
Change Sources	✓	OWN	OWN	OWN	✓
Create Sessions	✓	OWN	OWN	OWN	✓
Delete Sessions	✓	OWN	OWN	OWN	✓
Edit Metadata	✓	EDIT	EDIT	EDIT	✓
Live On/Off	✓	OWN	OWN	OWN	✓
Record Sessions	✓	OWN	OWN	OWN	✓
Share Sessions	✓	✓	✓	✓	✓
View Sessions	✓	✓	✓	✓	✓
Sources					
Create Sources	✓	OWN	OWN	OWN	
Delete Sources	✓	OWN	OWN	OWN	
Edit Metadata	✓	EDIT	EDIT	EDIT	
Share Sources	✓	OWN	OWN	OWN	
View Sources	✓	✓	✓	✓	✓
Feeds					
Change Content	✓	✓			✓
View	✓	✓	✓	✓	✓
Administration					
Set-Top Box					✓

Managing Share Permissions

Administrators and other users may assign users "share" permissions for content rights (videos, sessions, sources, and feeds). Share permissions are combined with a user's role and may further qualify the user's privileges.

Permission needs to be granted on both the role AND shared level in order for a user to have access. Basically, a user's role and share permission must match in order for the user to be able to do something.

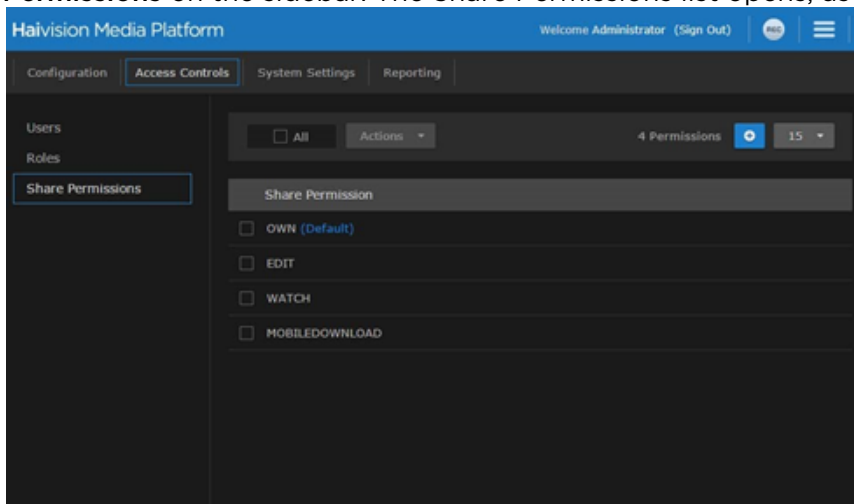
Note

For the default share permissions, see "Sharing Items" in the *Haivision Media Platform User's Guide*.

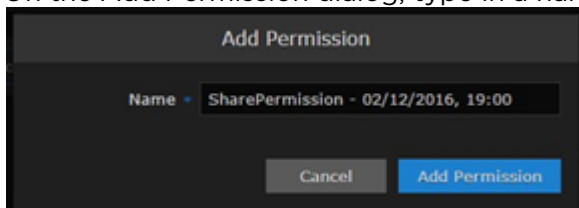
Important

Once an asset is selected for a feed, the feed share permissions take precedence over the permissions assigned to the asset. This means users may have access through feeds to assets that they would not have access to otherwise. For more information, see [Configuring Feeds and Activating the Portal](#).

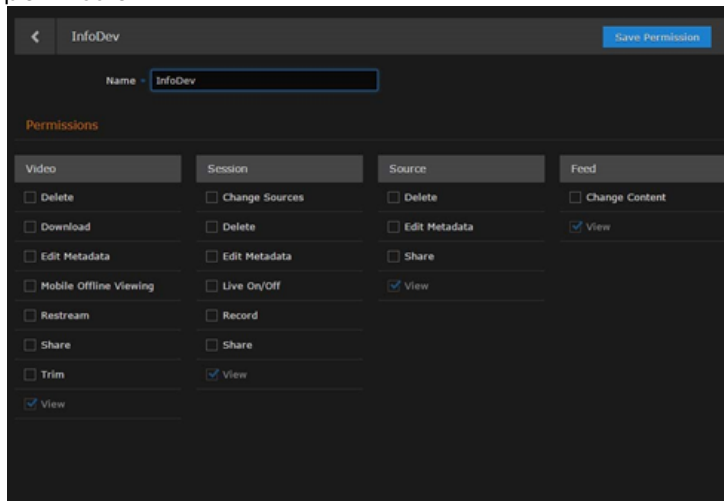
1. On the Administration screen, click **Access Controls** on the toolbar and then click **Share Permissions** on the sidebar. The Share Permissions list opens, as shown in the following example.




2. To create new a share permission, click the **+** icon.
3. On the Add Permission dialog, type in a name for the share permission and click **Add Permission**.



4. On the Share Permissions Information pane, check the permissions to assign to the share permission.



5. Click **Save Permissions**.
6. Click the  icon to return to the Share Permissions list. This share permission is now available to users when sharing videos, sessions, sources, or feeds.

Managing System Settings

This chapter describes how to manage your Haivision Media Platform (HMP) system settings, including authentication services, backup and restore, network settings, licensing, and security. It also provides the steps to install system updates.

Topics Discussed

- [Activating Command Line API Access](#)
- [Backing Up and Restoring HMP](#)
 - [Backing Up HMP](#)
 - [Uploading Downloaded File](#)
 - [Restore to a Previous Configuration](#)
 - [Backup/Restore Settings](#)
- [Managing Certificates](#)
 - [Certificate Settings](#)
- [Managing Directory \(Authentication\) Services](#)
 - [Connecting to a Directory Server](#)
 - [Disconnecting from a Directory Server](#)
 - [Directory Service Settings](#)
 - [Integrating HMP with Single Sign-On \(SSO\) Environments](#)
 - [Single Sign-On \(SSO\) Settings](#)
- [Managing Licenses](#)
- [Configuring Network Settings](#)
 - [Network Settings](#)
- [Managing Network Storage](#)
 - [Configuring Network Storage](#)
 - [Configuring Watch Folders](#)
 - [Formatting XML Data to Import into HMP with Media Files](#)
 - [Importing Custom EPG Data into HMP](#)
- [Managing Security](#)
 - [Configuring Secure Streaming](#)
 - [Configuring a Watermark](#)
 - [Configuring Appliance Security](#)
 - [Security Settings](#)
- [Installing System Updates](#)

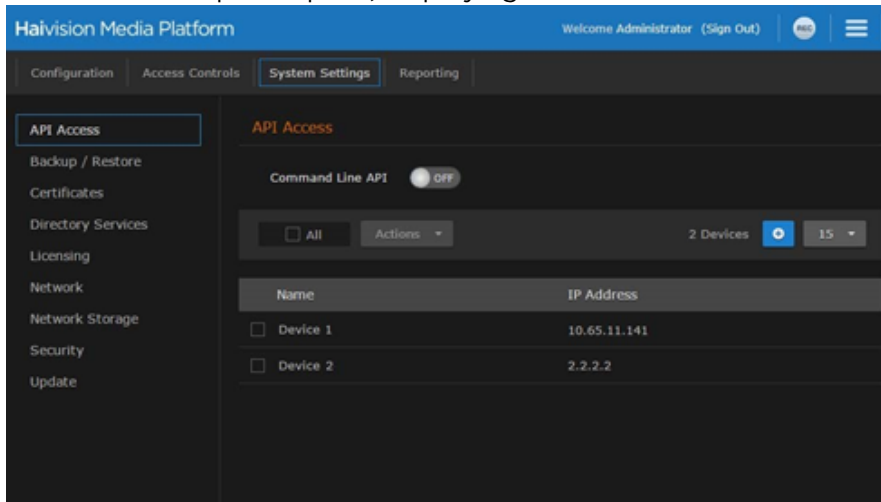
Activating Command Line API Access

In order to use the Command Line API, you need to activate Command Line API access on Haivision Media Platform and add the client devices to the list of authorized devices.

To activate Command Line API access on HMP:

1. On the Administration screen, click **System Settings** on the toolbar and then click **API Access** on the sidebar.

The API Access pane opens, displaying the list of authorized devices (if any).

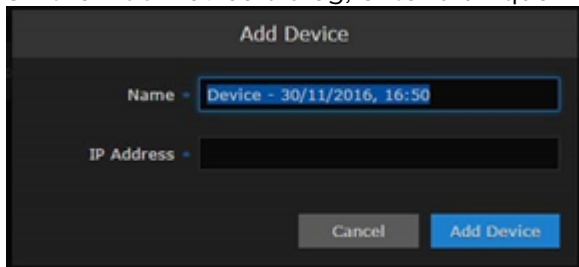


2. Toggle the Command Line API button to **On**.

Note

Toggling this button activates all devices in the list.

3. To add a device to the list, click the **+** icon.
4. On the Add Device dialog, enter a unique name that identifies this device.



5. Enter the IP address of the device that will be accessing the Command Line API.
6. Click **Add Device**. The new device will be added to the list of authorized devices.

Note

Further changes to the list of authorized devices will be applied automatically. You do not need to restart HMP.

Backing Up and Restoring HMP

From the Backup/Restore pane, you can back up your Haivision Media Platform system configuration and permission information, either to a network storage location or your local server, and restore from that location. The backup includes local configuration such as sources and sessions (but not LDAP user information).

Important

Changes to the number of backups to keep or the password, apply to immediate backups (Backup Now), but are *not* saved until you click **Save Settings**. When you refresh the page, restore a backup, or navigate away from the page, these changes are lost.

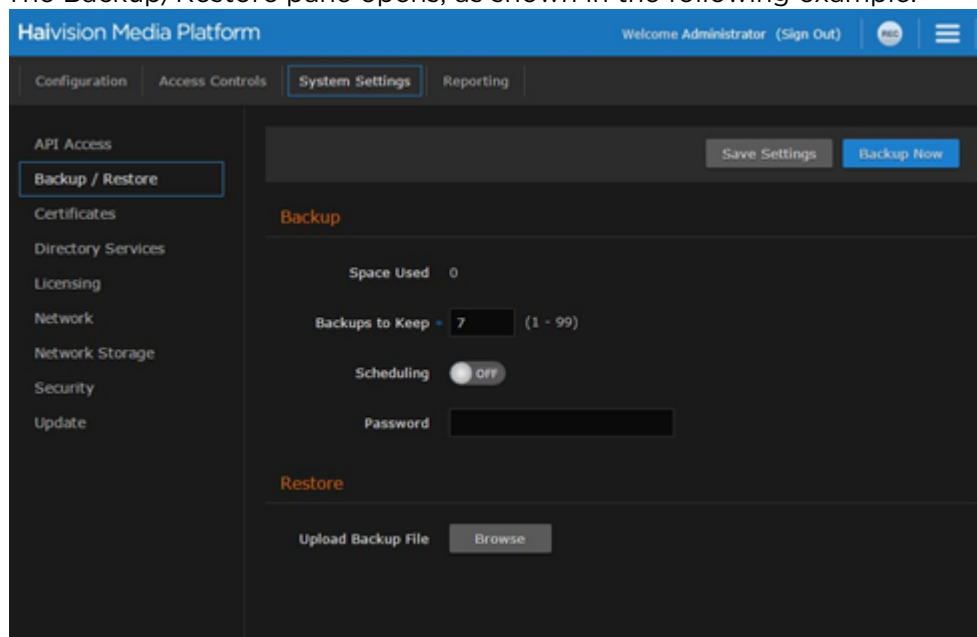
Tip

To back up files onto a Network File System (NFS) storage server, make sure NFS is set to On and configured. See [Managing Network Storage](#). Otherwise when NFS is Off or not available, backups are written to the local server.

To configure and schedule backups:

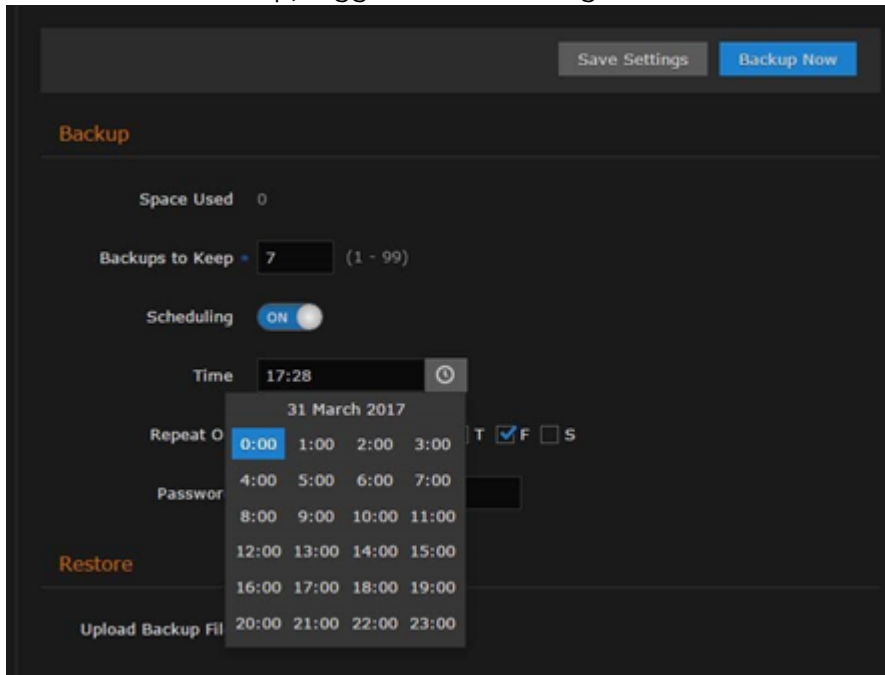
1. On the Administration screen, click **System Settings** on the toolbar and then click **Backup/Restore** on the sidebar.

The Backup/Restore pane opens, as shown in the following example.

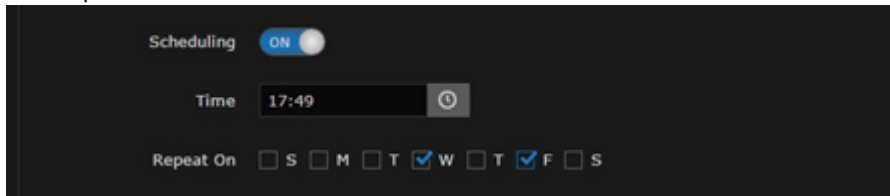


2. To configure the backup rotation (and manage your backup storage media), type in the number of backups to keep, from 1 to 99 (default is 7).

- To schedule a backup, toggle the Scheduling button to On and select the start time



- To schedule recurring backups, check the checkbox next to the days on which to repeat the backup



- ! Important**

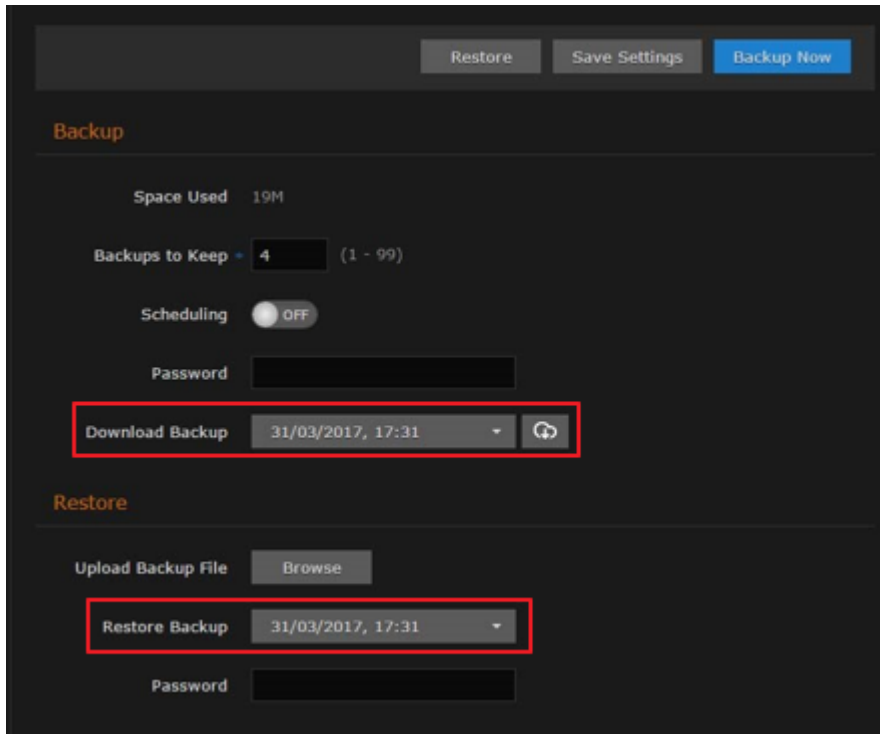
If you lose your Backup password, that backup file cannot be restored.


- Click **Save Settings**.

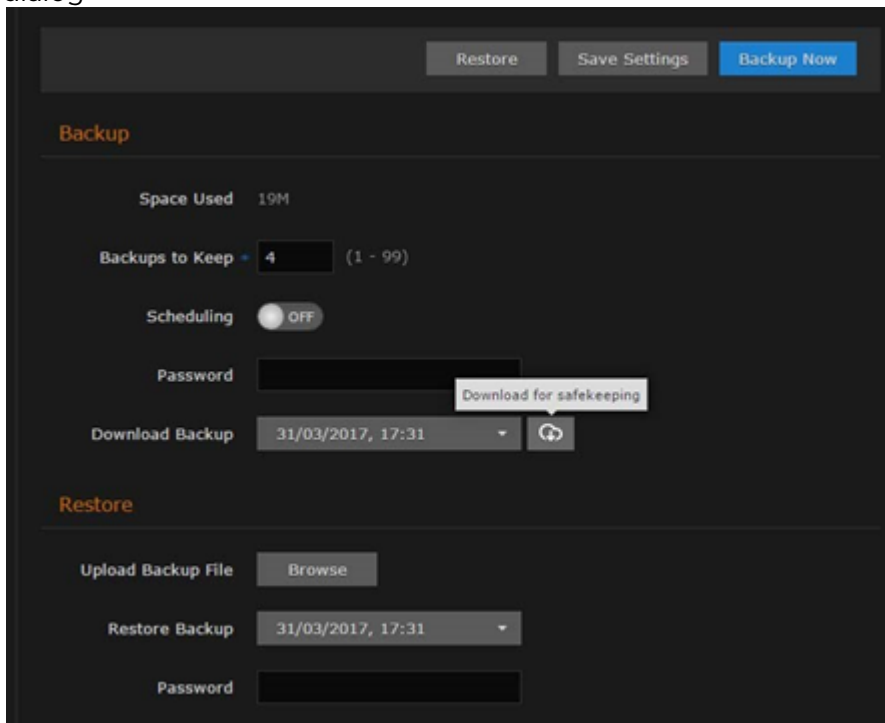
Backing Up HMP

To back up HMP:

- To back up your system immediately, click **Backup Now**. HMP will back up your local configuration and permissioning information and add the new file to the Download Backup and Restore Backup drop-down lists (available once there has been a backup, as shown in the following example).



- To download a backup file (for example, to your local computer for safekeeping), select the file from the Download Backup list, click the  icon, and select the location for the file in the Save File dialog

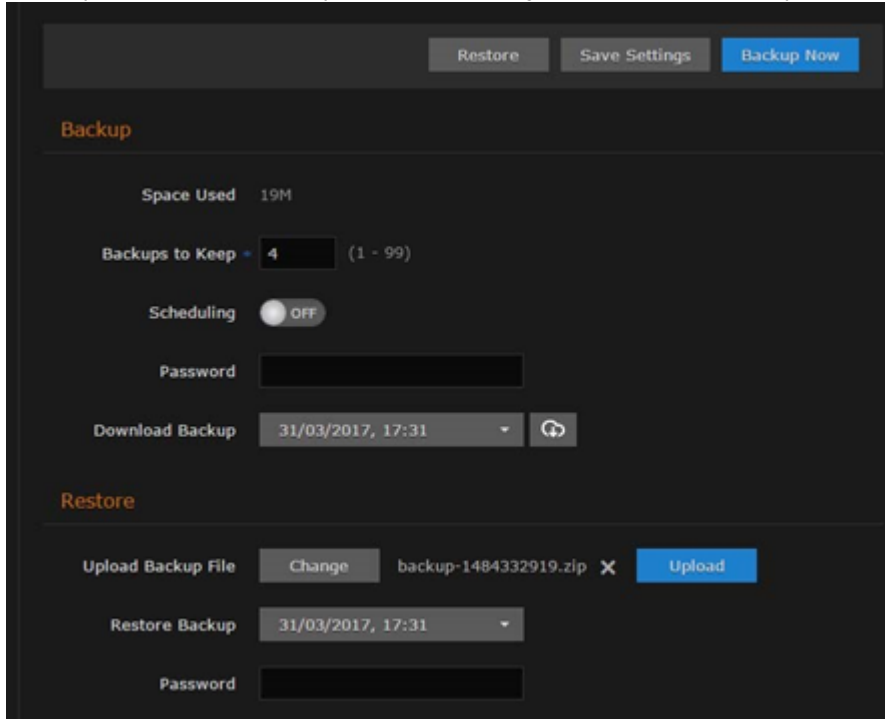


The generated backup file is a .zip file with the syntax shown in the following example: “backup-1467139422.zip”.

Uploading Downloaded File

To upload a previously owned file:

1. On the Backup/Restore pane, click **Browse** and select the file to upload in the Open File dialog. The backup file must be a .zip file with the syntax shown in the previous example.

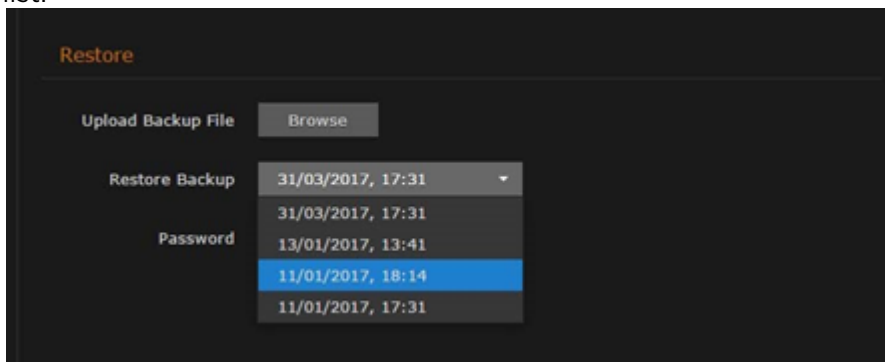


2. Click **Upload**. The file is now added to the Download Backup and Restore Backup lists.

Restore to a Previous Configuration

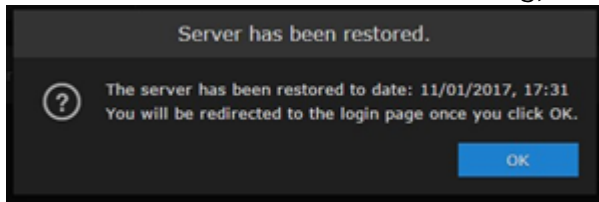
To restore HMP to a previous configuration:

1. On the Backup/Restore pane, select the backup file to restore from the Restore Backup drop-down list.

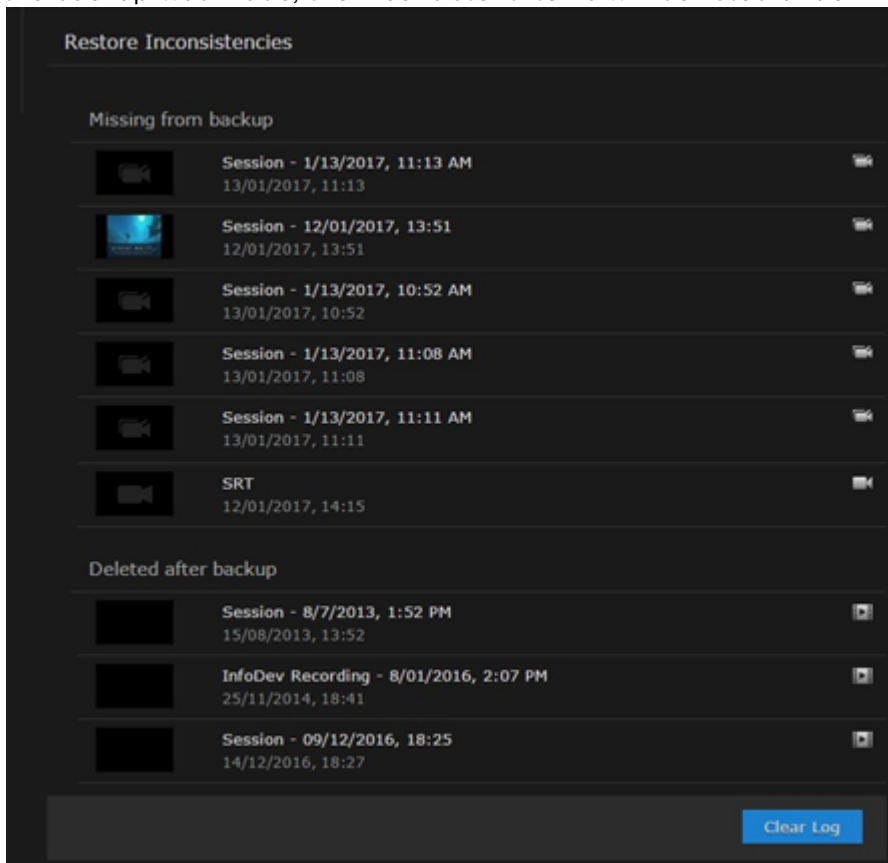


2. If the file is password-protected, type in the password in the Password field.
3. Click **Restore** and then click **Confirm**.

- On the Server Has Been Restored dialog, click **OK** to proceed



- Wait until the update is complete and HMP restarts. Once the appliance has restarted, the browser will display the HMP Sign-in screen (depending on your Web browser and settings). If not, reload the Sign-in screen.
- If any changes have been made to the HMP configuration, such as sources, sessions, or videos since the backup was made, the inconsistent items will be listed under Restore Inconsistencies.




- You can click the link (such as the video shown in the above example), to open the Content Browser, view and optionally restore the change.
- When you are satisfied with the restore, return to the Backup/Restore pane and click **Clear Log**.

Backup/Restore Settings

The following table lists the configurable Haivision Media Platform Backup/Restore settings.

Backup/Restore Setting	Description
Backup	
Space Used	The amount of disk/file spaced used for backups.

Backup/Restore Setting	Description
Backups to Keep	The number of backups to keep. When the maximum number is reached, HMP will delete the oldest file to make room for the newest. 1-99
Scheduling	To schedule backups, toggle the Scheduling button to On. The Time and Repeat On fields then become available.
Time	(Scheduling must be On) Type in or use the calendar to adjust the start date and time.
Repeat On	(Scheduling must be On) To configure recurring backups, check the checkboxes for the days of the week to repeat the backup.
Password	To password-protect the backup, type in a password that will be required to restore the backup.
Download Backup	Select a backup file to download from the drop-down list of download dates.
	Click to download the selected backup file.
Restore	
Upload Backup File	To upload a previously downloaded backup file, click Browse and select the .zip file.
Restore Backup	Select the backup to restore from the drop-down list of backup files.
Password	If the backup is password-protected, type in the password for the file.

Managing Certificates

From the Certificates pane, you can generate an SSL private key and certificate signing request (CSR). You can then import the signed certificate and trust chain returned by the Certification Authority (CA).

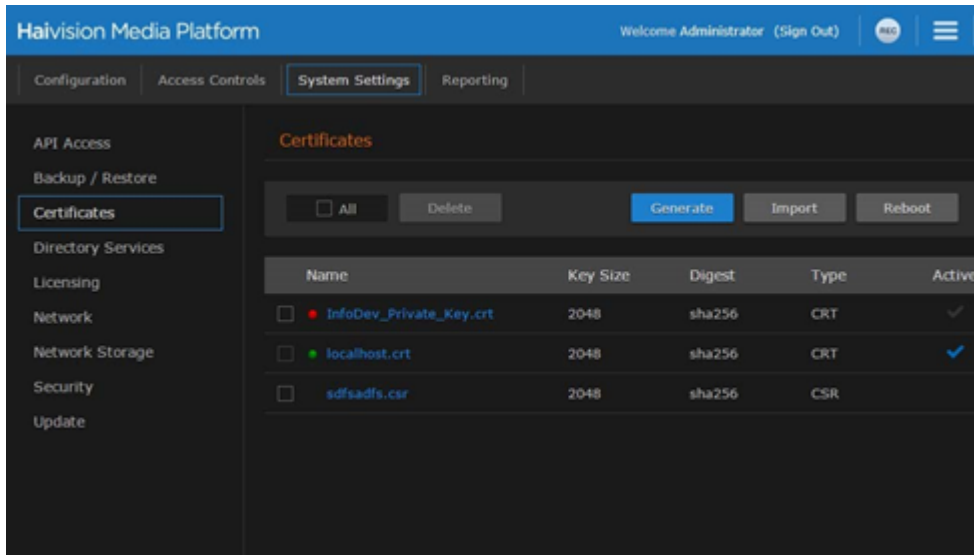
The Certificates pane lists the Identity Certificates available on Haivision Media Platform. An Identity Certificate identifies the device during the authentication process when trying to establish a TLS connection in HTTPS session startup. Its Common Name or Alternate Subject Names must match its IP address and/or its FQDN (Fully Qualified Domain Name) if DNS is used.

The default certificate is localhost.crt (self-signed).

To generate a Certificate Signing Request (CSR):

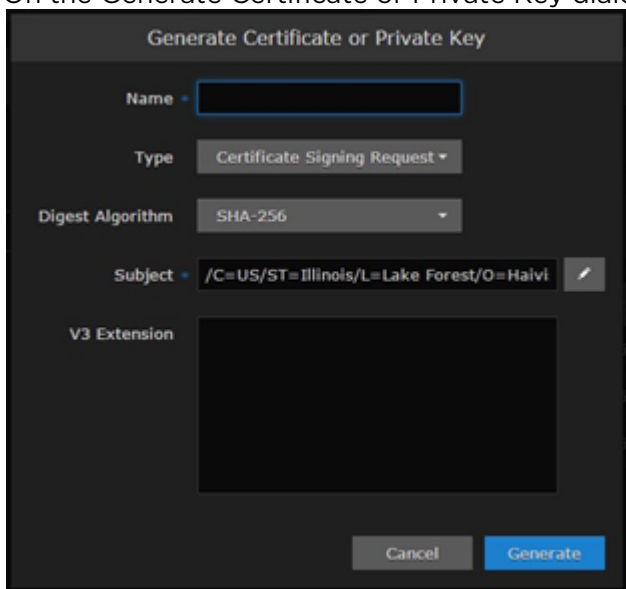
1. On the Administration screen, click **System Settings** on the toolbar and then click **Certificates** on the sidebar.

The Certificates pane opens, as shown in the following example.



The Certificates pane also lists any certificate signing requests generated on HMP. The active certificate is indicated with a blue check.

2. Click **Generate**
3. On the Generate Certificate or Private Key dialog, type in a name for the certificate.



4. Make sure the Type is Certificate Signing Request and fill in the remaining fields. See [Certificate Settings](#).
5. For the subject, type in information about the device that the Identity Certificate represents. For more information, see the "Subject" entry in [Certificate Settings](#).
6. Click **Generate**

Note

The generated CSR file needs to be sent to a Certification Authority to be signed. The CSR content can be viewed by clicking on the CSR name in the list; its content will be displayed in a new window where it can be copied. You can import the signed certificate back later by clicking on the Import button.

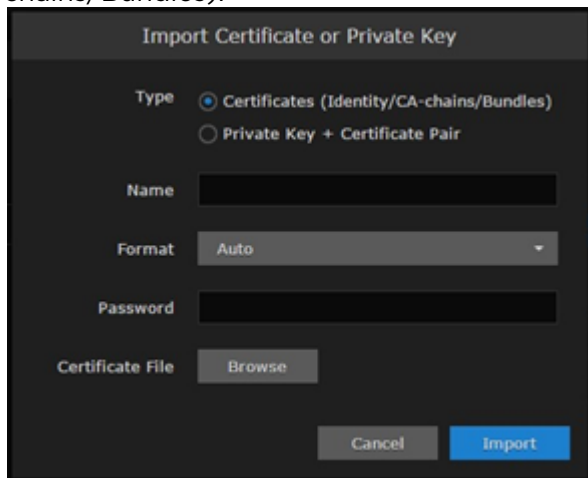
7.

Tip

Keep in mind that there is a difference between importing a new certificate (that was generated externally) and importing a newly signed certificate whose request was previously generated on HMP and exported for signing.

To import and activate a Certificate (CRT):

1. On the Certificates pane, click **Import**.
2. On the Generate Certificate or Private Key dialog, keep the default Type: Certificates (Identity/CA-chains/Bundles).



3. Type in the certificate name and fill in the remaining fields. See [Certificate Settings](#).
4. If your certificate is encrypted, type in the password
5. Click **Browse** and select the CA-signed certificate (CRT) (returned from the certificate request generated in the previous section).
6. Click **Import**. On the Certificates pane, the newly imported certificate will be added to the list and should have a green status LED. Click in the Active column to activate the certificate
7. Click **Reboot** if you have changed the active certificate.

To generate a Private Key:

1. On the Certificates pane, click **Generate**.
2. On the Generate Certificate or Private Key dialog, type in a name for the certificate
3. For the Type, select **Self-Signed**.

4. Check the Create New Private Key checkbox

5. Fill in the remaining fields. See [Certificate Settings](#).
6. Click **Generate**.

⚠ Caution

Clicking Generate will overwrite the current private key and render unusable any certificates based on that key.

The new certificate is added to the Certificates list, and becomes the active certificate.

7. Click **Reboot**.

To import a Private Key:

1. On the Certificates pane, click **Import**.
2. On the Import Certificate or Private Key dialog, for the Type, select **Private Key + Certificate Pair**.

3. Type in the password for the private key
4. To update your security certificate, Click **Browse** and select the new SSL Certificate and SSL Certificate (Private) Key, and optionally an SSL Intermediate Certificate Bundle file.
5. Click **Import**. On the Certificates pane, the newly imported files will be added to the list.
6. Click **Reboot**.

Certificate Settings

Note

Please contact your Network Administrator if you are unsure what to put in any of these fields or if you are unsure whether the setting is required on your network.

Certificate Setting	Description
Generate Certificate or Private Key	
Name	Type in a unique name under which the certificate will be stored on HMP as well as listed on the Certificate pane
Type	<p>Select the Signature Type:</p> <ul style="list-style-type: none"> • Self-signed: The certificate will be generated and signed by the system, and the name will be added to the list of Identity Certificates. • Certificate Signing Request: A request will be generated, and its name will be added to the list of Identity Certificates. The request will be located in your home directory (accessible through the CLI), or you may export it by clicking on the View button and copying the content into a new file in a text editor. In its generated form, this certificate is still a request and cannot be used as an Identity Certificate before it is signed by a CA, and imported back.
Digest Algorithm	<p>Select the digest algorithm (Secure Hash Algorithm):</p> <ul style="list-style-type: none"> • SHA-256 • SHA-384 • SHA-512
Subject	<p>The Subject identifies the device being secured, in this case, HMP. Type in the subject in the form: "/C=.../ST=.../L=.../O=.../OU=.../CN=..." where the most common attributes are:</p> <ul style="list-style-type: none"> • /C Two Letter Country Name • /ST State or Province Name • /L Locality Name • /O Organization Name • /OU Organizational Unit Name • /CN Common Name <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p>Tip</p> <p>For successful authentication, the Common Name in the certificate should be the IP address (by default) or domain name of the device.</p> </div>

Certificate Setting	Description
V3 Extension	<p>V3 extensions allow more configuration options to be inserted in the Code Signing Request, such as alternative subject names and usage restrictions to certificates.</p> <p>To add one or more Subject Alternative Names, enter the same information that would go in the extensions section of an OpenSSL configuration file. For example:</p> <pre>[req] req_extensions = v3_req [v3_req] # Extensions to add to a certificate request subjectAltName = @alt_names [alt_names] DNS.1 = server1.example.com DNS.2 = mail.example.com DNS.3 = www.example.com DNS.4 = www.sub.example.com DNS.5 = mx.example.com DNS.6 = support.example.com</pre>
Import Certificate	
Type	<p>Select the certificate Type:</p> <ul style="list-style-type: none"> • Certificates: (Identify/CA-chains/Bundles) • Private Key + Certificate Pair
Name	Name of the certificate.
Format	<p>Select the file format for the Certificate (the formats differ in the way the file is encrypted):</p> <ul style="list-style-type: none"> • Auto: detected from the file extension • der: Distinguish Encoding Rules • pkcs #7 • pkcs #12
Password	If the imported certificate contains a password protected private key, type its password in this field. Leave this field empty if the file is not password-protected.
Certificate File	Select the file to upload

Managing Directory (Authentication) Services

Important

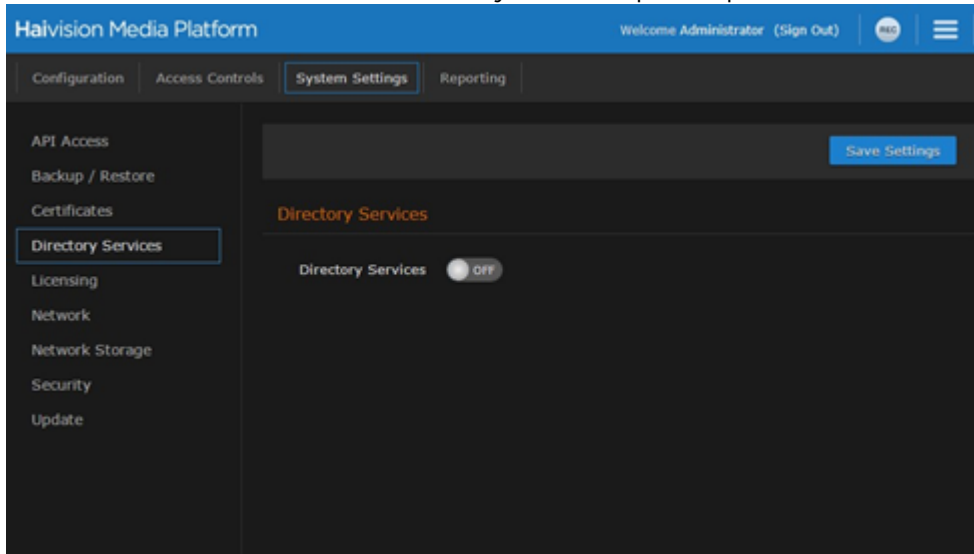
If Haivision Media Platform is connected to an LDAP or Active Directory server, the Users and Groups lists will be populated with information from the directory server. In an LDAP/AD environment, you cannot add or modify users or groups directly from HMP. LDAP and Active Directory are used for authentication purposes only. No HMP data is stored or changed on these systems.

You can also integrate HMP with an Active Directory-based single sign-on (SSO) environment. For details, see [Integrating HMP with Single Sign-On \(SSO\) Environments](#).

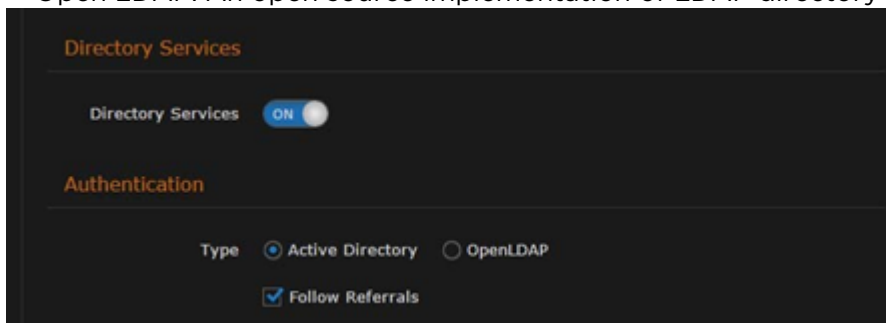
Connecting to a Directory Server

To connect HMP to a Directory Server:

1. On the Administration screen, click **System Settings** on the toolbar and then click **Directory Services** on the sidebar. The Directory Services pane opens.



2. To connect to an LDAP or Active Directory server, toggle the **Directory Services** button to **On**. The Directory Services configuration settings then become available, as shown in the following example.
3. Under Authentication, select type of LDAP implementation for your system, either:
 - Active Directory: An implementation of LDAP directory services by Microsoft.
 - Open LDAP: An open source implementation of LDAP directory services.



4. For the server Connection, Query, and Data Mapping settings, enter or select the new value(s) in the appropriate field(s). See [Directory Service Settings](#).

Connection

IP Address ▾

Port ▾

Connection Basic SSL

Username ▾

Password ▾

Sync Interval ▾ (Minutes)

Query

Base DN ▾

User Context ▾

Group Context ▾

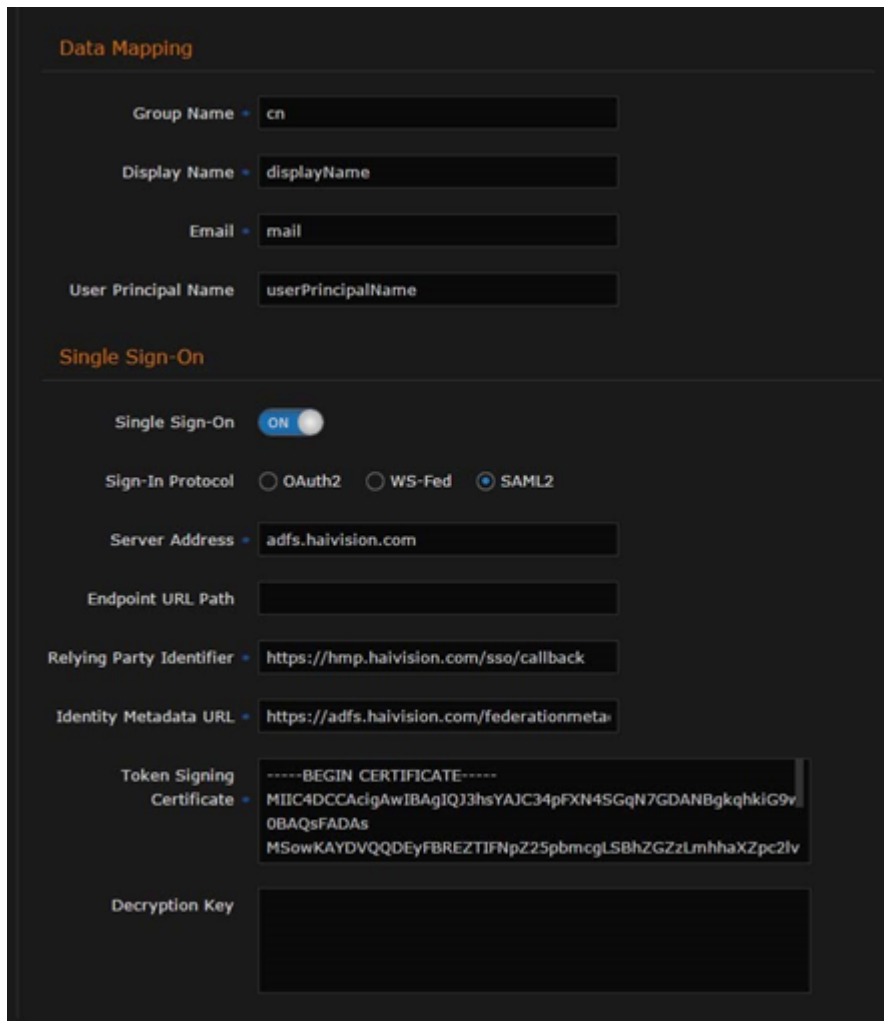
User Attribute ▾

Member Attribute ▾

Group Object Class ▾

User Object Class ▾

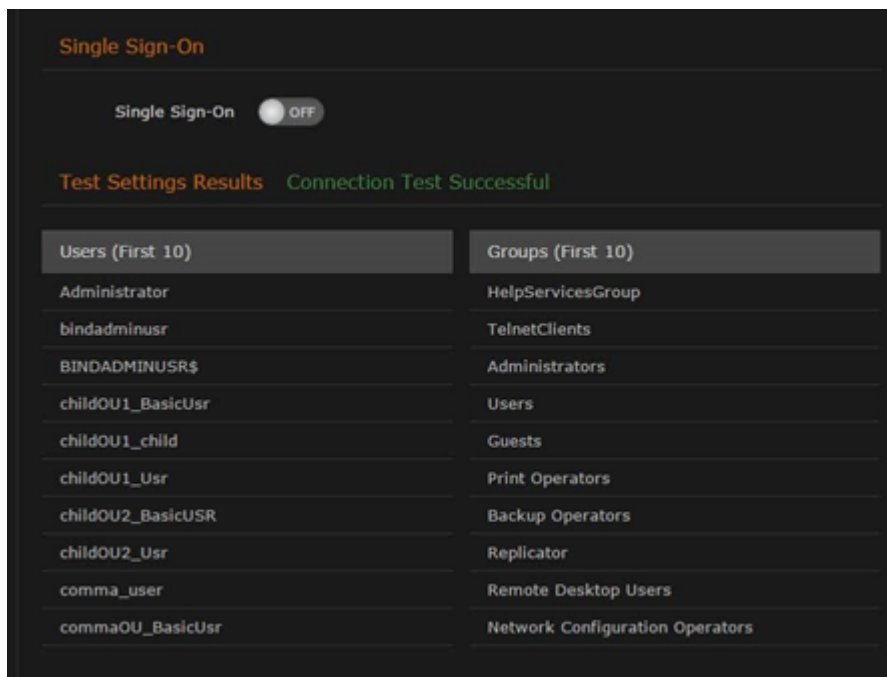
Query Page Size ▾



5. To configure Single Sign-On (SSO), enter or select the new value(s) in the appropriate field(s). See [Integrating HMP with Single Sign-On \(SSO\) Environments](#).
6. To test the connection to the defined directory server, click **Test Settings**.

Note

If you get the message “Anonymous Connection Succeeded,” this means that HMP has found the server, but the Username and/or Password is most likely wrong.
 If you get the message “Connection Test Succeeded,” this means that the server IP Address, Port, Username and Password are correct. A list of the first 10 users and groups will be displayed (as shown in the following example).



7. Click **Save Settings** to save the connection. The Users and Groups lists will now be populated with the LDAP or Active Directory users and groups. For more information, see [Managing Users](#) and [Managing Groups \(LDAP/AD Only\)](#).

Disconnecting from a Directory Server


To disconnect HMP from a Directory Server:

1. On the Directory Services pane, toggle the Directory Services button to **Off**.
2. Click **Save Settings**. The LDAP or Active Directory information will be removed from HMP, and the Users and Groups panes will return to the local account lists.

Directory Service Settings

The following table lists the Directory Service settings.

Setting	Default	Description/Values
Authentication		
Type	Active Directory	Select your authentication server type: <ul style="list-style-type: none"> • Active Directory • OpenLDAP

Setting	Default	Description/Values
Follow Referrals	Enabled	<p>Referral following is enabled when this checkbox is checked (default).</p> <ul style="list-style-type: none"> When enabled and HMP's LDAP client searches for users or groups, it recursively creates new connections to search other servers referenced by the Directory Services server that is currently being searched. When disabled, the LDAP client does not connect to any other servers besides the one specified by the Connection settings. <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p> Tip In certain environments, you may want to disable referrals, for example, in troublesome environments or in places where referral servers do not add any useful information about the configured users.</p> </div>
Connection		
IP Address	n/a	The IP address or domain name of the server that hosts the authentication server.
Port	389	The communications port that the authentication service uses. The default value is 389 (the standard port used for LDAP connections). The default is 636 for SSL connections.
Connection	Basic	Select the encryption protocol: <ul style="list-style-type: none"> Basic: Unencrypted connection SSL: Secure Socket Layer (recommended)
Username	n/a	The username for HMP to connect to your authentication system and query it for the required information. The user account needs to have permission to connect to the server and read the information in the authentication directory.
Password	n/a	The password that corresponds with the user name provided for the Username field.
Sync Interval	60 minutes	The directory server sync interval.
Query		

Setting	Default	Description/Values
Base DN	n/a	<p>The Base DN (Distinguished Name) used by your authentication system. This setting should be provided by your AD/LDAP administrator. For example: <code>ou=staff,dc=haivision,dc=com</code></p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>Note</p> <p>Spaces are not allowed unless they are part of the path.</p> </div> <div style="border: 1px solid #ccc; padding: 5px;"> <p>Important</p> <p>If the Base DN is wrong, HMP will not be able to access the groups. When the connection test succeeds, you will see a list of the first 10 users and groups (see example in Connecting to a Directory Server).</p> </div>
User Context	n/a	<p>The DN of the context (container) where your authentication system users can be found. This setting should be provided by your AD/LDAP administrator. For example: <code>ou=people,dc=haivision,dc=com</code></p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>Important</p> <p>If the User Context is wrong, users will not be able to sign in correctly. For example, they may only have the anonymous privileges or even a blank screen.</p> </div> <div style="border: 1px solid #ccc; padding: 5px;"> <p>Note</p> <p>In order to simplify management of user bases, you can specify separate search bases for User and Group objects. You can also input multiple User Contexts (separated by line feeds, i.e., each line is a new context).</p> </div>
Group Context	n/a	<div style="border: 1px solid #ccc; padding: 5px;"> <p>Note</p> <p>See previous Note to input multiple Group Contexts.</p> </div>
User Attribute	sAMAccount Name	<p>The user attribute your directory system uses. OpenLDAP systems normally use “<code>cn</code>” or “<code>uid</code>”, while Active Directory systems normally use “<code>sAMAccountName</code>”.</p>
Member Attribute	memberOf	<p>The member attribute your directory system uses. OpenLDAP systems normally use “<code>member</code>” or “<code>memberUid</code>”, while Active Directory systems normally use “<code>memberOf</code>”.</p>

Setting	Default	Description/Values
Group Object Class	((objectClass= group) (objectClass= groupOfNames))	Object class query for groups. The default will work with almost all directory servers
User Object Class	(objectClass= person)	Object class query for users. The default will work with almost all directory servers.
Query Page Size	1000	Sets the size of a page for paged results. Paged results are typically supported, but the supported page size may need to be configured for your site. If the requested size is not supported by the LDAP server, a non-paged query will be attempted. The default on most directory servers is 1000.
Data Mapping		
Group Name	cn	These are the fields that HMP needs to read from the directory server. The defaults should work on most systems. If your system uses different attribute names, you need to configure them here.
Display Name	displayName	
Email	mail	
User Principal Name	userPrincipal Name	
Single Sign-On		
Single Sign-On	Off	To configure Single Sign-on, see the following section, Integrating HMP with Single Sign-On (SSO) Environments .

Integrating HMP with Single Sign-On (SSO) Environments

As of Version 2.6, you can integrate Haivision Media Platform with an Active Directorybased Single Sign-On (SSO) environment, specifically Active Directory Federation Services (AD FS) and Azure AD. This feature is designed to provide authentication and identity management simplification and centralization.

Single Sign-On enables users to move between services securely and uninterrupted without specifying their credentials each time. Once your users sign into their directory server, they are automatically granted access to HMP.

HMP’s browser-based SSO implementation supports the following standard identity protocols: Security Assertion Markup Language (SAML2), WS-Federation, and OAuth2.

- WS-Fed and SAML2 work for Windows Server 2008+ / AD FS 2.0+ and Azure,
- OAuth2 works for Windows Server 2012 R2 / AD FS 3.0+ and Azure.

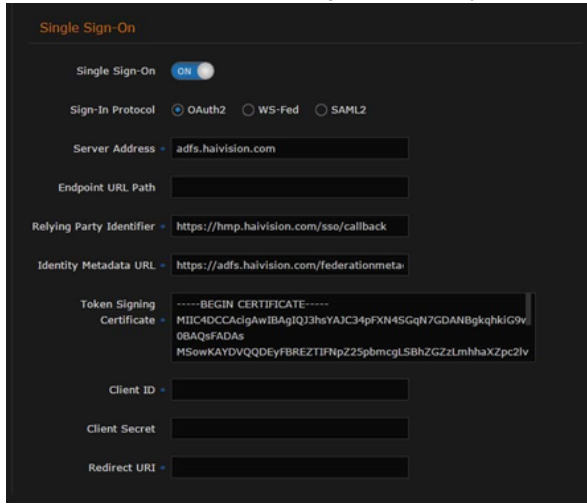
With Azure AD, you must use a Windows Server with Azure AD Connect for Directory Services configuration. The current HMP release does not support SSO for users created directly on Azure AD, and must be able to query a traditional Active Directory system for user and group details after being authorized by Azure AD.

When a user authenticates using single sign-on, HMP takes the User Principal Name (UPN) from the token that it receives from the identity provider and creates a user session for the HMP user with that associated UPN. For AD FS, the Relying Party Trust that HMP is configured to use should pass through the UPN as a claim.

To integrate Haivision Media Platform with an SSO environment:

1. On the Directory Services pane, verify that the **Directory Service** button is toggled to **On**.

2. Scroll down the Directory Services pane and toggle the Single Sign-On button to **On**.



3. **Note**
 Azure AD and AD FS 2.0+ support authentication using WS-Fed and SAML2.
 Azure AD and AD FS 3.0+ (Windows Server 2012 R2) support authentication using OAuth2.

4. Enter value(s) in the remaining field(s). See [Single Sign-On \(SSO\) Settings](#).
 5. Click **Save Settings** to save the connection.

Single Sign-On (SSO) Settings

The following table lists the Single Sign-On (SSO) settings.

Setting	Description	AD FS-specific	Azure AD-specific
Sign-In Protocol	The Sign-In Protocol for your system, either OAuth2, WS-Fed, or SAML2		
Server Address	The address of the identity provider, either a partial URL or an IP address/host name.	For AD FS, just the host name should be sufficient.	For Azure AD, it's generally most convenient to enter your application's sign-on endpoint without the protocol part of the URL, which should be saved for the next field, Endpoint URL Path. For example: https://login.microsoftonline.com/514a94b9-6a5b-4f0b-96aa-63dced118308

Setting	Description	AD FS-specific	Azure AD-specific
Endpoint URL Path	The location on the identity provider's Web server that HMP should redirect unauthenticated browsers to in order to sign in. The Server Address and Endpoint URL Path are combined by HMP to get the full Web address of the sign-in endpoint. When the Sign-In Protocol is OAuth2, the Endpoint URL Path should not include the "authorize" or "token" portions of the URL, because HMP adds these automatically.	<p>If this is empty, HMP assumes that the default AD FS endpoint should be used for the chosen Sign-In Protocol</p> <ul style="list-style-type: none"> For OAuth2, this is <code>/adfs/oauth2</code> For WS-Fed or SAML2, this is <code>/adfs/ls</code> 	<p>When using Azure AD, set this to the part of the sign-on endpoint that was omitted in the Server Address field.</p> <ul style="list-style-type: none"> For OAuth2, that would be <code>/oauth2</code> For WS-Fed, <code>/wsfed</code> For SAML2, <code>/saml2</code>
Relying Party Identifier	A URI that HMP passes to the identity provider that lets HMP select which configuration should be used to authenticate.	For AD FS, this value identifies the Relying Party Trust. On the Windows Server, this can be found under Administrative Tools in AD FS Management under AD FS -> Trust Relationships -> Relying Party Trusts. The value that should be configured will be in the "Identifier" column for whichever Relying Party Trust should be used.	For Azure AD, this value identifies the Application. On the AD Application's "Configure" tab, this is the "App ID URI" value under the Single Sign-On section.

Setting	Description	AD FS-specific	Azure AD-specific
Identity Metadata URL	When HMP's authentication service starts up, it loads the Token Signing Certificate automatically from the Identity Metadata URL. Single Sign-On configuration requires either the Identity Metadata URL or Token Signing Certificate field to be configured. If both are configured, HMP uses the specified Token Signing Certificate and ignores the Identity Metadata URL. If the Sign-In Protocol is WS-Fed or SAML2, the Identity Metadata URL should be the identity provider's Federation Metadata document.	<p>For AD FS, the value that should be entered will look something like: https://adfstest.local/FederationMetadata/2007-06/FederationMetadata.xml The default endpoint on AD FS is /FederationMetadata/2007-06/FederationMetadata.xml</p> <div style="border: 1px solid green; padding: 5px;"> <p>✓ Tip You can check what Federation Metadata endpoint is currently set to on Windows Server's Administrative Tools -> AD FS Management under AD FS -> Service -> Endpoints.</p> </div>	<p>For Azure AD, the Federation Metadata URL will be something like this: https://login.microsoftonline.com/514a94b9-6a5b-4f0b-96aa-63dced118308/federationmetadata/2007-06/federationmetadata.xml</p> <div style="border: 1px solid green; padding: 5px;"> <p>✓ Tip You can find this by going to your Application on Azure AD and selecting View Endpoints on the bottom of the browser window. The URL will be labeled "FEDERATION METADATA DOCUMENT".</p> </div> <p>When the Sign-In Protocol is OAuth2, the Identity Metadata URL should be an OpenID Provider Metadata URL, which is currently available for Azure AD but not AD FS (as of 3.0). This URL should look something like this: https://login.microsoftonline.com/514a94b96a5b4f0b-96aa63dced118308/v2.0/.wellknown/openid-configuration</p>
Token Signing Certificate	HMP needs to know the Token Signing Certificate used by the identity provider to verify that any tokens that it receives after a successful sign-in have not been tampered with.	When using AD FS with the Sign-In Protocol set to WS-Fed or SAML2, the Identity Metadata URL setting can be set to the AD FS Federation Metadata endpoint. In this case, the Token Signing Certificate will be fetched automatically so this value does not need to be configured. For OAuth2, AD FS on Windows Server 2012 R2 does not currently have an OpenID Provider Metadata endpoint, so the Token Signing Certificate has to be configured	With Azure AD, HMP also fetches Token Signing Certificate automatically from the Identity Metadata URL so this value does not need to be configured.

Setting	Description	AD FS-specific	Azure AD-specific
Decryption Key	(SAML2 only) The Decryption Key is used to decrypt an encrypted assertion response after a successful sign-in. This setting is optional, as the assertion response may not be encrypted at all depending on the configuration of the identity provider.	With AD FS, the SAML2 assertion response can be encrypted by setting a certificate under Encryption settings for the Relying Party Trust that HMP uses. The Decryption Key should be the private key associated with the certificate that was set. The WS-Fed token can also be encrypted, although HMP does not currently support decrypting it.	No decryption key is required when using SAML2 for Azure AD.
Client ID	(OAuth2 only) When using OAuth2, HMP must have a Client ID with an associated Redirect URI registered on the identity provider. If it does not, or the configured Redirect URI does not match the value that the Client ID was registered with, all Single Sign-On logins will fail.	With AD FS, you can see all of the Client IDs that are currently registered by running the "Get-AdfsClient" PowerShell cmdlet. The <code>ClientId</code> and <code>RedirectUri</code> fields of the correct client should be set as the values for the Client ID and Redirect URI fields on HMP.	The Client ID can be retrieved from Azure AD by navigating to the Configure tab for the OAuth2 Application and copying the value for Client ID under Properties.
Client Secret	(OAuth2 only) Client Secret is an optional key that HMP can use to get authorized by the identity provider to request access tokens for users.	No client secret is required when using OAuth2 for AD FS.	Client secrets are used by Azure AD. On Azure AD, Client Secrets are simply called "keys" and can be generated on the application's "Configure" page. Under "keys", select a duration for the key to be valid, then click Save on the bottom of the browser window and copy the key value that appears. This is the Client Secret for the application.
Redirect URI	(OAuth2 only) This is the URL that the user should be taken to after authenticating using Single Sign-On. In general, this should be HMP's SSO callback URL, which is <code>https://calypso.local/sso/callback</code> (replacing "calypso.local" with your HMP's real IP/host name). This field is not used for WS-Fed or SAML2 because the redirect is completely configured on the server side of the identity provider.		

Managing Licenses

This section provides instructions to update your Haivision Media Platform license from the Web interface.

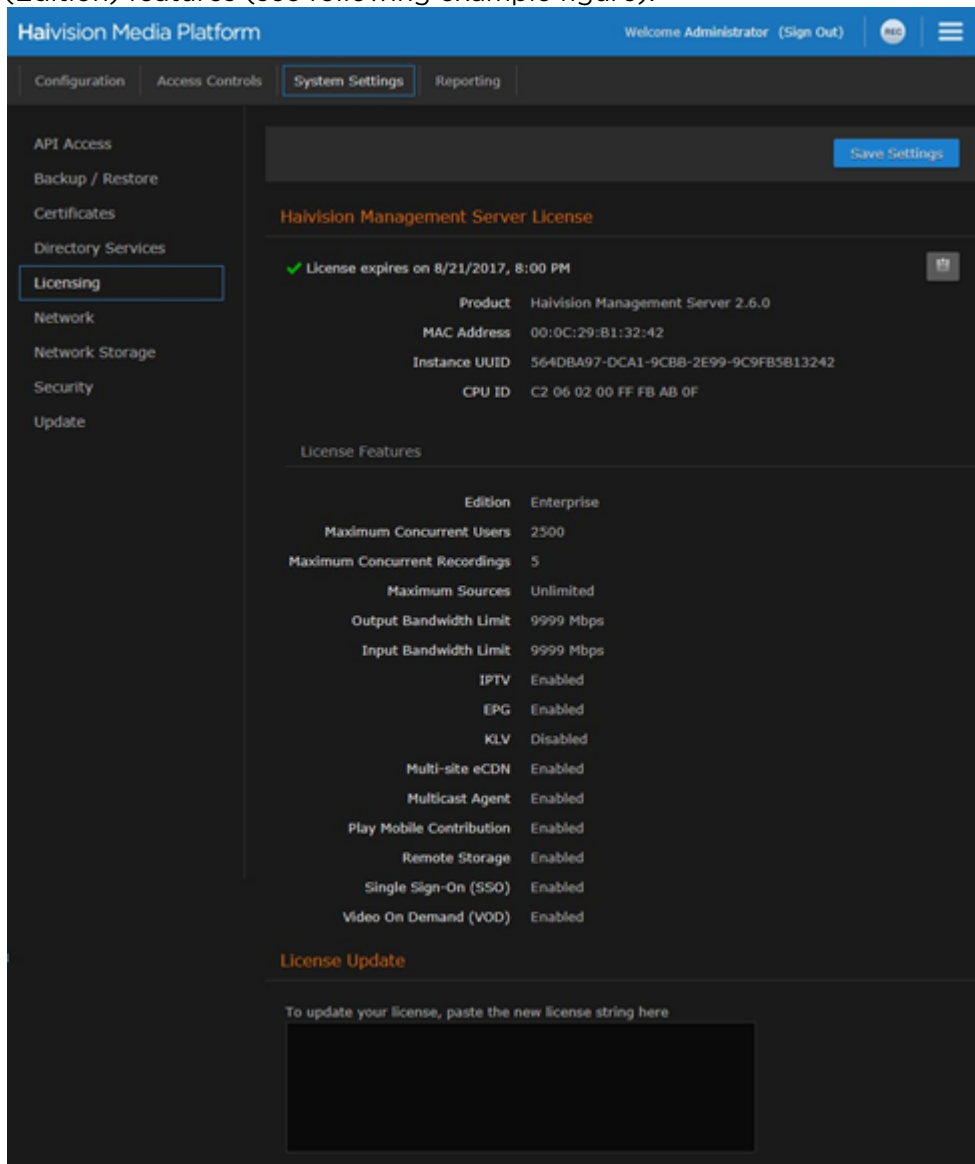
Note

Any update (other than a maintenance release such as v2.x.x) requires a new license. Haivision Media Platform is available in Editions to suit different applications. For information on Editions, see [Product Editions](#).

To update your license:


1. On the Administration screen, click **System Settings** on the toolbar and then click **Licensing** on the sidebar.

The License pane opens, showing the installed license, including its expiry date and license (Edition) features (see following example figure).



Note

With VM installations, the display shows the Instance UUID and CPU ID (if available), whereas with regular (non-VM) installations, those two fields are not displayed.

2. Click  to copy the current product details (product name, version and MAC address) to the clipboard.
3. Contact Haivision Technical Support with this information to request the license key.
4. Once you have the license key, paste the license string in the License text box.
5. Click **Save Settings** to load the license.

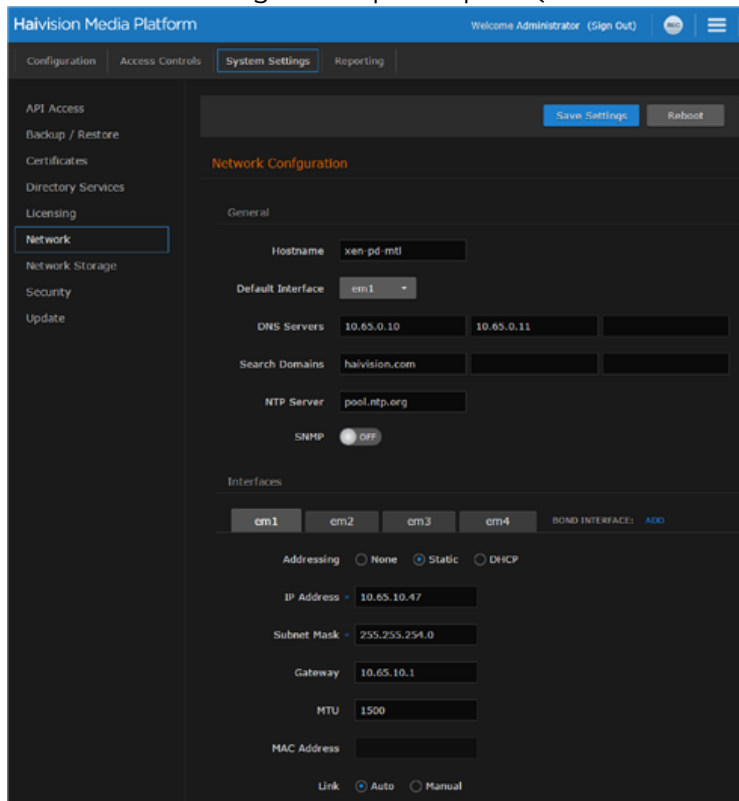
Configuring Network Settings

When setting up Haivision Media Platform, you will need to configure the network settings. This includes general settings such as specifying the server hostname, IP address, subnet mask, and DNS server(s), as well as advanced settings such as setting up multiple network interfaces, NIC bonding, link negotiation settings, and static routes.

To configure the network settings:

1. On the Administration screen, click **System Settings** on the toolbar and then click **Network** on the sidebar.

The Network Configuration pane opens (shown in the following example).

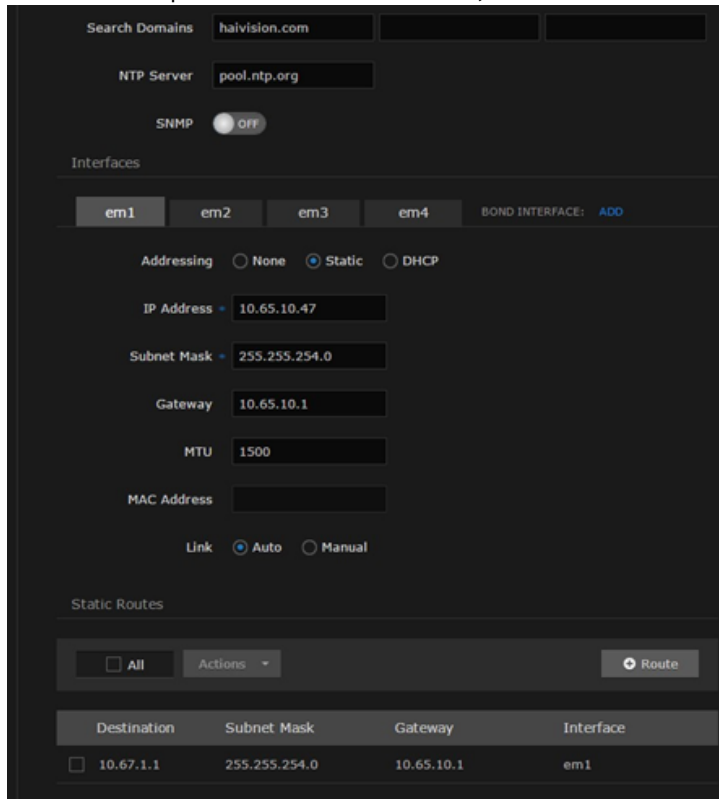


2. Fill in the General section. For details, see [Network Settings](#).
3. To enable SNMP alerts, toggle the SNMP button to **On**.
4. Under Interfaces, select the first interface, if not already selected (e.g., em1 as shown in the above example).

5.  **Note**

When DHCP is enabled, HMP will get an IP Address from a DHCP server on the network to which it is connected. When it is disabled, you must manually enter the appliance’s IP Address and Netmask.

6. Fill in the required fields. For details, see [Network Settings](#).



- 7. To configure multiple network interfaces, select the next interface (e.g., em2) and repeat the configuration.
- 8. To add a bond interface, click **Add** and fill in the fields, including the Bonding Mode.

Tip

Bond interfaces provide a method for aggregating multiple network interfaces into a single logical bonded interface. The goal is to increase throughput and to ensure redundancy in case one of the links should fail. See the "Bond Interface" in [Network Settings](#).

- 9. To add one or more static routes, click **+Route** under Static Routes and fill in the fields.
- 10. Click **Save Settings**.
- 11. Click **Reboot** to restart the HMP server.

Network Settings

Note

Please contact your Network Administrator if you are unsure what to put in any of these fields or if you are unsure whether the setting is required on your network.

Network Setting	Description
General	
Hostname	The hostname to be assigned to HMP. This is a FQDN (Fully Qualified Domain Name); for example, myserver.mycompany.com.
Default Interface	The default Ethernet interface: either eth0, eth1, eth2, or eth4.

Network Setting	Description
DNS Servers	(Optional) The IPv4 address(es) 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 Network Time Protocol (NTP) is enabled, enter the IP address of the NTP server.
SNMP	To enable SNMP (Simple Network Management Protocol) alerts for out-of-band monitoring, toggle this button to On . This tells HMP to start the SNMP server, in order to query for OS information, such as CPU usage. SNMP alerts are typically used by IT administrators to monitor system health.
Read-Only Community	(SNMP must be enabled) Type in the SNMP community string associated with the SNMP Trap Server. This is the string to use when sending a trap to an SMTP Trap server. For example: "Haivision Media Platform"
SNMP Trap Servers	(SNMP must be enabled) The SNMP server to send SNMP Traps to. This is an IPv4 or FQDN of an SMTP Trap server listening for traps via SNMP. For example: SNMP1.mycompany.com
Interfaces	
eth0 eth1 eth2 eth3	<div style="border: 1px solid #ccc; padding: 5px; background-color: #fff9c4;"> <p>Note Network Interface names for Ethernet interfaces may vary, such as eth0/eth1/..., pNp1/pNp2/..., or em1/em2/....</p> </div>
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. See the Bonding Mode entry in this table.
Addressing	Choose whether the interface will use a static or dynamic IP address:
IP Address	<div style="border: 1px solid #ccc; padding: 5px; background-color: #fff9c4;"> <p>Note If DHCP is disabled, you may enter an IP address in dotted-decimal format (xxx.xxx.xxx.xxx).</p> </div>
Subnet Mask	<div style="border: 1px solid #ccc; padding: 5px; background-color: #fff9c4;"> <p>Note If DHCP is disabled, you may enter a Network Mask in dotted-decimal format (e.g., 255.255.0.0).</p> </div>
Gateway	<div style="border: 1px solid #ccc; padding: 5px; background-color: #fff9c4;"> <p>Note If DHCP is disabled, you may enter a gateway address in dotted-decimal format.</p> </div>
MTU	(Maximum Transmission Unit) Specifies the maximum allowed size of IP packets for the outgoing data stream. 228..1500
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	<p>(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.</p> <ul style="list-style-type: none"> • 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. • (Adaptive) Transmit Load Balancing (TLB): 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. • (Adaptive) Active Load Balancing (ALB): 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) Check this checkbox to select the slave interface(s) to allow the bond interface be the master.
Static Routes	
+Route	<div style="border: 1px solid #ccc; padding: 10px; background-color: #fff9c4;"> <p>Note</p> <p>A static route cannot be created with a Subnet Mask of either 0.0.0.0 or 255.255.255.255.</p> </div>

Managing Network Storage

Note

For information on the Network Storage option, please contact Haivision Sales. The NFS server must be configured on your network storage host before setting up Haivision Media Platform.

When setting up Haivision Media Platform, you may (optionally) configure a range of network storage settings.

- [Configuring Network Storage](#)
- [Configuring Watch Folders](#)

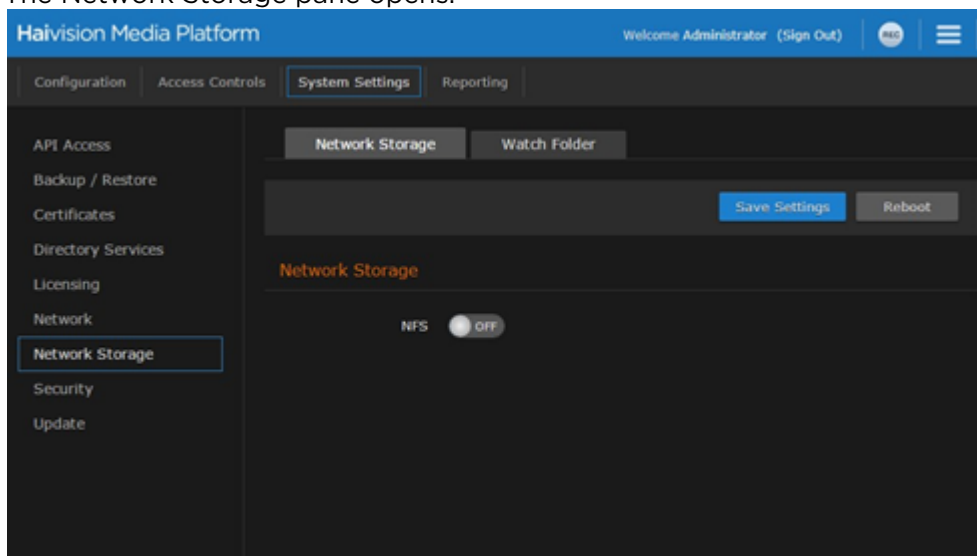
Configuring Network Storage

Network Storage is a licensed option that enables you to move video storage from your HMP server to Network-Attached Storage (NAS) through a Network File System (NFS) connection.

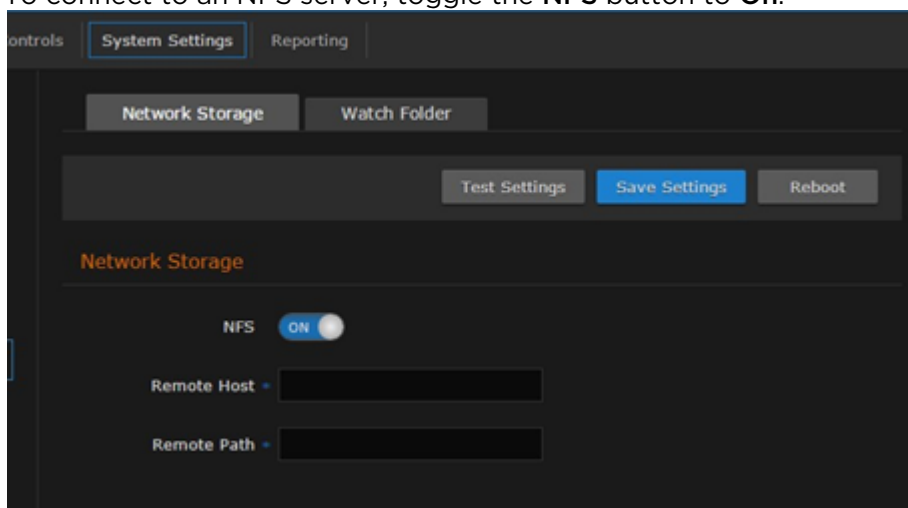
To configure network storage:

1. On the Administration screen, click **System Settings** on the toolbar and then click **Network Storage** on the sidebar.

The Network Storage pane opens.



2. To connect to an NFS server, toggle the **NFS** button to **On**.



3. Fill in the remote host IP address and path
4. To test the connection from HMP to the defined NFS server, click **Test Settings**.
5. Click **Save Settings** to save the connection.
6. Click **Reboot** to restart the HMP server

- After the reboot, click **Migrate** to copy your videos to the NFS server.
The progress bar shows the progress of the migration.
Your videos will now be stored on the defined NFS server.

Configuring Watch Folders

Administrators can also create, edit, and delete a watched folder (enabled either as an Network File System (NFS) or Local folder) that can be configured for permission-based writing (by HMP users).

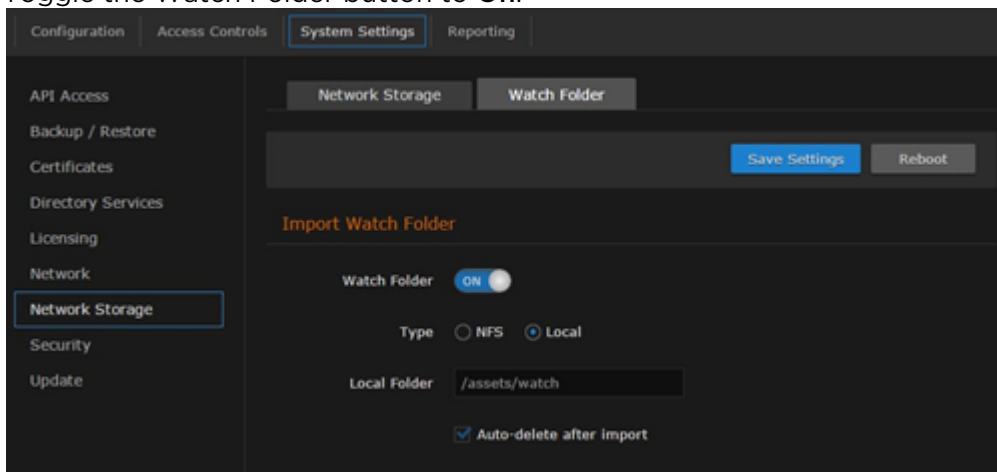
HMP watch folders also support import/ingest of XML sidecar metadata for media assets, and XMLTV files with custom EPG data.

Note

Files that have been “synced” from a watch folder will not reappear if they have expired or been removed from HMP (or otherwise made offline).

To configure a watch folder:

- On the Network Storage pane, click the **Watch Folder** tab.
- Toggle the Watch Folder button to **On**.



- Select the folder type (either NFS or Local). The watch folder can either be on a separate NFS mount, or Local to the `/assets` directory (which may itself be on a physical HMP drive or on a separate NFS volume).
If you choose NFS, provide a Remote Host address and Remote Path.
- Click **Save Settings** to save the connection.
- Click **Reboot** to restart the HMP server.

Tip

To automatically import from a Makito X with Storage: The Makito X export manager will create a folder named “recordings” on the Makito X-configured external storage (NFS or FTP). From HMP, you need to configure the Watch Folder settings to point to this “recordings” folder to automatically import videos.

Formatting XML Data to Import into HMP with Media Files

Haivision Media Platform supports importing HMP (formerly named "Calypso") XML files while editing existing assets or assets that are in the process of being imported. Metadata imported from the HMP XML file will completely overwrite the existing asset metadata.

The following table describes the handling of various HMP XML elements. Elements that are described as "optional" may be left out of the XML file and the corresponding record on the asset will be left as is.

Element	Required	Notes
id	ignored	The original asset UUID is always preserved.
title	optional	When no title is specified the video filename is used.
description	optional	Plain text description with all HTML tags removed.
htmlDescription	optional	Contains the description with HTML tags and embedded images.
ctime	optional	The source creation time: Unix timestamp (seconds).
mtime	ignored	The source's last modified time: Unix timestamp (seconds). Importing an HMP XML file causes the asset's <code>mtime</code> to be updated to the present.
duration	ignored	Duration of the asset is calculated by HMP.
metadata	optional	If missing, metadata and HotMarks on the asset are left as is. If included, all metadata including HotMarks will be overwritten with the new data.
media	ignored	HMP already has internal records of the asset's tracks and posters.

Categories

Category values from an HMP XML file are added to an asset's metadata even when that category does not exist on the importing system.

The HMP system from which the HMP XML file was exported may not have the same metadata and metadata values as the system to which it is imported. After importing metadata values to a system that does not have the corresponding metadata, the following behaviors can be observed:

- The exported system's metadata and values do *not* show up on imported asset's Edit Metadata pane.
- The exported system's metadata values do show up on the REST API at `/assets/:id/metadata`.
- Editing the imported asset's metadata values through the Web interface works and does not cause the imported XML metadata values to be deleted.
- When metadata with the same label as the metadata from the imported XML is created, the metadata and the selected values become visible on the imported asset's Edit Metadata pane.
- All metadata values from the imported XML will be preserved even when "Custom Values" or "Multiple Values" is not enabled for metadata with the same name, and these values are still preserved when editing values from the Edit Metadata Pane.

Other Metadata

HMP XML import does not check whether other metadata makes valid references on the new system.

- `calypso:recorded_from_session` - If the session does not exist, it will no longer show up as a related asset on any session.
- `calypso:creator` - If the creator does not exist, it will not show up under the "Mine" Browse Content filter for anyone.
- `calypso:expiration_timestamp`
- `calypso:recordGeoaddress`
- `calypso:recordGeolocation`

HotMarks

If the HotMark timestamp described in HMP XML is greater than the duration of the asset to which it is imported, an error will be returned and the XML import will fail. However, if the asset does not have a duration, the XML import will succeed. This can happen when the asset itself is still being imported and no duration can be calculated yet. If the imported asset turns out to have a duration less than the HotMark, then that HotMark timestamp will not be visible on the player, but will show up on the `/assets/:id/hotmarks` API.

Example Calypso XML File

```
<?xml version="1.0" encoding="UTF-8"?>
<asset xmlns="http://xml.haivision.com/calypso" version="1.0">
  <id>a38d140c-2f21-4d14-a1f4-4bee069d5014</id>
  <title>Food TV</title>
  <description>Rachel Ray and a refrigerator</description>
  <ctime>1391542482</ctime>
  <mtime>1391542540</mtime>
  <duration>10868</duration>
  <metadata>
    <entry>
      <name>calypso:creator</name>
      <field>
        <type>STRING</type>
        <value>haiadmin</value>
      </field>
    </entry>
    <entry>
      <name>calypso:recorded_from_session</name>
      <field>
        <type>STRING</type>
        <value>a849de4a-f588-4904-b119-0ff53fda8cae</value>
      </field>
    </entry>
    <entry>
      <name>calypso:recordGeoaddress</name>
      <field>
        <type>STRING</type>
        <value>4445 Rue Garand:Montréal:QC:H4R2H9:Saint-Laurent:Rue Garand:4445:Canada</value>
      </field>
    </entry>
    <entry>
      <name>calypso:recordGeolocation</name>
      <field>
        <type>STRING</type>

```



```

        <value>+45.4913235,-73.7214226</value>
    </field>
</entry>
<entry>
  <name>calypso:category:keywords</name>
  <field>
    <type>STRING</type>
    <value>Rachel Ray</value>
  </field>
  <field>
    <type>STRING</type>
    <value>Food</value>
  </field>
  <field>
    <type>STRING</type>
    <value>Refrigerator</value>
  </field>
</entry>
<entry>
  <name>calypso:htmlDescription</name>
  <field>
    <type>STRING</type>
    <value>&lt;b>Test</b>&lt;/div>&lt;img src= "data:image/jpeg;base64,/9j/4Q5.....</
value>
  </field>
</entry>
</metadata>
<media>
  <movie>
    <index>0</index>
    <name>a38d140c-2f21-4d14-af4-4bee069d5014-1.mp4</name>
    <format>mp4</format>
  </movie>
  <poster>
    <index>0</index>
    <name>a38d140c-2f21-4d14-af4-4bee069d5014.png</name>
    <format>PNG</format>
  </poster>
</media>
</asset>

```

Importing Custom EPG Data into HMP

Haivision Media Platform supports importing XML files containing custom EPG data. in the XMLTV format.

When the watch folder feature is enabled, HMP automatically creates an `/xmltv` directory within `/watch`. When you upload a plain `.xml` file containing the XMLTV data, or a `.tar.gz` archive containing multiple such `.xml` files to the `/watch/xmltv` folder, HMP will detect the upload, wait for 20 seconds for it to complete, and then ingest the file(s). Once processed, the custom EPG channels will be available to be scheduled in a Source (added to the existing channel list, if any):

The screenshot shows the 'Add Source' configuration interface. The 'Name' field is set to 'Source - 8/3/2017, 10:29 AM'. The 'Receiver' is set to 'Haivision Management Server (10.65.11.175)'. The 'Type' is set to 'UDP'. The 'Multicast Stream' and 'IPTV Channel' checkboxes are checked. The 'EPG' toggle is turned 'ON'. The 'Schedule' dropdown menu is open, showing a list of channels: 4Music, 4Seven, 5 Star, 5USA, A Network, A Network (Pacific), and ABCF Dupe.

Note

Both read and write permissions must be set on any files uploaded to the `/xmltv` folder, or the import will fail. Once successfully imported, any uploaded files are automatically erased.

Example XMLTV File

```
<tv>
<channel id="215eaf21-b721-4188-9f63-40d911fb7557">
  <display-name>Haivision Shark Fest</display-name>
  <display-name>HSF</display-name>
</channel>
<programme channel="215eaf21-b721-4188-9f63-40d911fb7557" start="20170729000000 +0000"
stop="20170729003000 +0000">
  <title lang="en">Hammer Head Shark Fest</title>
  <desc lang="en">Hammer head wears a t-shirt</desc>
  <rating system="VCHIP">TVMA</rating>
</programme>
<programme channel="215eaf21-b721-4188-9f63-40d911fb7557" start="20170729003000 +0000"
stop="20170729020000 +0000">
  <title lang="en">Tiger Shark</title>
  <desc lang="en"> Tiger Shark fights off a dolphin</desc>
</programme>
<programme channel="215eaf21-b721-4188-9f63-40d911fb7557" start="20170729020000 +0000"
stop="20170729030000 +0000">
  <title lang="en">Sharknado</title>
```

```
<desc lang="en">Shark documentary in tornado of souls</desc>
<rating system="VCHIP">TVMA</rating>
</programme>
</tv>
```

A detailed description of the XMLTV format is available here: <http://wiki.xmltv.org/index.php/XMLTVFormat>

Managing Security

When setting up Haivision Media Platform, you may (optionally) configure a range of security settings.

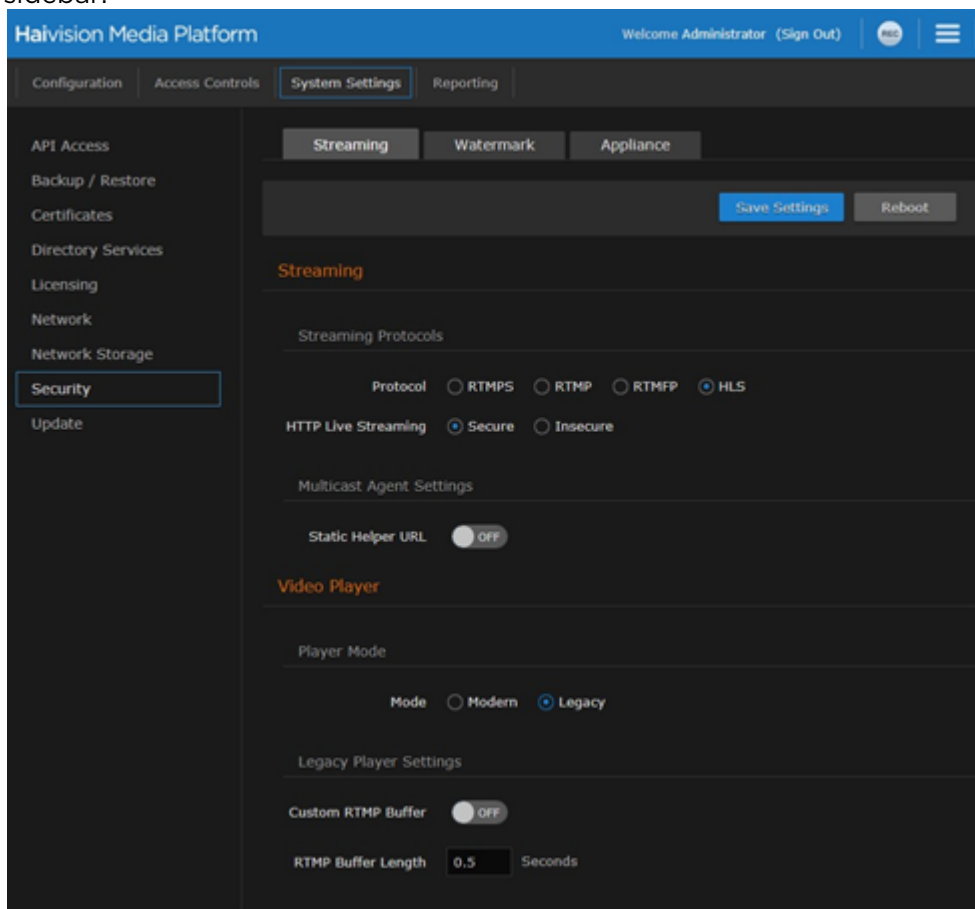
- [Configuring Secure Streaming](#)
- [Configuring a Watermark](#)
- [Configuring Appliance Security](#)

Configuring Secure Streaming

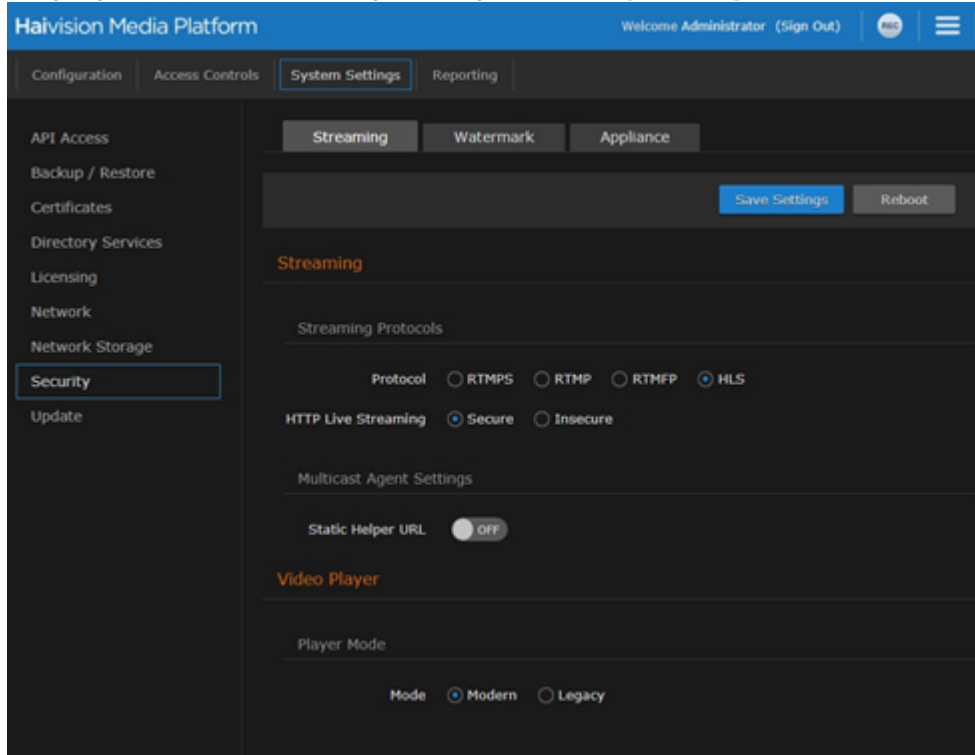
HMP supports encrypted streaming from the appliance to the desktop. From the Streaming pane, you can also set desktop browser playback to either "Modern" or "Legacy". The "Modern" player is a native HTML5 player (via HLS), while the "Legacy" player is a Flash-based player.

To enable encrypted streaming:

1. On the Administration screen, click **System Settings** on the toolbar and then click **Security** on the sidebar.



2. Select the Streaming Protocol, either RTMPS, RTMP, RTMFP or HLS. See the Streaming Protocols entry in [Security Settings](#).
3. (Optional) To specify a fixed hostname for the multicast agent download, toggle the Static Helper URL button to **On**. See the Multicast Agent Settings entry in [Security Settings](#).
4. To switch the Player Mode between the HTML5 and Flash-based players, select either “Modern” or “Legacy”. See the Video Player entry in [Security Settings](#).



5. Click **Save Settings**.
6. Click **Reboot** to restart the HMP server.

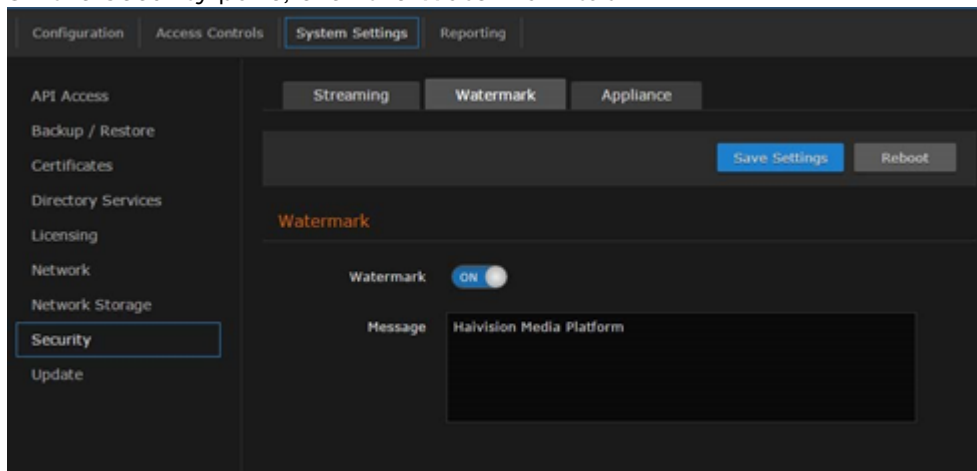
Configuring a Watermark

Note

By default, HLS access is disabled on desktop browsers when watermarking is enabled. However, as of Release 2.5, Haivision Play Set-Top Boxes support watermarking HLS streams and VOD. See the Watermark entry in [Security Settings](#).

To configure a watermark:

1. On the Security pane, click the **Watermark** tab.



2. Toggle the Watermark button to **On**. See the Watermark entry in [Security Settings](#).
3. Type or copy in the text to display in the watermark.
4. Click **Save Settings**.
5. Click **Reboot** to restart the HMP server.

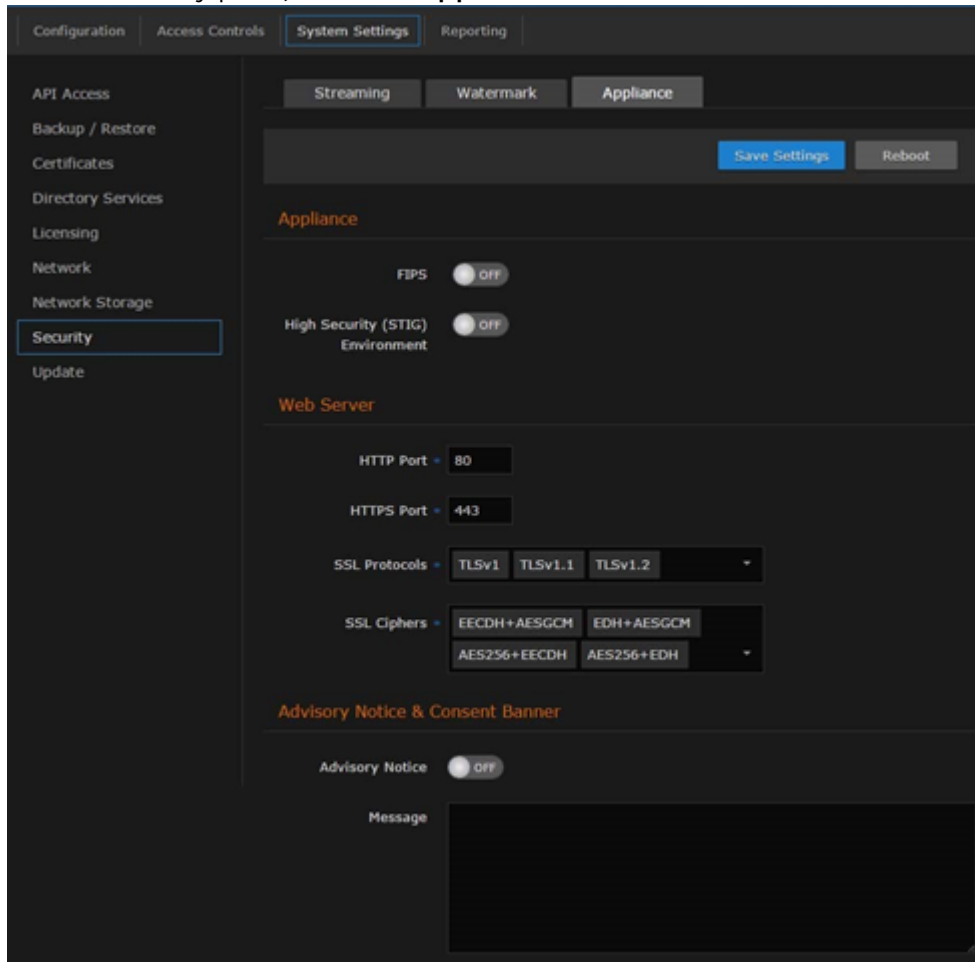
Configuring Appliance Security

From the Appliance pane, you may (optionally) configure additional system security hardening settings and a security banner:

- **Note**
Streams from the source to Haivision Media Platform may be unencrypted, depending on whether you are using UDP or SRT.
- High Security (STIG) Environment hardening settings
- Web Server security and policy settings
- Advisory Notice & Consent Banner

To configure appliance security:

1. On the Security pane, click the **Appliance** tab.

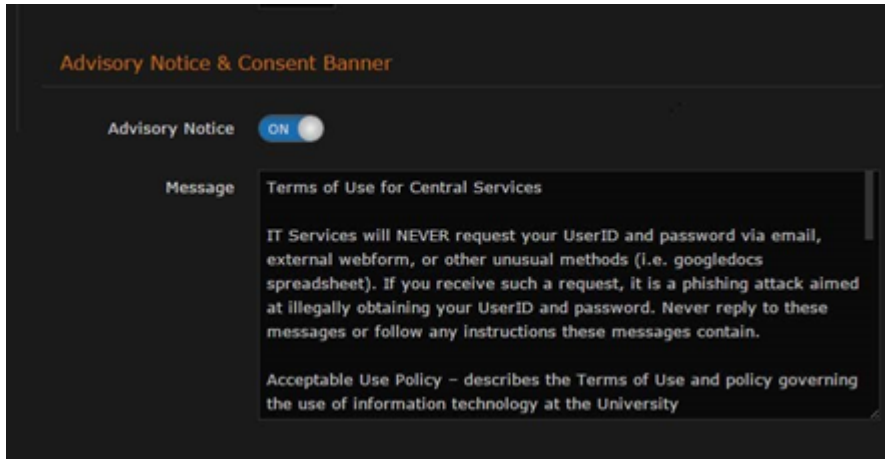


2. To configure FIPS compliance, under Appliance, toggle the **FIPS** button to **On**. See the Appliance entry in [Security Settings](#).
3. To enable security hardening features for high-security environments, toggle the High Security (STIG) Environment button to **On**.
4. To configure security and policy settings, under Web Server, specify the HTTPS or HTTP port, SSL protocols, and SSL cipher values, as required. See the Web Server entry in [Security Settings](#).

! Important

Changes to port numbers take effect immediately. Changing port numbers will affect ongoing operations using the service at that port.

- To configure a banner, type or copy in the desired banner text. Toggle the **Advisory Notice** button to **On**.



- Click **Save Settings** to save the connection.
- Click **Reboot** to restart the HMP server.

Note

All settings except for Web Server require a reboot.

Security Settings

Note

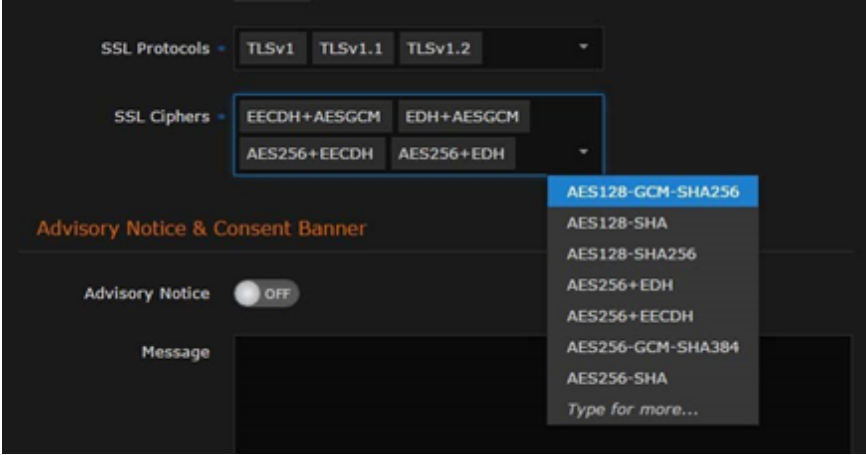
Please contact your Network Administrator if you are unsure what to put in any of these fields or if you are unsure whether the setting is required on your network.

Security Setting	Description
Streaming Protocols	

Security Setting	Description
Protocol	<p>Choose whether HMP will use a plain or secure streaming protocol:</p> <ul style="list-style-type: none"> • RTMPS: Select to enable secured RTMP. Real-Time Messaging Protocol (RTMP) Secure encryption uses SSL (Secure Sockets Layer) certificates to encrypt the traffic for the Web browser. HMP ships with a selfsigned SSL certificate which will work with any configured server hostname. However, Web browsers do not consider this to be a trusted certificate because it was not signed by a Certificate Authority. <p>When accessing the Web interface, users will see a security warning and may be prompted for authorization each time they try to view a video. Some Web browsers may reject the RTMPS connection completely.</p> <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;"> <p>! Important</p> <p>Haivision recommends that site administrators install a signed SSL certificate if they plan to use RTMPS streaming. Site administrators should generally contact their Network Administrators for help getting SSL certificates.</p> </div> <ul style="list-style-type: none"> • RTMP: Select to enable standard RTMP. • RTMFP: Select to enable Real-Time Media Flow Protocol (for multicast viewing). HMP supports RealTime Media Flow Protocol (RTMFP) for application level multicast. This allows users to provide large scale event viewing on networks with no multicast support and without Haivision installed desktop software. • HLS: Select to enable HTTP Live Streaming. HLS is required to support multi-audio (alternate language selection) and closed-captions via multicast to the desktop. (RTMP does not support multiple audio PIDs and requires special CC handling.) <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;"> <p>i Note</p> <p>HLS is compatible with North American live and recorded broadcast sources only (DIRECTV/DISH/ATX/OTA) when normalized via Kraken/HMP IPTV Transcoder 2.4 or later.</p> </div>
HTTP Live Streaming (HLS)	<p>Choose whether HMP will use secure (encrypted) or insecure (unencrypted) mode for HLS streaming. Set to “Secure” by default.</p> <ul style="list-style-type: none"> • Secure: Select to ensure that users cannot stream on a mobile device without a valid security certificate. • Insecure: Select to allow users to stream on a mobile device without a valid security certificate. <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;"> <p>i Note</p> <p>If you select Secure, some mobile devices (notably iPhone/iPad) cannot display the stream unless you have a valid SSL certificate in place.</p> </div>
Multicast Agent Settings	

Security Setting	Description
Static Helper URL	<p>To specify a fixed hostname for the multicast agent download, toggle the Static Helper URL button to On.</p> <div data-bbox="639 317 1498 495" style="border: 1px solid #ccc; padding: 5px; background-color: #fff9c4;"> <p>Note</p> <p>For multicast streaming, Haivision Helper includes a valid SSL certificate that uses a wildcard name. This option allows organizations to use a static address instead. (This is useful in environments without access to the Internet or a DNS server.)</p> </div> <p>For more information, refer to “Haivision Media Platform Integration” in the <i>Haivision Helper Installation Guide</i>, available from the Haivision Support Portal.</p>
Video Player	
Player Mode	<p>To switch desktop browser playback between the HTML5 and Flash-based player, select either:</p> <ul style="list-style-type: none"> • Modern: The Modern player is native HTML5 player (via HLS) for use in all supported desktop browsers. It supports a Flash fallback mode for older browsers that do not support HTML5 video. The Modern player may require slightly more buffering time than the Legacy player, due to differences in HLS vs. RTMP. Also, KLV and Watermarking are not supported in Version 2.6. Protocol must be set to HLS and HTTP Live Streaming (HLS) must be Secure. • Legacy: This is the existing flash-based player. Newly installed v2.6 systems as well as systems upgraded to v2.6 will default to the Legacy player. <p>Player Mode is a system-wide setting.</p>
Legacy Player Settings	(Player Mode must be in Legacy)
Custom RTMP Buffer	To tune the Flash video buffer to smooth out playback, toggle the Custom RTMP Buffer button to On .
RTMP Buffer Length	Type in the buffer length. Range: 0.5..5 seconds.
Watermark	
Watermark	<p>To configure a system-wide, static message to be displayed as an overlay on all videos played back in the user’s authenticated HMP Web browser, toggle the Watermark button to On. Then copy or type in the text to display.</p> <div data-bbox="639 1413 1498 1591" style="border: 1px solid #ccc; padding: 5px; background-color: #fff9c4;"> <p>Note</p> <p>The watermark is a player feature and is not embedded in the video. In order to ensure secure delivery of the video to the player, use RTMP or RTMPS for the Browser delivery (see “Protocol” under Streaming Protocols).</p> </div>
Appliance	

Security Setting	Description
FIPS	<p>To enable FIPS cryptographic compliance on your system, toggle the FIPS button to On. Enabling FIPS cryptographic compliance applies cryptographic modules accredited under the U.S. Federal Information Processing Standard (FIPS) Publication 140- 2.</p> <div style="border: 1px solid #f0e68c; padding: 5px;"> <p>Note</p> <p>To use FIPS mode, the CPU must be an IvyBridge or newer Intel CPU with the RDRAND instruction.</p> </div>
High Security (STIG) Environment	<p>To enable security hardening features for high-security environments, toggle this button to On. This setting includes:</p> <ul style="list-style-type: none"> • Session timeouts/locks for all interfaces. • Stronger password requirements • Lock/disable accounts due to multiple authentication failures or expired passwords. • Disabling unnecessary services. <div style="border: 1px solid #f0e68c; padding: 5px;"> <p>Note</p> <p>This complies with National Institute of Standards and Technology (NIST) Special Publication 800-53 (see https://nvd.nist.gov/800-53/ Rev 4).</p> </div> <div style="border: 1px solid #c0c0c0; padding: 5px;"> <p>Important</p> <p>Only security professionals who understand the cipher support and requirements within their organization should change this setting.</p> <p>Some of these settings are not supported by Haivision Play Set-Top Box or by Google Chrome.</p> <p>The default list has been verified for broad acceptance, and should typically only be adjusted to mitigate new and critical vulnerabilities that may occur.</p> </div>
Lock Session After	<p>(High Security (STIG) Environment must be Legacy) Type in the time period (in minutes) allowed for inactivity before an HMP session is locked (on all interfaces, console, ssh, and Web).</p>
Web Server	
HTTP Port HTTPS Port	<p>To configure the Web port for HMP:</p> <ul style="list-style-type: none"> • HTTP Port number (Default = 80) • HTTPS Port number (Default = 80) <div style="border: 1px solid #c0c0c0; padding: 5px;"> <p>Important</p> <p>If you change the HTTP/HTTPS ports, any connected STBs will lose connection and need to be redirected to the new HTTP port. This can be done manually through the Settings on the STB. However, we recommend that you contact Haivision Technical Support if you intend to change port settings and automatically migrate your STBs.</p> </div>
SSL Protocols	<p>To specify which TLS (Transport Layer Security) versions are accepted, select from the drop-down list: TLS v1, TLS v1.2, TLS v1.2.</p>

Security Setting	Description
<p>SSL Ciphers</p>	<p>To specify which SSL Ciphers are accepted, select from the drop-down list or type in another cipher name:</p> 
<p>Advisory Notice & Consent Banner</p>	<p>When enabled, the banner will appear when users sign in (console, SSH and Web interface) and remain on the screen until the administrator acknowledges the usage conditions and takes explicit actions for further access. The banner is typically an advisory/warning notice to be displayed before the Sign-in page. To enable the banner (as shown in the text box), toggle the Advisory Notice button to On. Type or copy the banner text into the text box.</p>

Installing System Updates

When you first receive the Haivision Media Platform appliance, the necessary software is pre-installed on it. System updates are issued through Haivision’s Support Portal on our website at: <https://support.haivision.com>.

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 [Managing Licenses](#).
Please contact Haivision Technical Support to obtain a valid license key. Only customers under a maintenance agreement can obtain an update package. If you install an update without a valid license key, HMP will not function.
You cannot install system updates from a mobile device.

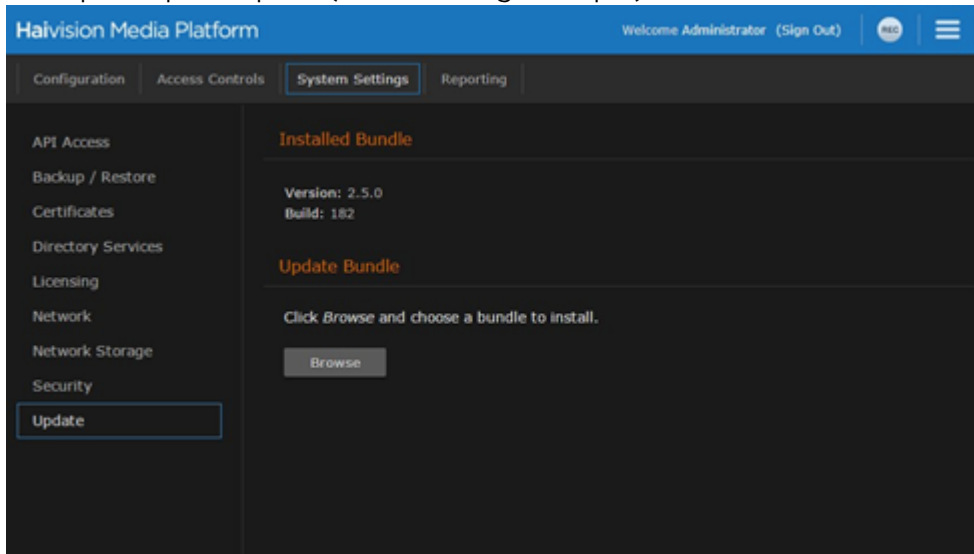
The system update comes in the form of a software package entitled `calypso-xxxxx_rxxxxx_release.hai` , which when loaded will replace the application on your HMP.

This section provides instructions to install a system update from the Web interface.

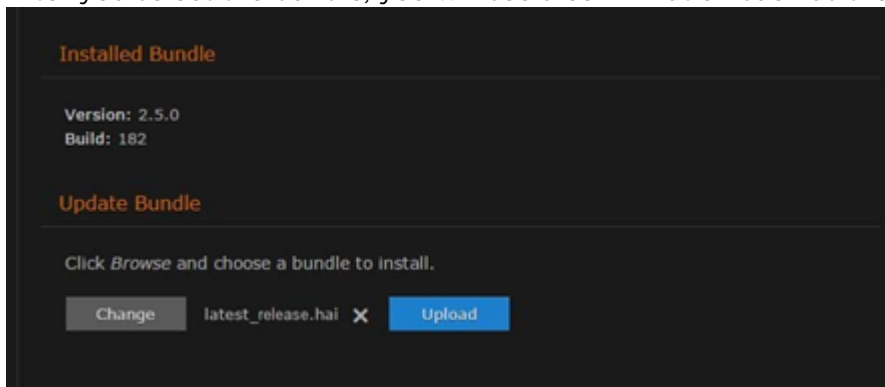
To install a system update:

1. On the Administration screen, click **System Settings** on the toolbar and then click **Update** on the sidebar.

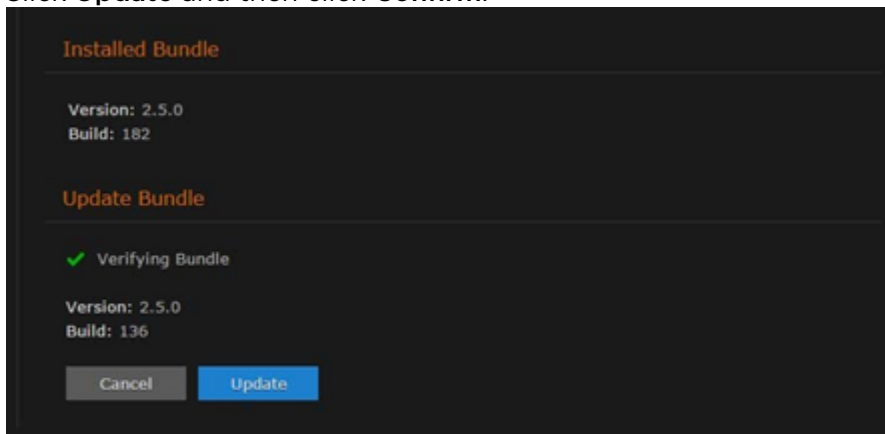
The Update pane opens (see following example).



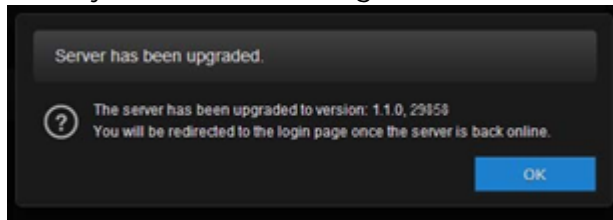
2. Click **Browse** to select the update bundle to load. After you select the bundle, you will see a confirmation such as the following.



3. Click **Upload** to continue. The progress bar shows the progress of the upload.
4. Wait until the bundle has been uploaded and verified.
5. Click **Update** and then click **Confirm**.



6. When you see the following confirmation dialog, click **OK** to continue



7. Wait until the update is complete and the appliance restarts. Once the appliance has restarted, the browser will display the HMP Sign-in screen (depending on your Web browser and settings). If not, reload the Sign-in screen.

Reporting

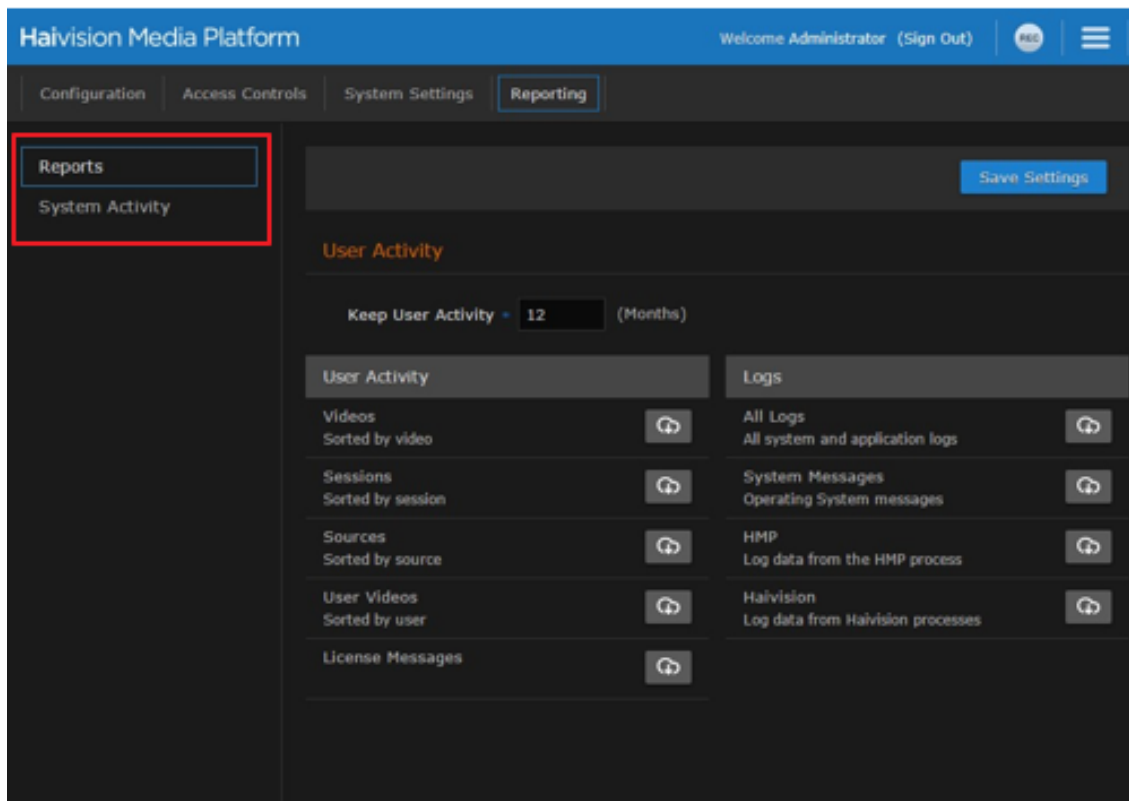
This chapter describes the Haivision Media Platform (HMP) options for viewing reports and system activity.

Topics Discussed

- [Viewing Reports](#)
 - [Reports and Logs](#)
- [Viewing System Activity](#)

Viewing Reports

The Administration Reporting screen includes two panes: Reports and System Activity.



The Reports pane lists user activity reports and system logs that you can download in .CSV file format. See [Reports and Logs](#).

To view the reports:

1. On the Administration screen, (if necessary) click **Reporting** on the toolbar and then click **Reports** on the sidebar.

- To change the time to keep the user activity data, type in the number of months in the Keep User Activity field and click **Save Settings**.

Note

User activity data older than the specified time period will be automatically deleted by the system.

- To download an activity report or log to your local system, click the  icon.

Reports and Logs

The following table lists the available reports and logs:

Report/Log Item	Description
User Activity	<p>A list of user activities (in.CSV file format). For each activity, the list shows the following:</p> <ul style="list-style-type: none"> ID of the user performing the activity (for Web viewers) or the device ID (for STBs), uuid of the associated item, start time of the activity, name or title of the item, the action taken (WATCH, DOWNLOAD, EDIT, SHARE, DELETE, etc.), a URL link to launch it, and stime or start time in extended ISO format <p>Note The time span of the list matches the time limit (number of months) specified in the Keep User Activity field, or covers activity from system startup through the current time, if less than the specified limit.</p>
Videos	<p>Note The Videos report logs all recording viewing activity. It shows either the username for Web viewers or the device ID for STBs, the UUID, time, title, action, and launch URL.</p>
Sessions	Activities sorted by session title.
Sources	<p>Note The Sources report logs all source viewing activity. It is intended to log user activity and STB activity.</p>
User Videos	Activities sorted by user.
License Messages	
Logs	
All Logs	All system and application logs.
System Messages	A log of messages generated by the operating system.
Media Platform	Log data from HMP processes.
Haivision	Log data from Haivision processes.

Viewing System Activity

The System Activity pane summarizes real-time System Status information, such as CPU and Memory usage, and Input and Output bandwidth bitrates, with the option to open a Details panel.

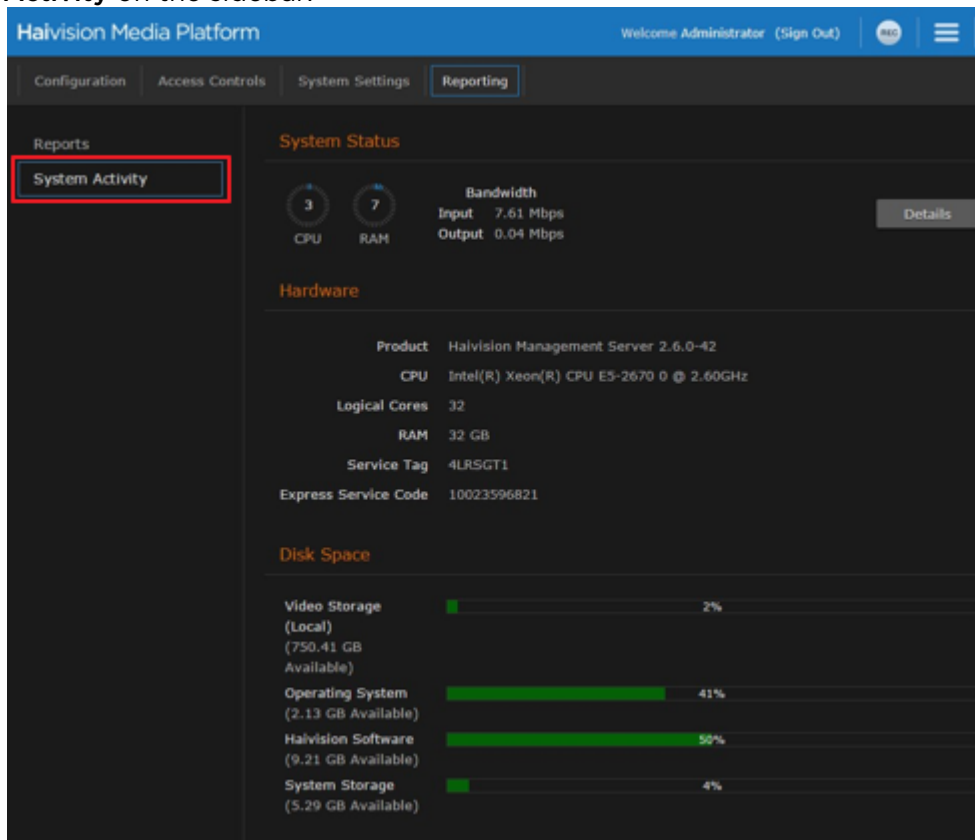
The Hardware summary provides hardware details including whether HMP is running on a VM or a Haivision "appliance".

Note

Haivision recommends that you expand the VM disk when the Video Storage reaches 90% or more of the available space.

To view the System Activity:

1. On the Administration screen, (if necessary) click **Reporting** on the toolbar and then click **System Activity** on the sidebar.



Tip

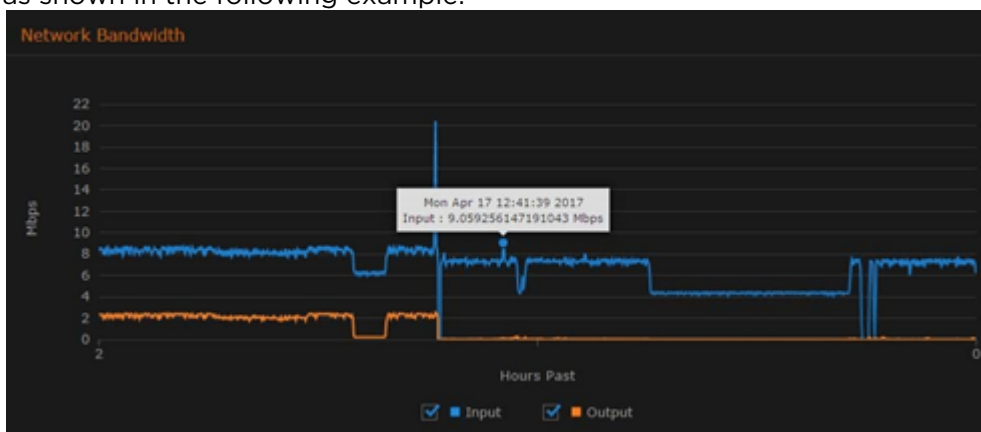
The color of the bars in the Disk Space graph change to orange when the space used on disk reaches 75%, and then to red when it reaches 90%.

2. To view the Network Bandwidth, CPU, and Memory graphs, click **Details**. The X-axis units are days, hours, or minutes past (corresponding to the selected Time Scale). The Y-axis units are as follows:
 - Network (Bandwidth) Usage (megabits per second)
 - CPU (Load) Usage (percentage)

- Memory Usage (percentage used)



3. You can adjust the Refresh Rate (from 1 second to 30 minutes) and the Time Scale (from 5 minutes to 30 days past) for the graphs.
4. To fine-tune the Bandwidth usage graph, select the data to include: Input and/or Output (playback).
5. To display an exact reading for the time and usage, you can mouse over any of the graph lines, as shown in the following example.



KLV Dictionary Format

Note

A sample dictionary file is available from the Haivision Support Portal at: <https://support.haivision.com>

Topics Discussed

- [Dictionary Syntax](#)
 - [Item - Translation](#)
 - [Item - Translation/Format/Suffix/Precision](#)
 - [Item - Enum](#)
- [64-bit Integer](#)

Dictionary Syntax

A dictionary must have a top-level attribute "items" whose type is a list. It contains a list of Local Data Sets (LDS) or items to be decoded. A LDS or item is matched by its universal key (e.g. the universal key of UAS is "06 0E 2B 34 02 0B 01 01 0E 01 03 01 01 00 00 00").

A LDS has also a list of items. Each item can be either of type "item" or "lds" (see example below).

```
{
  "items": [{
    "type": "lds",
    "name": "uas",
    "key": "06 0E 2B 34 02 0B 01 01 0E 01 03 01 01 00 00 00",
    "items": [
    ]
  }]
}
```

Item - Translation

An item can be modified by a translation object. For example:

```
{
  "type": "item",
  "key": "25",
  "format": "uint16",
  "translation": {
    "multiplier": 0.30365453574425879301136797131304,
    "error": 2147483648,      "addend": -900
  },
  "name": "Frame Center Elevation" }
```

If the raw value of item 25 (a 16-bit unsigned integer) is equal to 2147483648, then the decoded value will be the string "error". Otherwise, the decoded value will be the raw value multiplied by 0.30365453574425879301136797131304 and subtracted by 900.

Example:

```
"25": {
  "value": 1000.88
}
```

You can also specify a key for the addend and that key's addend will be used. For example:

```
"addend": {
  "key": "23"
},
```

The default addend is 0.

Item - Translation/Format/Suffix/Precision

The displayValue attribute is formatted according to the format, suffix and precision attributes.

If a format is supplied, the suffix and precision are ignored.

format

Supported formats: time, latitude, longitude.

suffix

The value of the suffix is appended to the value.

precision

The precision controls how many digits there are after the decimal point.

Examples

suffix/precision:

```
{
  "type": "item",
  "key": "5",
  "format": "uint16",
  "translation": {
    "multiplier": 0.0054932478828107118333714808880751,
    "suffix": "°",
    "precision": 2
  },
  "name": "Platform Heading Angle"
}
```

```
{
  "value": 22.0664,
  "displayValue": "22.07°",
  "name": "Platform Heading Angle"
}
```

The second section shows what is sent to Haivision Media Platform based on the dictionary.

format:

```
{
  "type": "item",
  "key": "13",
  "format": "int32",
  "translation": {
    "multiplier": 4.1909515877212172316951757444512e-8,
    "addend": 0,
    "error": 2147483648,
    "format": "latitude"
  },
  "name": "Sensor Latitude"
}
```

```
{
  "value": -34.84,
  "displayValue": "034°50'24\" S",
  "name": "Sensor Latitude"
}
```

Common suffixes include “ °C”, “°”, “m/s”, and “m”.

Item - Enum

An item can be modified by an enum object. The enum object can either have a “values” attribute or a “bits” attribute.

Item - Enum - Values

Example:

```
{
  "type": "item",
  "key": "34",
  "format": "uint8",
  "enum": {
    "values": {
      "0": "Detector off",
      "1": "No icing Detected",
      "2": "Icing Detected"
    }
  }
}
```

The values attribute is a mapping between the raw value (a 8-bit unsigned integer) and a string. If the raw value is 1, then the decoded value is the string “No icing Detected”.

```
{
  name: "Icing detected"
  value: "No icing detected"
}
```

Item - Enum - Bits

Example:

```
{
  "type": "item",
  "key": "47",
  "format": "uint8",
  "enum": {
    "bits": {
      "1": {
        "name": "Laser Range",
        "values": {
          "0": "off",
          "1": "on"
        }
      },
      "2": {
        "name": "Auto-Track",
        "values": {
          "0": "off",
          "1": "on"
        }
      },
      "3": {
        "name": "IR Polarity",
        "values": {
          "0": "blk",
          "1": "wht"
        }
      },
      "4": {
        "name": "Icing detected",
        "values": {
          "0": "off/no ice",
          "1": "on"
        }
      },
      "5": {
        "name": "Slant Range",
        "values": {
          "0": "calc",
          "1": "measured"
        }
      },
      "6": {
        "name": "Image Invalid",
        "values": {
          "0": "valid",
          "1": "invalid"
        }
      }
    }
  }
}
```

The bits object is a mapping between each bit of the raw value and a string. If the raw value of item 47 (a 8-bit unsigned integer) is 3 (0000 0011). Then the decoded value is:

```
"47": {
  "value": {
    "1": {
      "value": "on",
      "name": "Laser Range"
    },
    "2": {
      "value": "on",
      "name": "Auto-Track"
    },
    "3": {
      "value": "blk",
      "name": "IR Polarity"
    },
    "4": {
      "value": "off/no ice",
      "name": "Icing detected"
    },
    "5": {
      "value": "calc",
      "name": "Slant Range"
    },
    "6": {
      "value": "valid",
      "name": "Image Invalid"
    },
    "7": null,
    "8": null
  }
}
```

Since we didn't specify a mapping for bits 7 and 8, they are set to null.

64-bit Integer

64-bit integers are converted to a string because JavaScript doesn't support 64-bit integers.

Technical Specifications

This appendix lists the technical specifications for Haivision Media Platform (HMP).

Topics Discussed

- [Haivision Media Platform \(All Systems\)](#)
- [Haivision Media Platform - 1RU](#)
- [Haivision Media Platform - 2RU](#)

Haivision Media Platform (All Systems)

Management Interfaces	HMP Portal REST API Command Line API Console UI
Features	Session-based workflow Access control HotMarks insertion with annotation API-enabled control Multi-source recording Real-time streaming & sharing No software installation
Inputs	MPEG Transport Stream H.264 ADTS AAC Audio
Output	RTMP, RTMPS, RTMFP, MPEG Transport Stream
Platform	Secure Linux-based OS

Haivision Media Platform - 1RU

Physical Specifications	
Hardware Platform	Haivision optimized server platform (1RU) 1.8 TB RAID 5
Physical Characteristics	Intel-based processing
Power Supplies	2 x 550 W hot swappable
Dimensions (H x W x D)	42.5H x 431W x 642D (mm)
Weight	(Maximum config) 19.9 kg (43.87 lbs.)
Environmental Specifications	
Temperature (Operating)	10° to 35°C (50° to 95°F)
Relative Humidity (Operating)	10% to 80% (noncondensing)

Haivision Media Platform - 2RU

Physical Specifications	
Hardware Platform	Haivision optimized server platform (2RU) 6.6 TB RAID 5
Physical Characteristics	Intel-based processing
Power Supplies	2 x 750 W hot swappable
Dimensions (H x W x D)	86.4H x 431W x 722.8D (mm)
Weight	(Maximum config) 32.5 kg (71.5 lbs.)
Environmental Specifications	
Temperature (Operating)	10° to 35°C (50° to 95°F)
Relative Humidity (Operating)	10% to 80% (noncondensing)

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, Haivision 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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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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	10:00p m - 5:00a m	48 Hours
Urgent	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> 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

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

