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Operations Guide

.AV Framework™ Software for DMPS3

Crestron Electronics, Inc.

Original Instructions
The U.S. English version of this document is the original instructions.
All other languages are a translation of the original instructions.

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Introduction

Crestron® .AV Framework™ software is a web-based management solution that is used to deploy scalable Crestron enterprise room solutions without requiring any programming. The .AV Framework configuration utility is accessible from most web browsers and provides the following functions:

- Select sources and displays.
- Configure device control for Blu-ray Disc® players, cable TV boxes, and video servers.
- Add a compatible touch screen to generate the GUI for one or more display systems.
- Add a compatible button panel to control single display systems.
- Add a Cresnet® network occupancy sensor for additional system automation.
- Connect to Crestron Fusion® software to monitor and control basic room data, system power, source selection, and room scheduling.
- Customize the .AV Framework user experience with extra components, custom functionality, and corporate logos.

.AV Framework is compatible with the DMPS3 series of DigitalMedia™ presentation systems. The DMPS3 device provides A/V switching capabilities for complete configuration and control.

This document provides instructions for setting up the .AV Framework program on the DMPS3 device and explains the setup screens and functions provided in the .AV Framework configuration utility.

> **NOTE:** This document is current as of the .AV Framework 6.32 release.

The following supplemental documents are available:

- For more information on the DMPS3-4K-50 and DMPS3-4K-100-C, refer to the DMPS3-4K-50/DMPS3-4K-100-C DO Guide.
- For more information on the DMPS3-4K-150-C, refer to the DMPS3-4K-150-C DO Guide and the DMPS3-4K-150-C Supplemental Guide.
- For more information on the DMPS3-4K-250-C and DMPS3-4K-350-C, refer to the DMPS3-4K-250-C/DMPS3-4K-350-C Quick Start.

Product Features

The following table shows the devices and product features that are compatible with .AV Framework for the DMPS3 series.

.AV Framework for DMPS3 Feature Comparison Chart

Feature Class	Feature	DMPS3
AirMedia® Presentation Gateway	AM-100	Yes
	AM-101	Yes
	AM-200	Yes
	AM-300	Yes
	AM-3100-WF	Yes
	AM-3200/-WF	Yes
Button Panel	MP-B10 (Ethernet)	Yes
	MP-B10 (Cresnet)	Yes
	MP-B20 (Ethernet)	Yes
	MP-B20 (Cresnet)	Yes
	MPC3-101 Button Mode (Ethernet)	Yes
	MPC3-102 Button Mode (Ethernet)	Yes
	MPC3-201 Button Mode (Ethernet)	Yes
	MPC3-302 Button Mode (Ethernet)	Yes
Cable Caddy	TT-100 (Cresnet)	Yes
	TT-100 (USB)	Yes

Feature Class	Feature	DMPS3
External Switcher	AM-200	No
	AM-300	No
	AM-3200/-WF	No
	DM-NVX-350/-350C	No
	DM-NVX-351/-351C	No
	DM-NVX-352/-352C	No
	DM-NVX-360/-360C	No
	DM-NVX-363/-363C	No
	DM-NVX-D10/D20	No
	DM-NVX-D30/-D30C	No
	DM-NVX-D200	No
	DM-NVX-E10/E20	No
	DM-NVX-E30/-E30C	No
	DM-TX-201-C(2)-S	No
	DM-TX-401-C-S	No
	DM-TX-4K-202-C-S	No
	DM-TX-4K-302-C-S	No
	DM-TX-4KZ-202-C-S	No
	DM-TX-4KZ-302-C-S	No
	HD-MD-200-C-E	No
	HD-MD-200-C-1G-E	No
	HD-MD-300-C-E	No
	HD-MD-400-C-E	No
	HDI-MD-400-C-2G-E	No
	HD-MD-402	No
	HD-MD-421	No
	HD-MD4X1-4KZ-E	No
	HD-MD4X2-4KZ-E	No
	HD-MD4X4-4KZ-E	No
	HD-MD8X4-4KZ-E	No
	HD-PS401/204	No
	HD-PS621/622	No

Feature Class	Feature	DMPS3
External Switcher (continued)	HD-RX-4K-210-C-E/-POE	No
	HD-RX-4K-410-C-E/-SW4	No
	HD-RX-4K-510-C-E/-SW4	No
	Virtual Switcher	No
Occupancy Sensor	GLS-OIR-C-CN	Yes
	GLS-ODT-C-CN	Yes
	CEN-ODT-C-POE	Yes
Endpoint	DM-RMC-4K-100-C	Yes
	DM-RMC-100-C-1G	Yes
	DM-RMC-200-C	Yes
	DM-RMC-SCALER-C	Yes
	DM-RMC-4K-SCALER-C	Yes
	DM-TX-201-C	Yes
	DM-TX-401-C	Yes
	DM-TX-4K-100-C-1G	Yes
	DM-TX-4KZ-100-C-1G	Yes
	DM-TX-4K-202-C	Yes
	DM-TX-4K-302-C	Yes
	DM-TX-201-C-G2	Yes
	DM-RMC-4KZ-100-C	Yes
	DM-RMC-4KZ-SCALER-C	Yes
	DM-TX-4KZ-202-C	Yes
	DM-TX-4KZ-302-C	Yes
Room Sign	SW/SSC/SIW-PCB	Yes
Control Modules	DIN-CEN-CN-2	Yes
	C2N-IO	Yes
	CEN-IO-COM-102	Yes
	CEN-IO-IR-104	Yes
	CEN-IO-IR-204	Yes
	CEN-IO-RY-104	Yes
	CEN-IO-RY-204	Yes

Feature Class	Feature	DMPS3
Touch Screen	TSW-752	Yes
	TSW-1052	Yes
	TSW-760	Yes
	TSW-1060	Yes
	TS/TSW-770	Yes
	TS/TSW-1070	Yes
	Desktop XPanel	Yes
Drivers	Display/Projector	Yes
	Cable Box	Yes
	Blu-ray Disc Player	Yes
	Video Server	Yes
	Driver Portal Search/Import	Yes
Projector Screen	Relay Control	Yes
Volume Control	DSP	Yes
	Display/Projector	Yes
Displays	Number of Uniquely Routed Displays	1–4 (model dependent)
	Number of Mirrored Displays	7
	External Amplifier Support	Yes
Sources	Max Number of Sources	Model dependent
Crestron Fusion	Scheduling	Yes
	Monitoring/Reporting	Yes
Customization	Custom Logo Graphic	Yes
	Screensaver	Yes
	Start Button	Yes
	Custom Start Button Text	Yes
	Help Page Customization	Yes
Video Routing	Manual (from Touch Screen)	Yes
	Advanced Routing	Yes
	Default Route Selection	Yes
	Audio Breakaway	Yes
Authentication	Multiple Login	Yes

Feature Class	Feature	DMPS3
Other	Automatic Load and Update of Touch Screen Project	Yes
	Room Power Modes	Yes
	Cisco Touch 10® Custom Conferencing Application	Yes
	Google Meet™ Video Conferencing System	Yes
	Microsoft Teams® Software Application	Yes
	Zoom Rooms™ Software Controller Configuration	Yes

Setup

Use the following procedures to set up .AV Framework on the DMPS3 device.

Load the .AV Framework Program

The .AV Framework program is loaded to the Program 01 slot of the DMPS3 device by default.

> **NOTE:** Older versions of .AV Framework can still be run in other program slots, even after upgrading the control system firmware to a version that includes the .AV Framework 6.14 release. For more information, refer to Setup on page 7.

To update the .AV Framework program to the latest version, download the latest DMPS3 firmware package update file (PUF) from the DMPS3 device product pages or from the Crestron Resource Library at www.crestron.com/Support/Resource-Library. Then, load the PUF file to the device in Crestron Toolbox™ software or using the web configuration interface.

> **NOTE:** The DMPS3 device must be installed and accessible on the network prior to updating the device firmware. Use Crestron Toolbox to access firmware updates and to modify the Ethernet settings and the IP table of the DMPS3 device. For more information, refer to the Crestron Toolbox help file.

During a firmware update, the firmware checks to see whether the .AV Framework program has been loaded to the Program 01 slot.

- If an older version of the .AV Framework program is detected or if a user program is detected in the Program 01 slot, the program is updated automatically (for .AV Framework versions 4.x or above).
- If the .AV Framework program is loaded to a different program slot, the update is not applied.

Load the User Projects

The .AV Framework user project files can be downloaded as a zipped package from the DMPS3 device product pages or from the Crestron Resource Library at www.crestron.com/Support/Resource-Library. The zipped package contains the following files:

- The touch screen project (.vtz) files (AVF UI 1.0 and 2.0 Smart Graphics only)
- The DM-DGE-200-C project (.vtz) file (AVF UI 1.0 only)
- A Microsoft Teams custom conferencing project (.vtz) file for UC-ENGINE deployment
- A Crestron HTML5 User Interface project archive (.ch5z) for custom HTML5 projects (AVF UI 2.0 CH5 only)

- A Crestron Construct™ IDE project archive (.ch5z) for custom HTML5 projects (AVF UI 3.0 only)
- A configuration JSON file (.json) for Crestron ONE™ App functionality

NOTE: The .AV Framework program and project files must be used as a version-matched pair and cannot be edited or customized.

The touch screen project files can be loaded to a supported touch screen or to an XPanel as a custom project. The touch screen project provides a user interface for controlling the .AV Framework system.

NOTE: The Crestron HTML5 User Interface and Crestron Construct project archives are not compatible with TSW-52 series touch screens.

- For more information on loading the .vtz or .ch5z files to a supported touch screen, refer to the appropriate touch screen documentation at www.crestron.com/manuals.
- For more information on loading the .vtz file to the Desktop XPanel software, refer to XPanel on page 100.
- For more information on loading .ch5z files to generate an HTML Web XPanel interface, refer to Appendix H: Configure HTML Web XPanel for .AV Framework on page 147.

NOTE: If the AVF UI 1.0 will be used with the Desktop XPanel software, a CPZ file containing this support must be loaded directly into the "Program 01" slot of the DMPS3 device. For more information, refer to XPanel on page 100.

Additionally, the DM-DGE-200-C project file can be loaded to a DM-DGE-200-C device to control the .AV Framework user interface from a connected touch screen display. For more information on loading the .vtz file to the DM-DGE-200-C, refer to the DGE-100 and DM-DGE-200-C Product Manual.

Access the Configuration Utility

Configure settings for the .AV Framework system using the web-based configuration utility. The configuration utility is accessible from the Firefox®, Microsoft Edge®, and Safari® browsers.

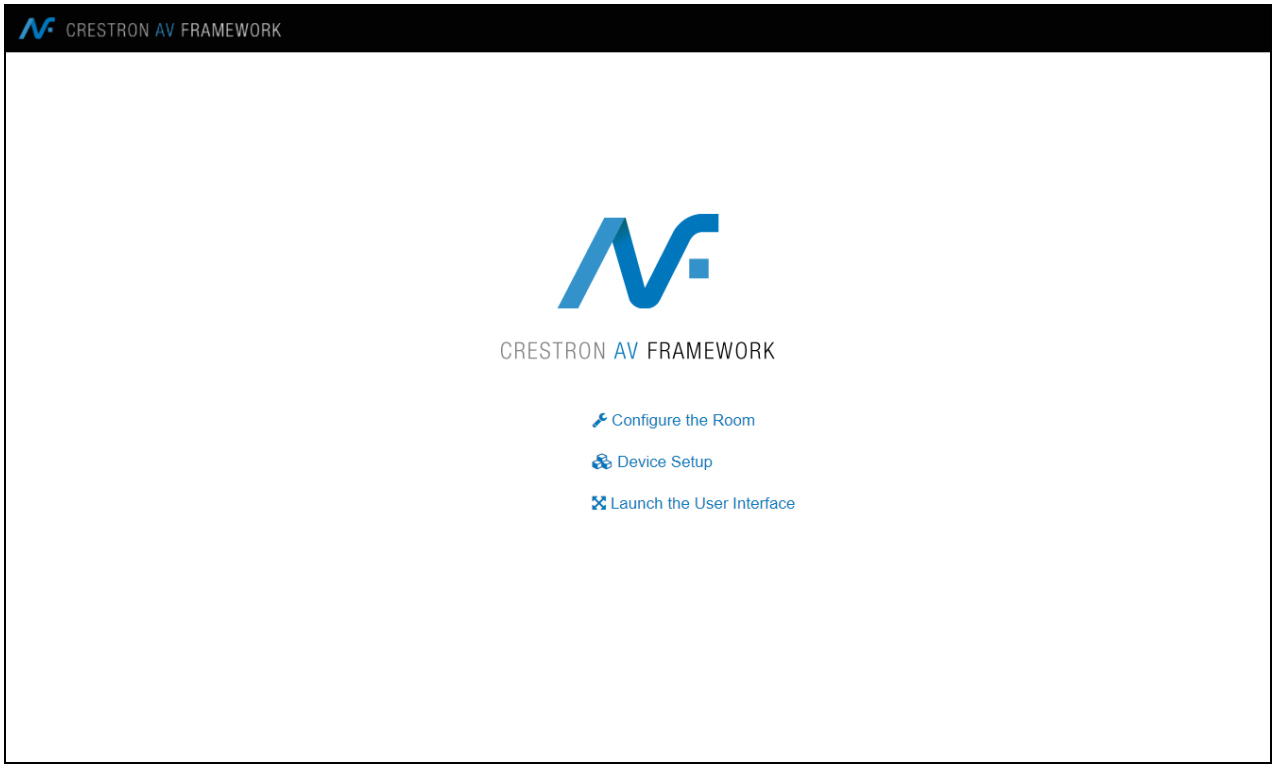
NOTE: As of .AV Framework version 6.12, the device admin credentials are required to log in to .AV Framework, and all user management is handled through the DMPS3. Port 8008 has been turned off and can no longer be used to access the .AV Framework system.

To access the configuration utility for the .AV Framework system:

NOTE: Prior to accessing the configuration utility, ensure that all devices in the .AV Framework system have been updated to their latest firmware versions.

1. Open a supported web browser.
2. Enter https://[hostname/ipaddress]/AVF/index.html in the browser URL field, where [hostname/ipaddress] is the host name or IP address of the DMPS3 device.

3. When prompted, enter the admin username and password for the device.
4. Select **Sign In**. Upon successful login, the .AV Framework splash page is displayed.

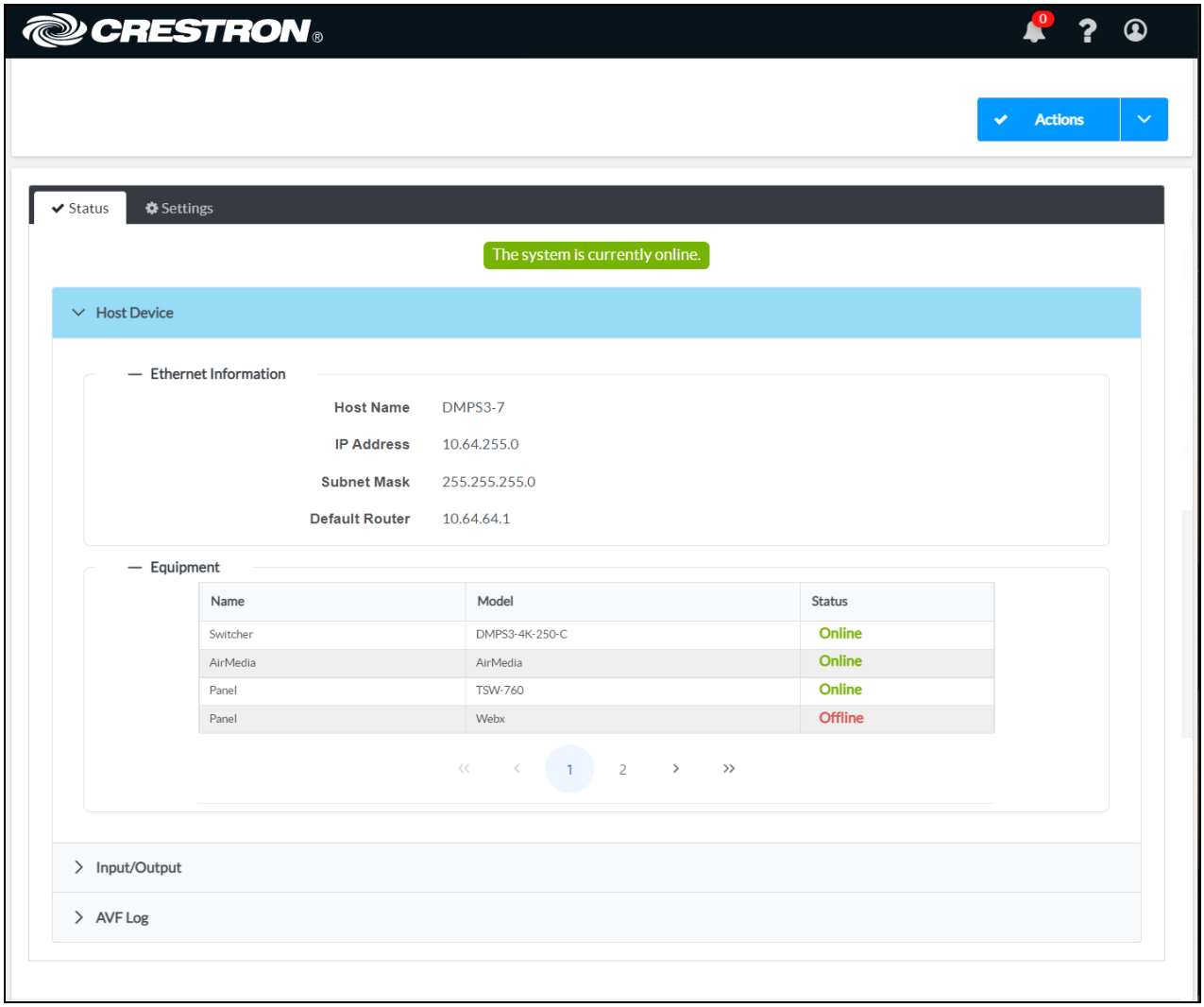


5. Select **Configure the Room**.

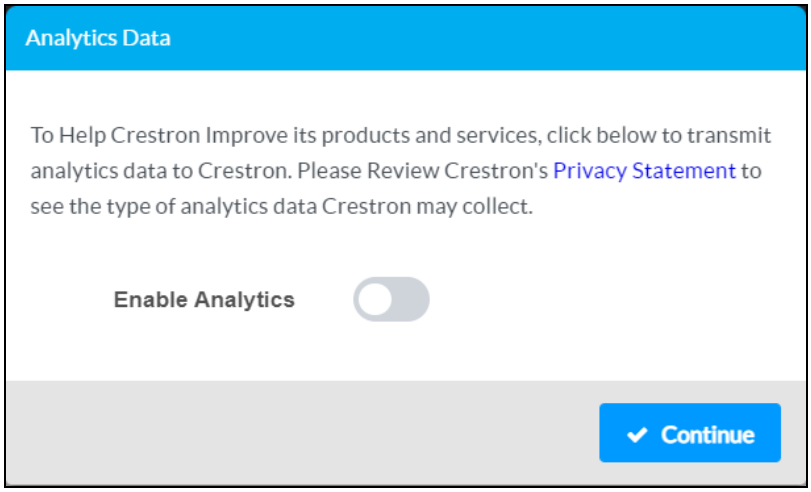
> **NOTE:** When upgrading .AV Framework to version 6.12 from an earlier version, the software checks whether the device firmware is above a minimum version that supports forced authentication. If the device firmware is below the minimum version, a message is displayed stating that the firmware must be upgraded before .AV Framework can be used. For more information, refer to Appendix G: Upgrade to .AV Framework 6.12 with Older Firmware on page 144.

The web configuration interface is displayed with the **Status** tab and **Host Device** accordion open by default.

Web Configuration Interface Home Page



As of .AV Framework version 6.24, an **Analytics Data** dialog box is displayed following the initial login to a new system or following an upgrade to this version for existing systems.



The **Analytics Data** dialog box asks whether analytics data from your .AV Framework system can be sent to Crestron to help improve the user experience. Turn on the **Enable Analytics** toggle to allow analytics data to be sent to Crestron, or turn the toggle off (the default setting) to opt out of sending analytics data. Then, select **Continue** to proceed to the configuration utility. This setting can be changed any time using the **Privacy Settings** tab within the **System Settings** page of the configuration utility. For more information, refer to Privacy Settings on page 48.

Add New Devices

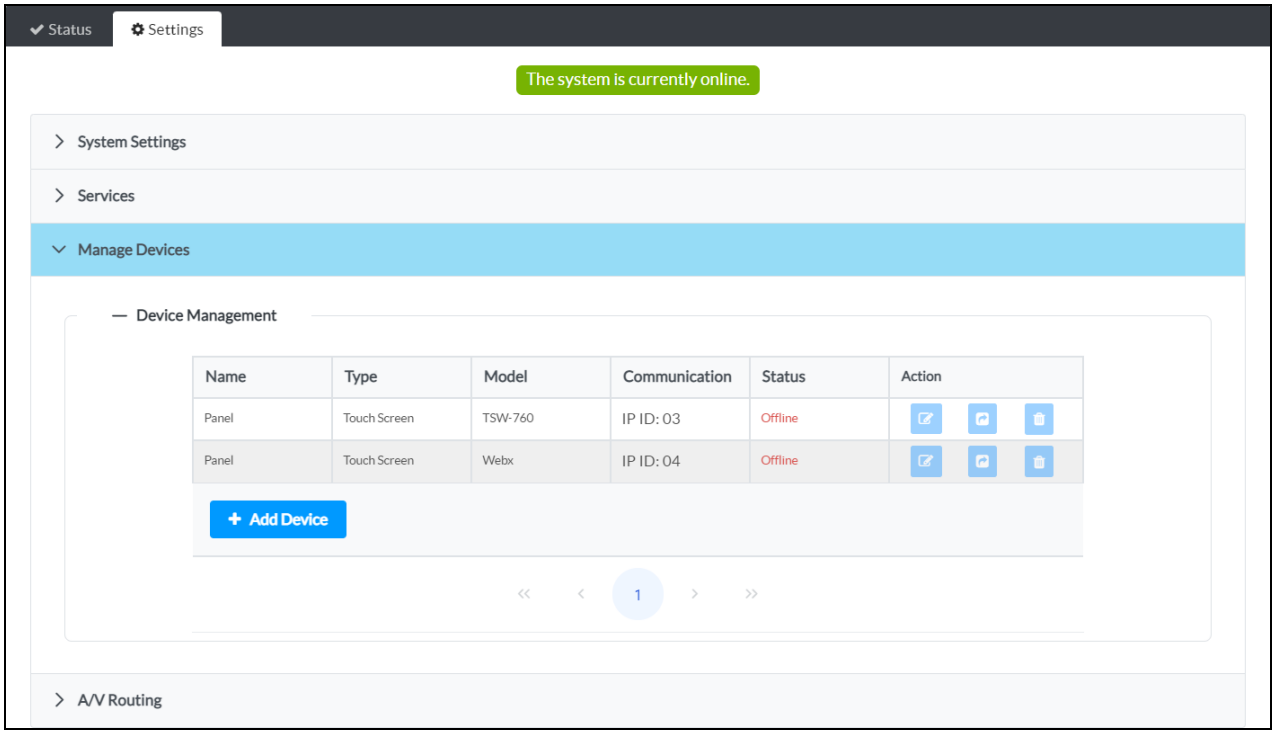
Devices can be added to the system via wired and wireless connections to the DMPS3 device. For more information, refer to Appendix A: Interface Setup on page 97.

> **NOTE:** All devices must be connected to the DMPS3 device or accessible on the network prior to adding them to the .

To add devices to the .AV Framework system:

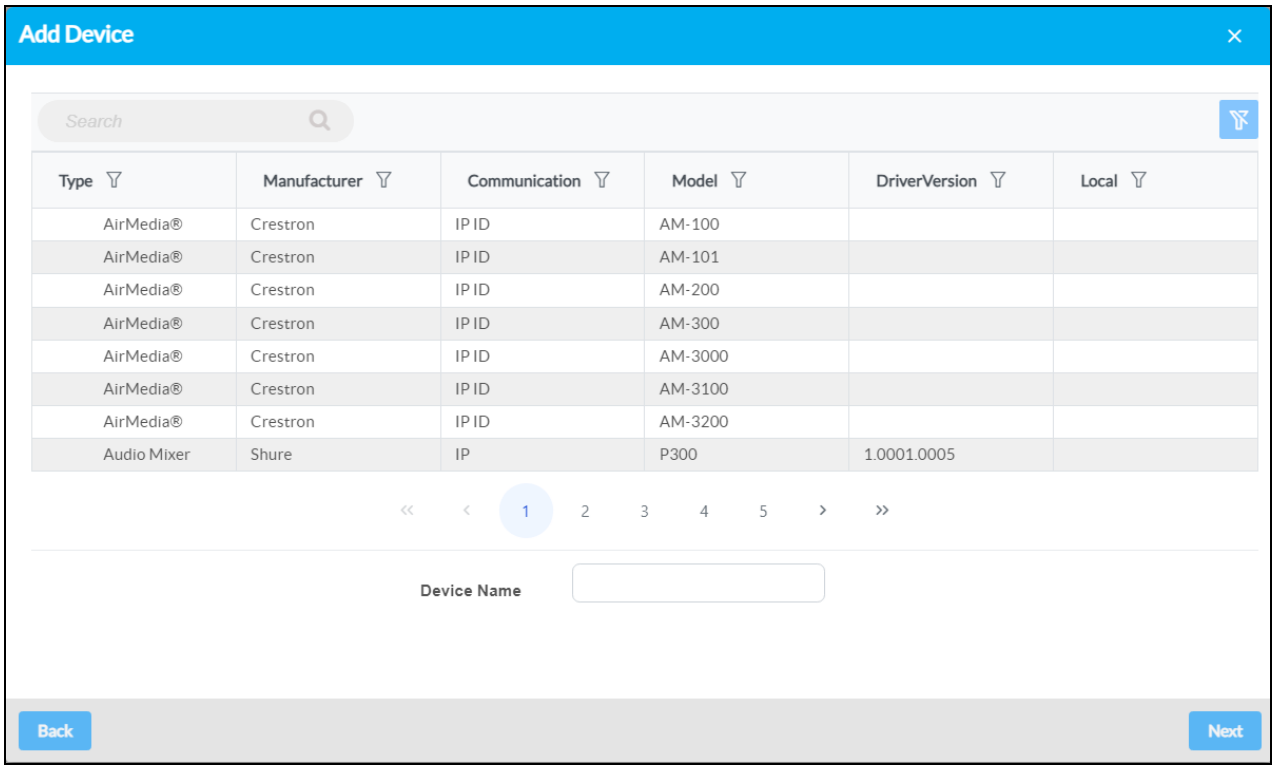
1. Select the **Settings** tab in the web configuration interface.
2. Expand the **Manage Devices** accordion to display settings for managing devices within the .AV Framework system.

Device Management Page



3. Select **+ Add Device**. The **Add Device** dialog box is displayed.

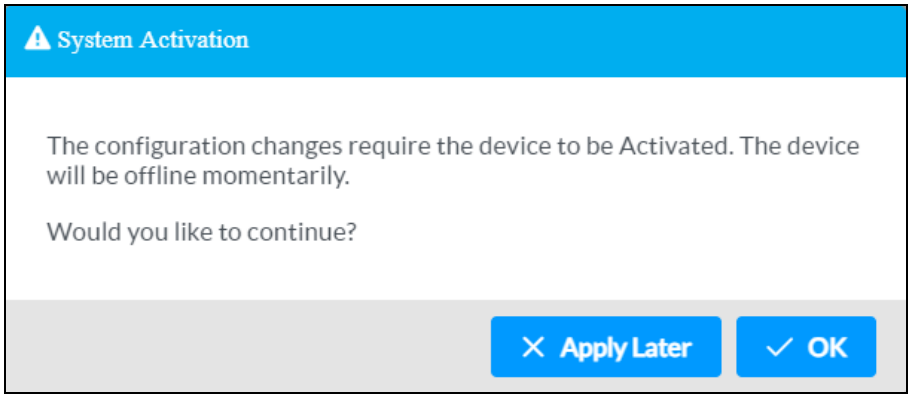
Add Device Dialog Box



4. Navigate to and select the desired device model in the provided table. For more information on adding devices, refer to Manage Devices on page 54.
    - Use the **Search** field to only display devices matching the provided search term(s).
    - Use the controls at the bottom of the table to navigate through the available models.
    - Use the filter controls in each table header to filter the table data. Select the filter clear button to clear any filter data that is retained.
5. Enter a descriptive name for the device in the **Device Name** text field.
6. Select **Next**. Additional information and settings (if applicable) for the device are displayed.

> **NOTE:** If a third-party device was selected, its driver is imported from the cloud and installed into the .AV Framework system automatically.

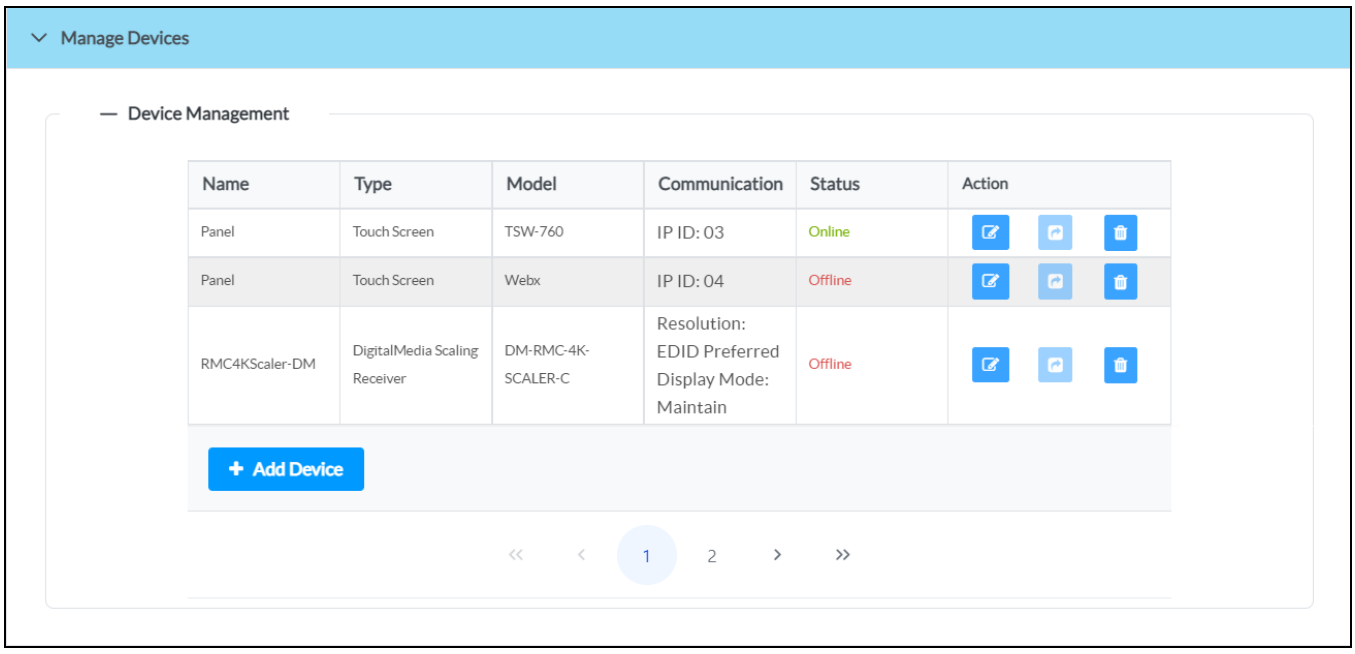
7. Enter any additional settings for the device in the appropriate fields (if required), including the transport control details. For more information, refer to Manage Devices on page 54.
8. Select **Save**. If required by the device, a **System Activation** dialog box is displayed asking whether the should be activated.



9. Select **OK**. The goes offline to begin the activation process.

The device is added to the list of devices on the **Manage Devices** accordion.

Device Management Page (Device Added)

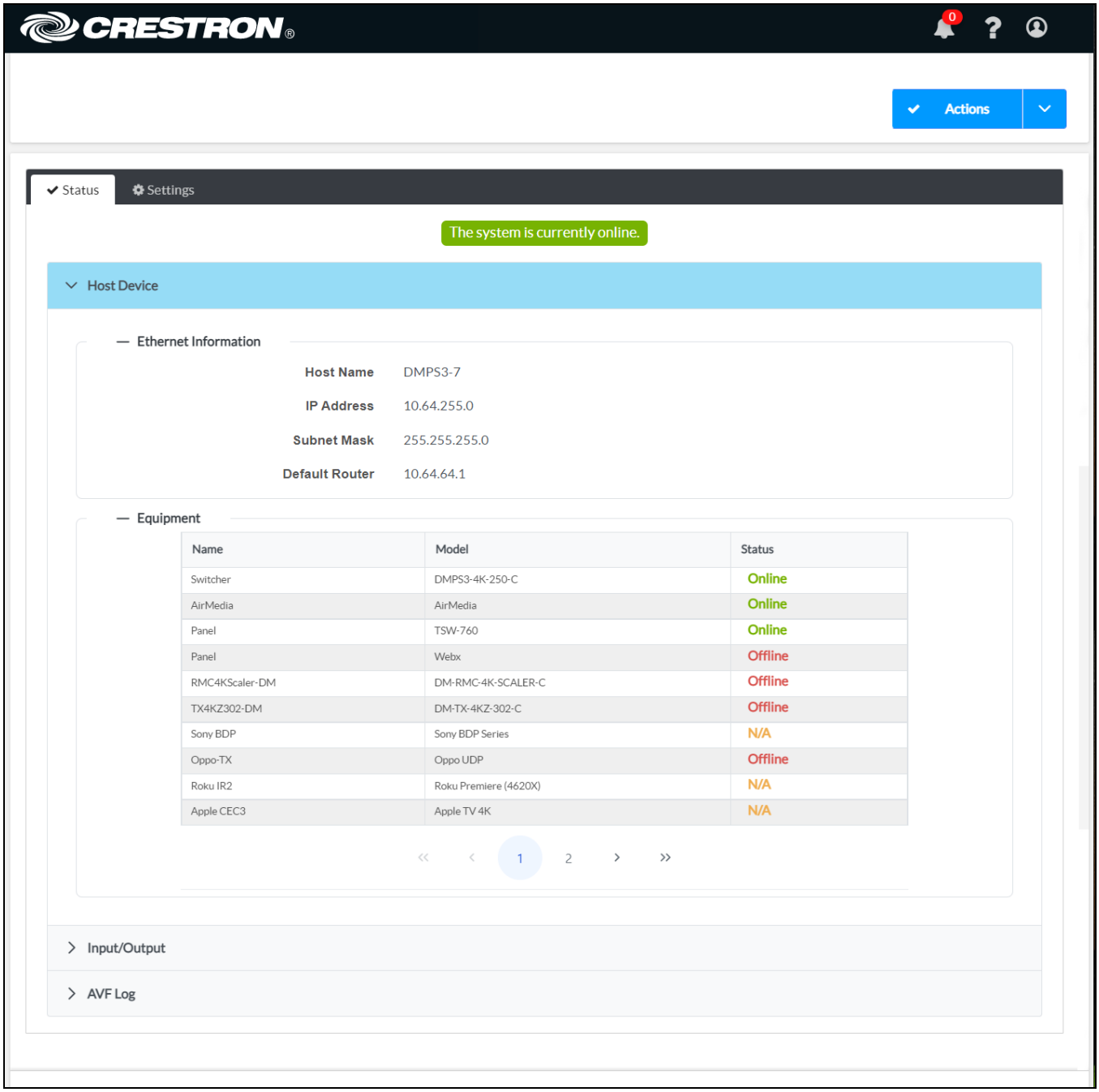


Configuration

The .AV Framework system can be monitored and configured using its web configuration interface. Use the web configuration interface to configure system settings, to add devices to the .AV Framework system, to configure the inputs and outputs of the DMPS3 device, and to manage saved configurations. The web configuration interface also provides pages that display the system status and an activity log.

The interface can be accessed via the DMPS3 IP address as described in Access the Configuration Utility on page 8.

Web Configuration Interface



The web configuration interface provides the following tabs and menus for navigating the interface.

- **Status**: Select this tab to monitor the status of the .AV Framework system and its connected devices. For more information, refer to Status on page 27.
- **Settings**: Select this tab to configure .AV Framework system settings, including managing devices and configuring inputs/outputs. For more information, refer to Settings on page 33.

- **Actions**: Use this drop-down menu to download or upload a system configuration, manage device drivers, and activate an unsaved configuration. For more information, refer to Actions Menu on page 19.

The **Status** tab is shown by default with the **Host Device** accordion open.

> **NOTE:** As of .AV Framework version 6.12, user management settings have been depreciated. User management is handled through the device, and any users created within .AV Framework are removed from the system after upgrading to the latest release. For more information on configuring users on the device, refer to the 3-Series Control System Reference Guide.

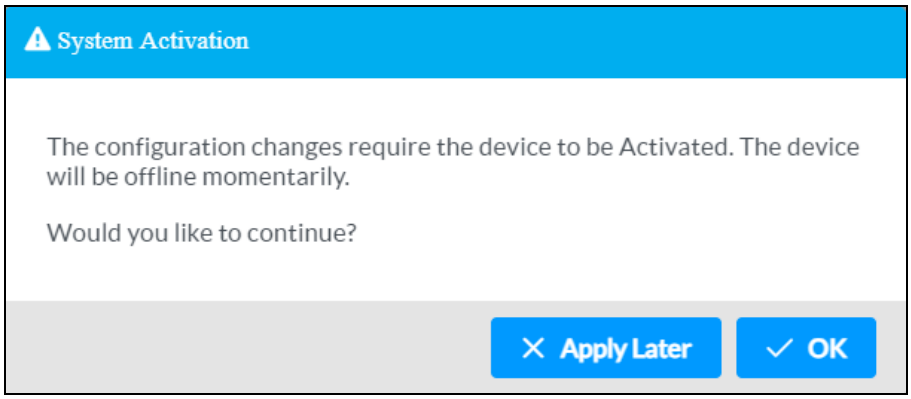
The following informational controls are also provided on the top right of the web configuration interface:

- Select the help button to access this documentation from within the web configuration utility.
- Select the alerts button to view any active alerts for the .AV Framework system. For more information, refer to Alerts on page 18.
- Select the profile button to display controls for signing out of the web configuration utility.

Activate the System

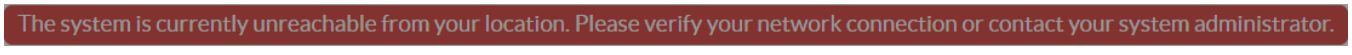
After any changes have been made to the .AV Framework system that require the system to go offline, a **System Activation** dialog box is displayed. The **Actions** menu button also changes to an **Activate** button as described in Actions Menu on page 19.

System Activation Dialog Box



Select **OK** to activate the system or **Apply Later** to activate the system after the current session has ended. Once the system begins activation, the green status bar on the top of the page turns red and shows a system offline message. The system cannot be used while it is activating.

System Offline Message

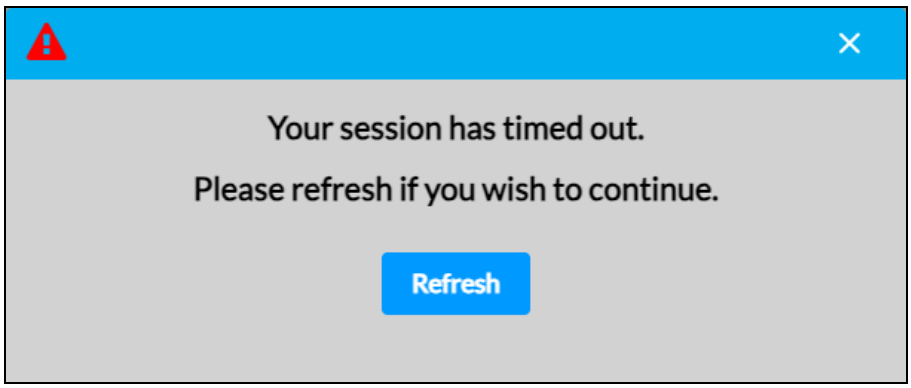


Once the system activation completes, the red status bar turns green and shows a system online message. The system can now be used normally.

System Online Message

If the session times out during an activation, a session timeout message is displayed.

Session Timeout Message

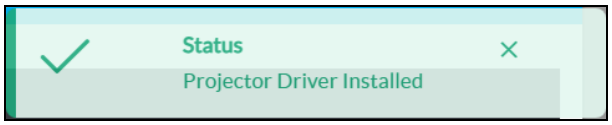


Select **Refresh** to refresh the browser and start a new session.

Alerts

As of .AV Framework version 6.19, certain pop-up notifications are being replaced by toast notifications that are displayed at the top right of the page.

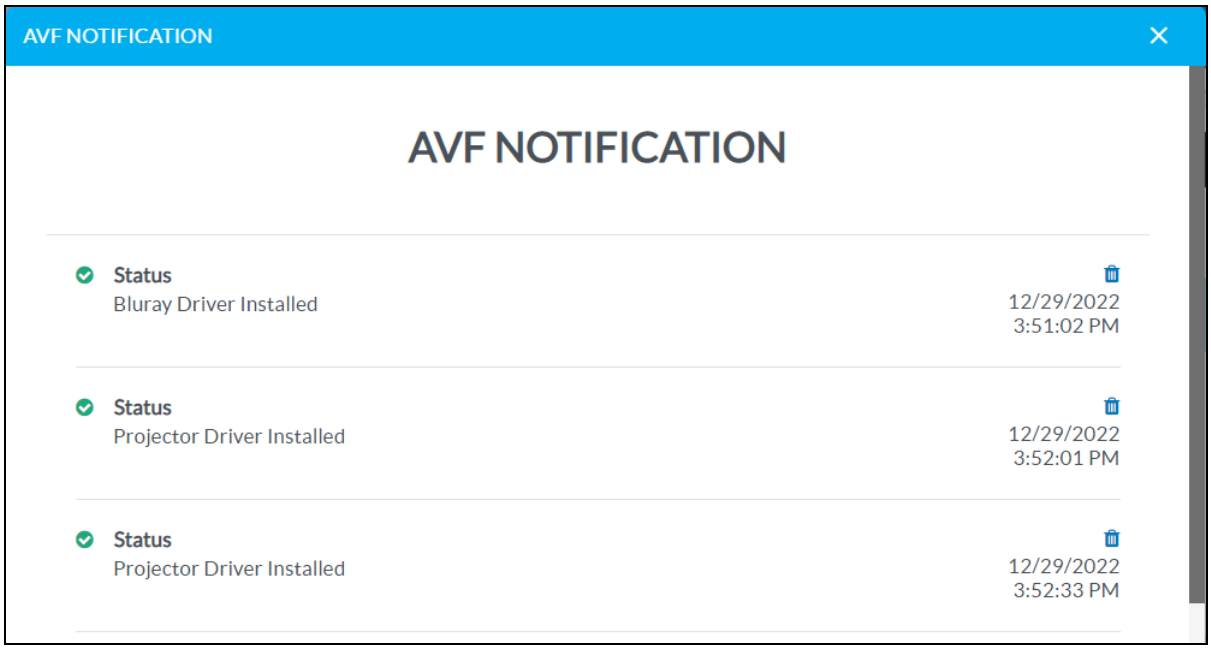
Toast Notification in .AV Framework Web Configuration UI



After a toast notification disappears, its associated alert is retained in an alert log, and the number within the alerts button updates to show how many alerts are currently logged.

Select the alerts button to view all active alerts for the .AV Framework system. The **AVF Notification** dialog box is displayed.

AVF Notification Dialog Box



Alerts are ordered by time and date, starting with the most recent alert. Each alert provides a title, a brief description, and the date and time that the alert occurred.

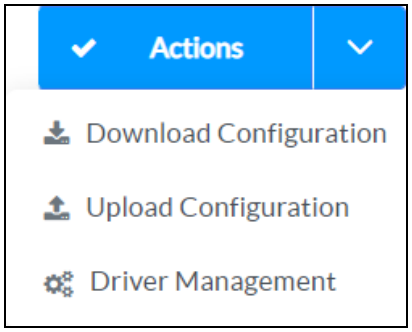
To clear an alert, select the trash can button to the right of the alert. Once an alert is cleared, it no longer is displayed in the **AVF Notification** dialog box, and the number within the alert button updates accordingly.

Select the **x** button to close the **AVF Notification** dialog box.

Actions Menu

The configuration interface provides an **Actions** drop-down menu on the top right of the page. The **Actions** menu may be accessed at any time.

Actions Menu

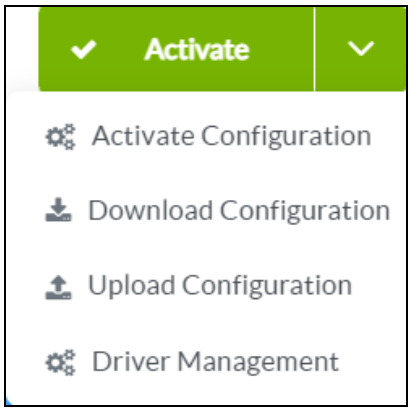


After any changes have been made that require a setting to be saved, the **Actions** button changes to a **Save Changes** button. Select **Save Changes** to save the setting without placing the .AV Framework system offline.

Actions Menu - Save Changes Button

After any changes have been made to the .AV Framework system that require the system to go offline, the **Actions** button changes to an **Activate** button. Select **Activate** (or select **Activate Configuration** from the drop-down menu) to activate any saved changes and place the .AV Framework system offline.

Actions Menu - Activate Button



The **Actions** menu provides the following selections.

Activate Configuration

If changes have been made to the .AV Framework system that require the system to go offline, select **Activate Configuration** to activate the system.

Download Configuration

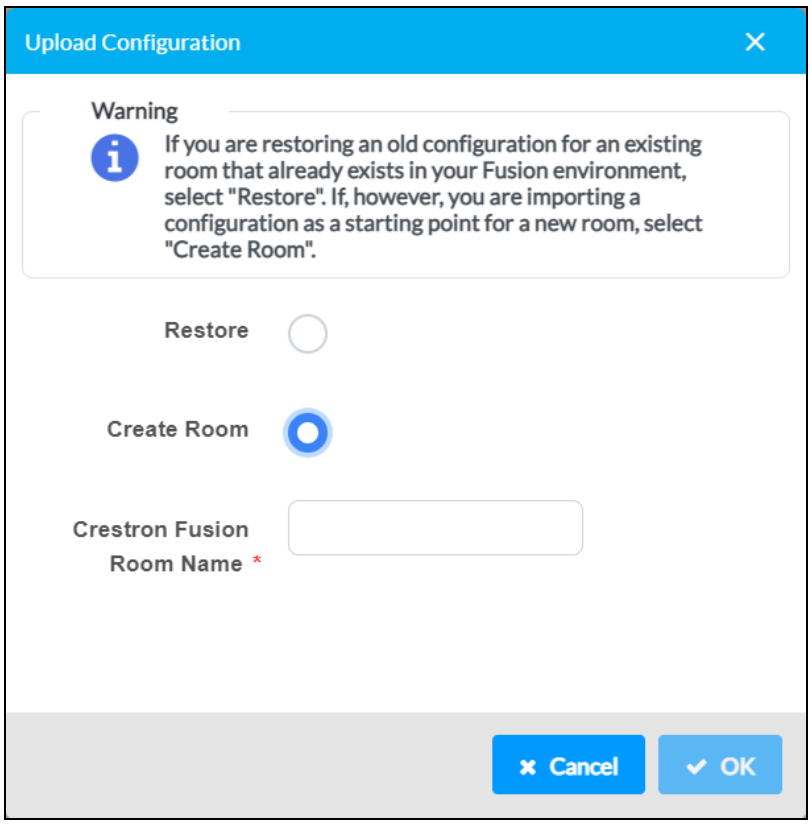
Select **Download Configuration** to download the current configuration settings as a .zip file. The downloaded .zip file includes XML files that contain the current configuration settings and any device driver files that are loaded in .AV Framework.

Upload Configuration

Select **Upload Configuration** to upload saved configuration files to the configuration utility. Saved configuration files can be used to configure similar rooms by uploading the configuration files to the corresponding .AV Framework systems.

An **Upload Configuration** dialog box is displayed.

Upload Configuration Dialog Box



The **Upload Configuration** dialog box provides options for modifying the Crestron Fusion room information that is paired with the configuration:

- Select the **Restore** radio button to restore the Crestron Fusion room settings that exist in the configuration files.
- Select the **Create Room** radio button to create a new Crestron Fusion room using the imported configuration settings. Enter the room name in the **Crestron Fusion Room Name** text field that is displayed.

Select **OK** to import the configuration files with the selected Crestron Fusion room settings or select **Cancel** to cancel the import. Select the **x** button to close the **Upload Configuration** dialog box.

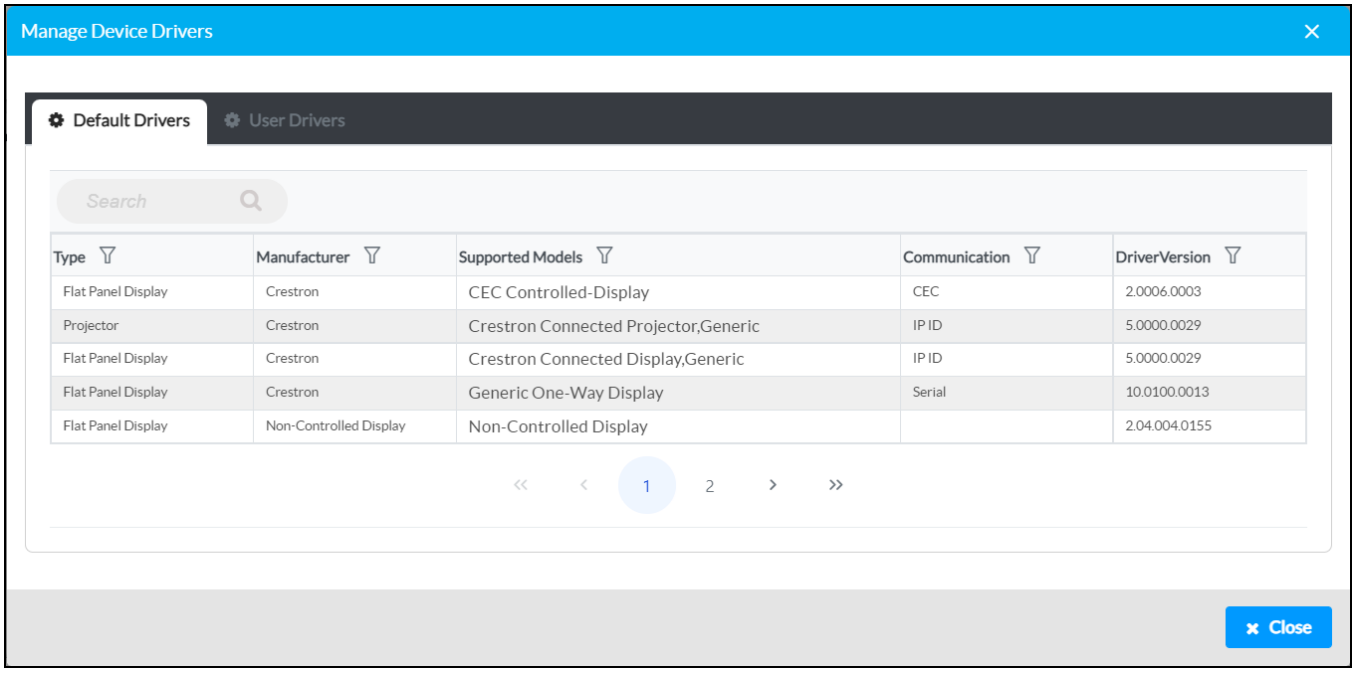
Driver Management

Select **Driver Management** to manage existing device drivers and to add new device drivers manually to .AV Framework.

> **NOTE:** As of .AV Framework version 6.31, user drivers are imported from the cloud and installed automatically when the corresponding device model is selected while adding a new device. User drivers can still be loaded manually into .AV Framework from the **Manage Device Drivers** dialog box.

A **Manage Device Drivers** dialog box is displayed.

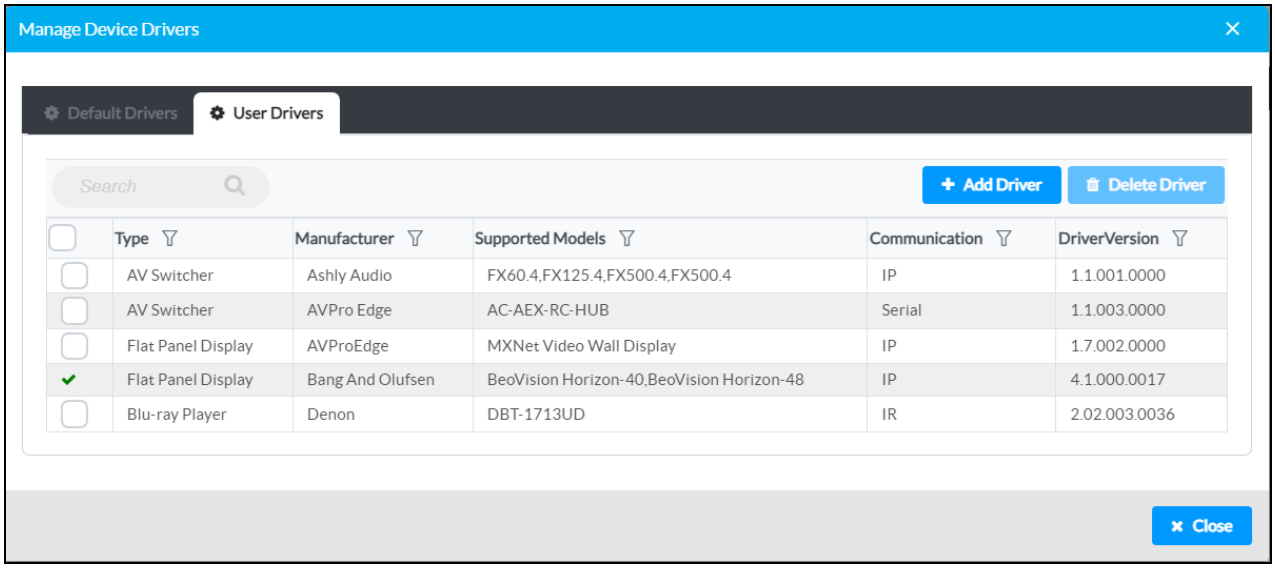
Manage Device Drivers Dialog Box



Use the **Manage Device Drivers** dialog box to manage existing device drivers and to add new device drivers manually to .AV Framework. The **Manage Device Drivers** dialog box is divided into two sections that can be accessed by selecting the appropriate tab at the top of the dialog.

- **Default Drivers**: Contains all generic drivers that are included and turned on within the .AV Framework system by default. These drivers cannot be deleted from the .AV Framework system. Refer to the previous image.
- **User Drivers**: Contains all custom drivers that are downloaded and installed by the user. These drivers can be deleted from the .AV Framework system if they are not actively being used in a system configuration. Refer to the following image.

Manage Device Drivers Dialog Box - User Drivers Tab



Each installed driver is displayed in a table with the following information. If the table spans more than one page, use the navigational controls at the bottom of the section to move between pages. A **Search** field is also provided to display drivers that match a specific search term, and each table column can be filtered using the controls in the column header.

- **Type**: The device type (such as flat panel display or projector)
- **Manufacturer**: The device manufacturer
- **Supported Models**: The model series supported by the driver
- **Communication**: The communication method used by the device (such as IR, CEC, or serial)
- **Driver Version**: The installed driver version

Select **Close** or the **x** button to close the **Manage Device Drivers** dialog box.

The following additional settings are provided for user drivers.

Add a New Driver Manually

Additional device drivers can be downloaded from the Crestron Drivers web portal and loaded into .AV Framework to expand the number of compatible third-party devices. New device drivers are added to the Crestron Drivers web portal after they are tested and approved by Crestron.

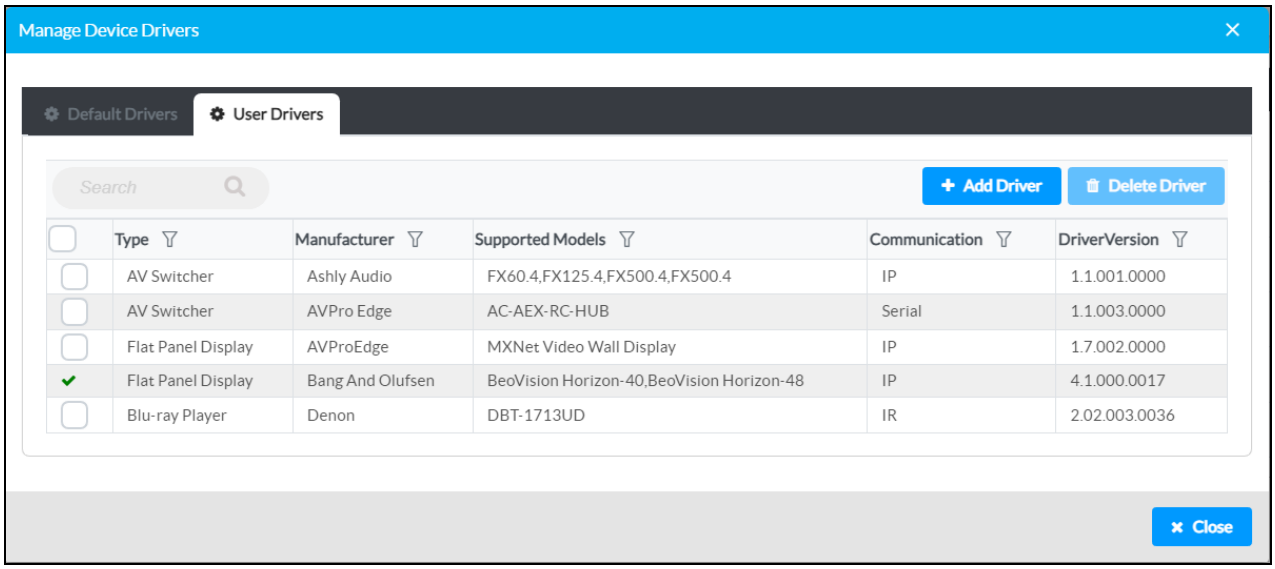
> **NOTE:** New users to the Crestron Drivers web portal must create an account in order to search for and download device drivers.

Custom device drivers can also be created and loaded into .AV Framework. For more information and detailed developer instructions, refer to the Crestron Drivers SDK website at https://developer.crestron.com.

To load a new driver to the .AV Framework system manually:

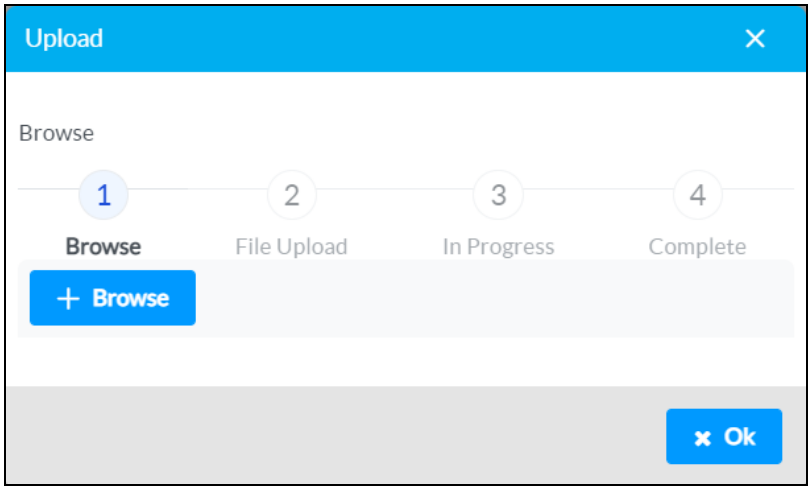
1. Select the **User Drivers** tab to display the User Driver settings.

   Manage Device Drivers Dialog Box - User Drivers Tab



2. Select **Add Driver**. An **Upload** dialog box is displayed.

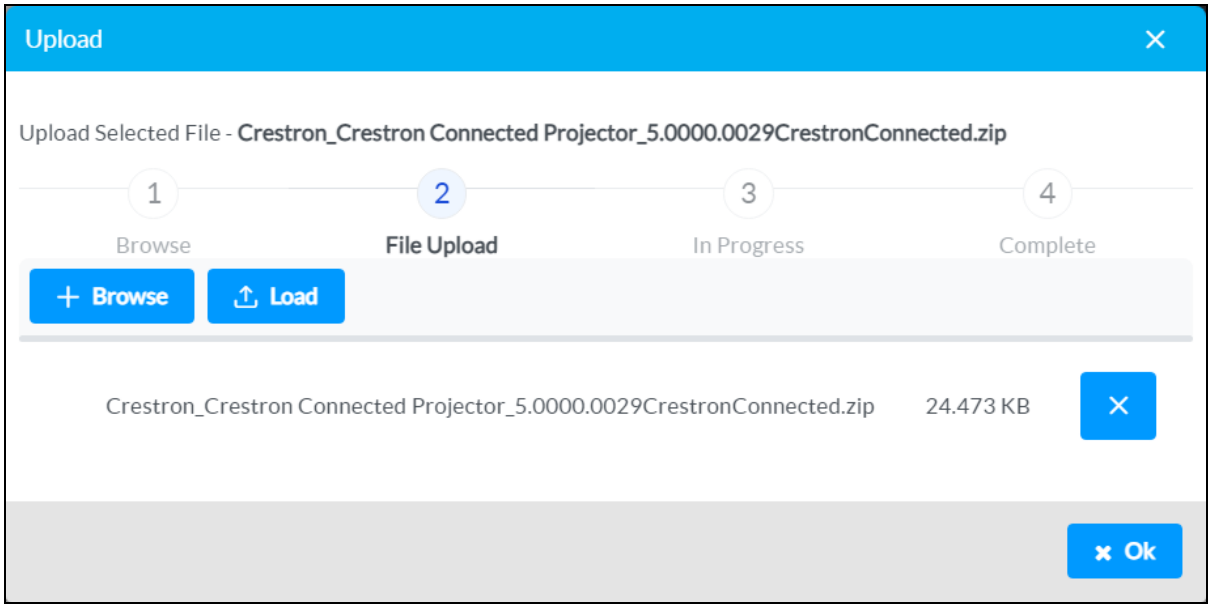
   Upload Dialog Box - Browser



3. Select **+ Browse**, and then navigate to the .zip file containing the driver .pkg files on the computer.

4. Select the driver .zip file, and then select **Open**. The driver information is shown in the **Upload** dialog box.

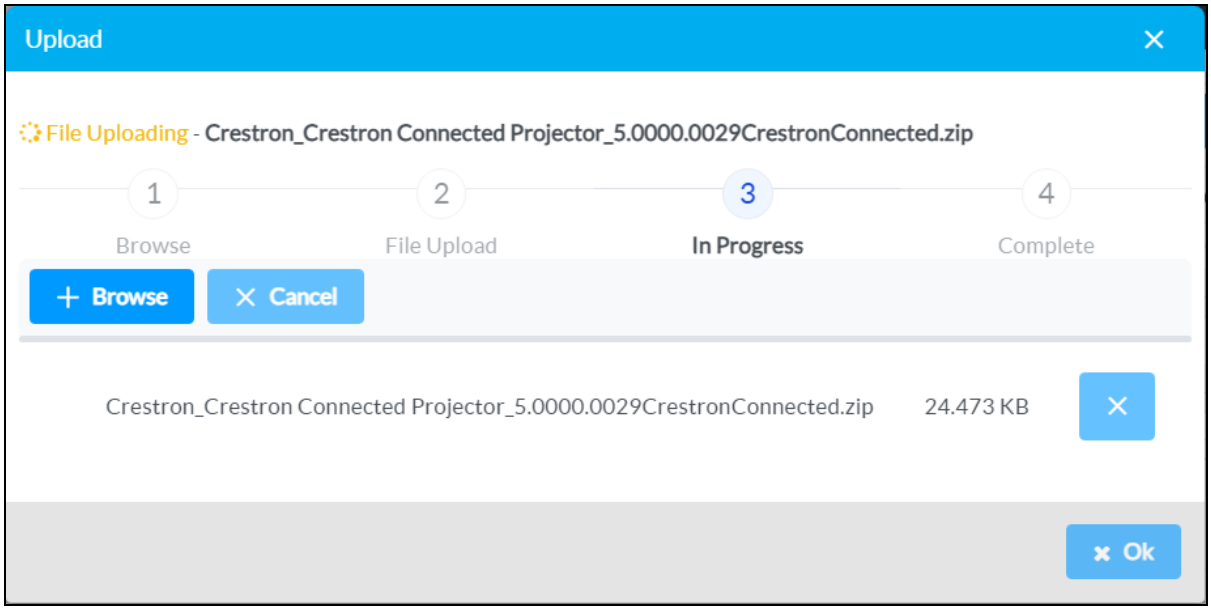
Upload Dialog Box - File Upload



5. Select **Load** to load the driver .zip file to .AV Framework. The upload progress is shown in the dialog box.

> **NOTE:** The installation can take several minutes if multiple drivers are uploaded at once.

Upload Dialog Box - File Upload



6. Once the driver has been loaded, select **Ok**. A toast notification is displayed once the driver has been installed successfully, and the new driver will appear as an entry within the **User Drivers** table.

NOTE: If the driver installation fails, ensure that the correct file was selected and that the DMPS3 device is functioning properly. If the driver installation continues to fail, contact Crestron True Blue support via phone, email, or chat as described at www.crestron.com/Support.

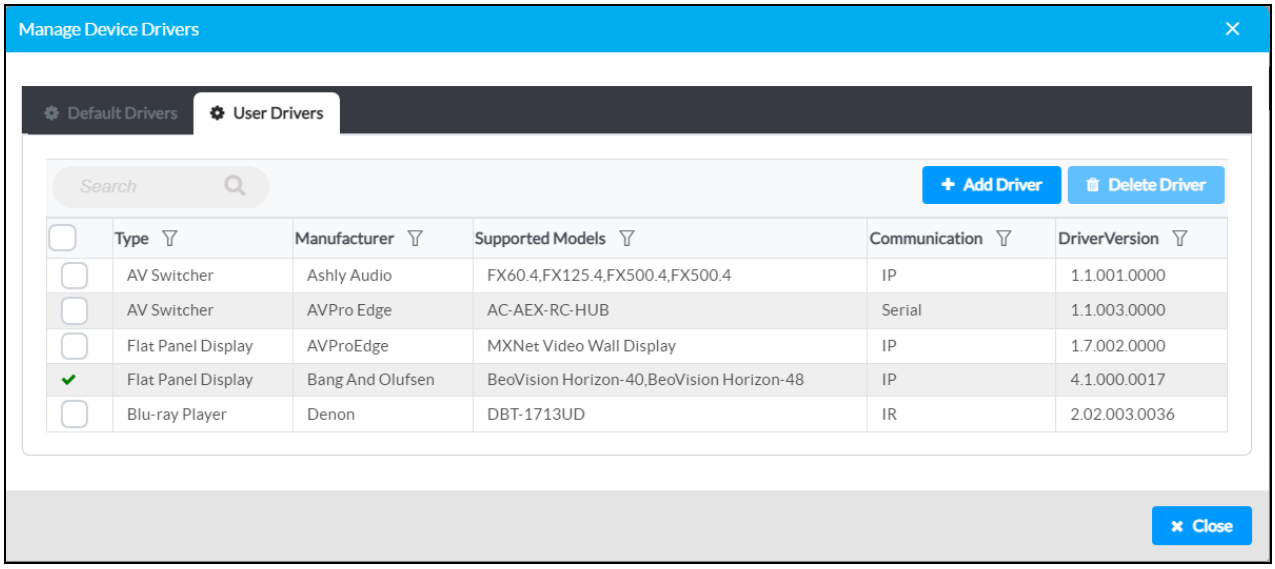
Delete a Driver

To delete a user driver from .AV Framework:

NOTE: A user driver can be deleted only if it is not actively being used with the .AV Framework system. The driver must be deactivated within the .AV Framework system before it can be deleted. An active driver shows a green check icon in the left side of its table row.

1. Select the **User Drivers** tab to display the User Driver settings.

Manage Device Drivers Dialog Box - User Drivers Tab



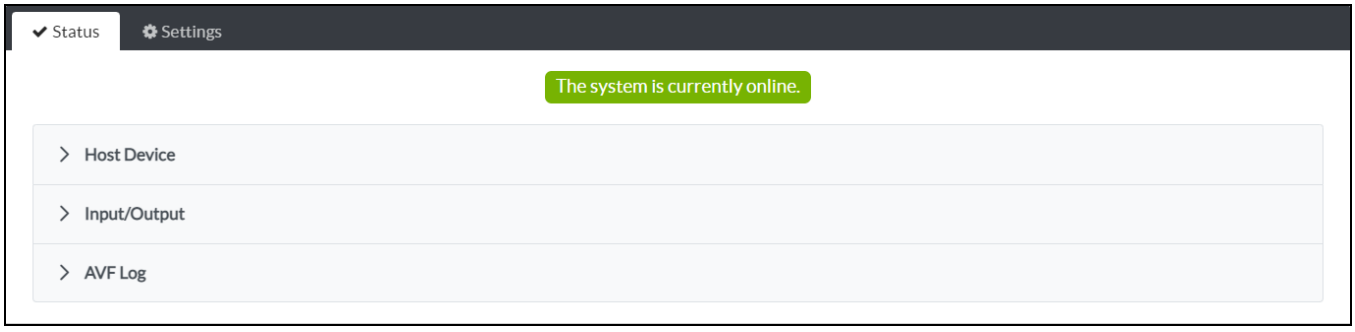
2. Fill the check box to the left of each table row of the driver(s) that will be deleted.
3. Select **Delete Driver**. The driver(s) are deleted from the User Drivers settings without a confirmation prompt.

Status

Select the **Status** tab on the top left of the interface to display accordions for viewing the status of the DMPS3 device, the input and output channels of the DMPS3 device, and the system log files.

Select an accordion name to expand that accordion. If the accordion is expanded, select the accordion name again to collapse the accordion.

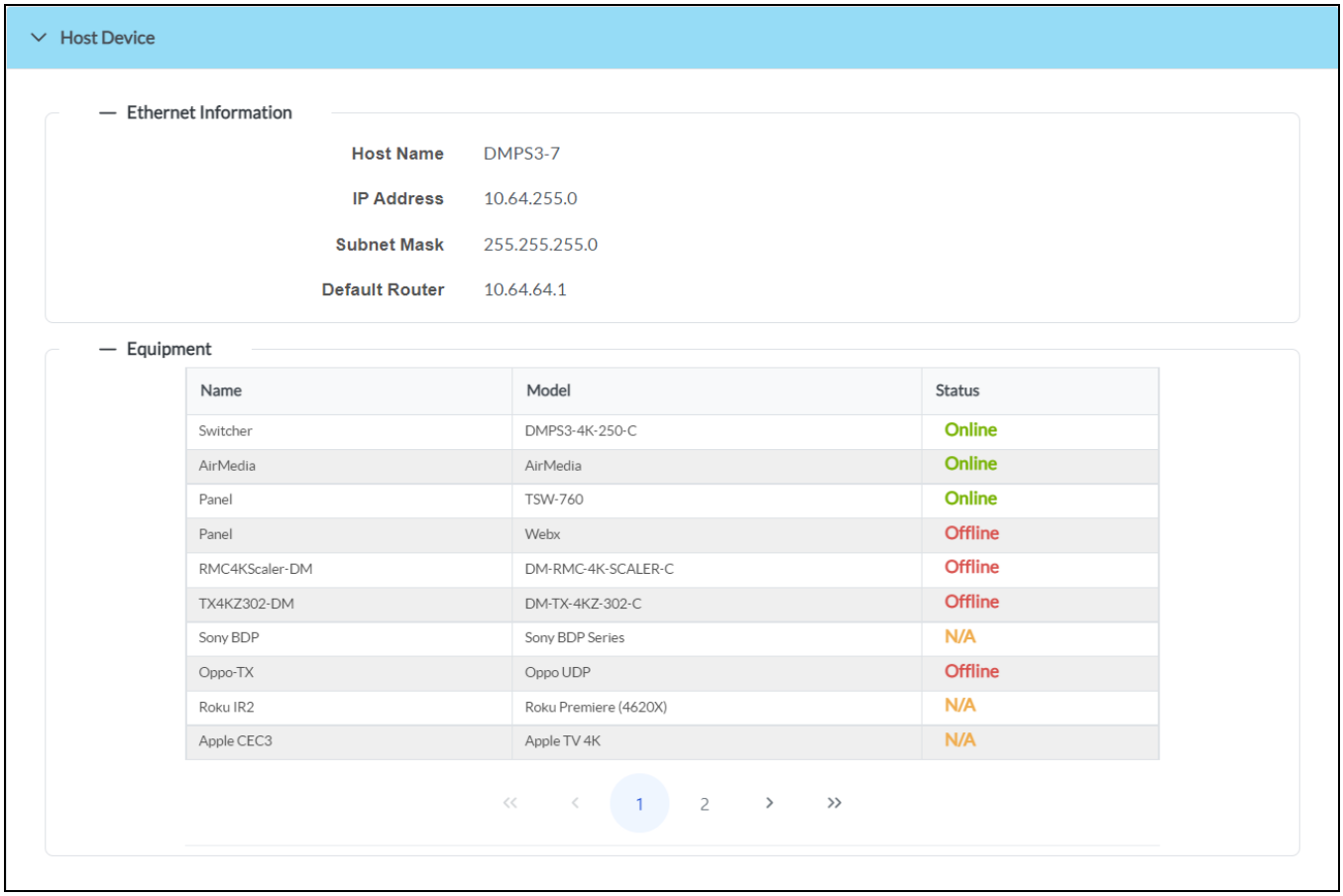
Status Tab Selections



Host Device

Select the **Host Device** accordion to view general information about the host DMPS3 device and devices connected to the .AV Framework system.

Host Device Accordion

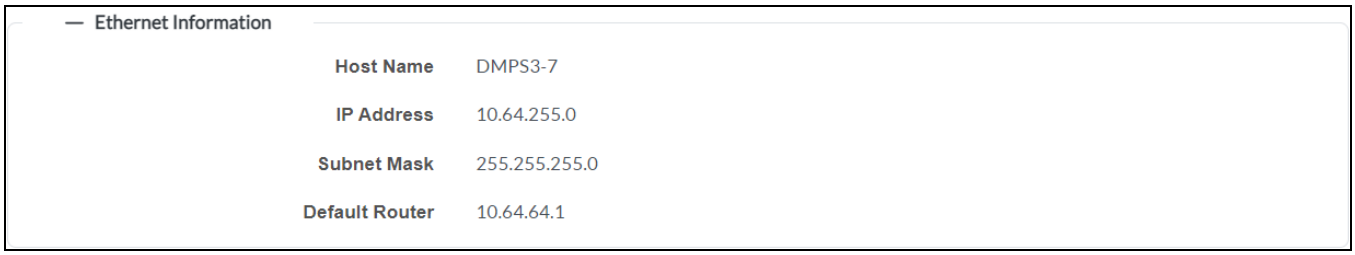


The following **Host Device** information is displayed.

Ethernet Information

Select the **+** (plus) icon next to **Ethernet Information** (if the section is not already expanded) to display the following Ethernet information for the host DMPS3 device.

Host Device Accordion - Ethernet Information

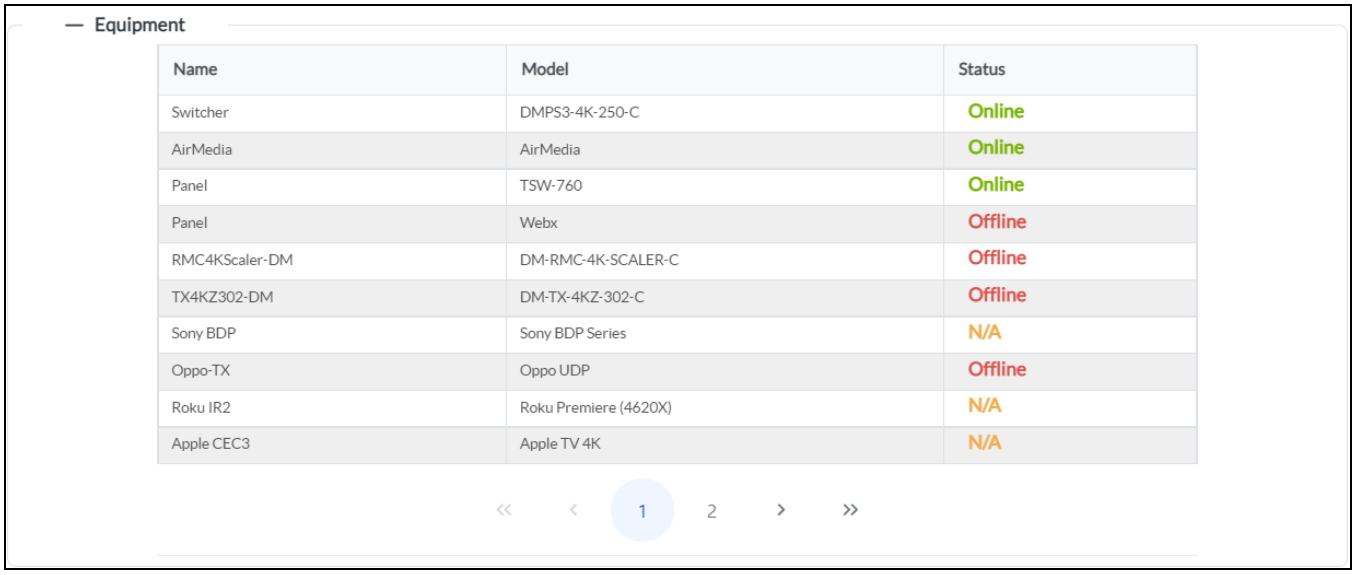


- **Host Name**: The DMPS3 device host name.
- **IP Address**: The DMPS3 device IP address.
- **Subnet Mask**: The DMPS3 device subnet mask address.
- **Default Router**: The DMPS3 device gateway router address.

Equipment

Select the **+** (plus) icon next to **Equipment** (if the section is not already expanded) to display information for devices connected to the .AV Framework system, including the DMPS3 device.

Host Device Accordion - Equipment



Each connected device is displayed in a table with the following information. If the table spans more than one page, use the navigational controls at the bottom of the section to move between pages.

- **Name**: The user-defined device name.
- **IP Address**: The device model.
- **Status**: The connection status of the device:
  - **Online**: The device is detected and is providing feedback to .AV Framework.
  - **Offline**: The device was detected at one point, but it is no longer detected by .AV Framework.
  - **N/A**: The device status is not reported (shown for CEC-controlled displays, non-controlled displays, IR-controlled devices, and for devices connected to the DMPS3 device through the **AUX1**, **AUX2**, and **SPEAKER** ports).

For more information on connecting devices to .AV Framework, refer to Add New Devices on page 11.

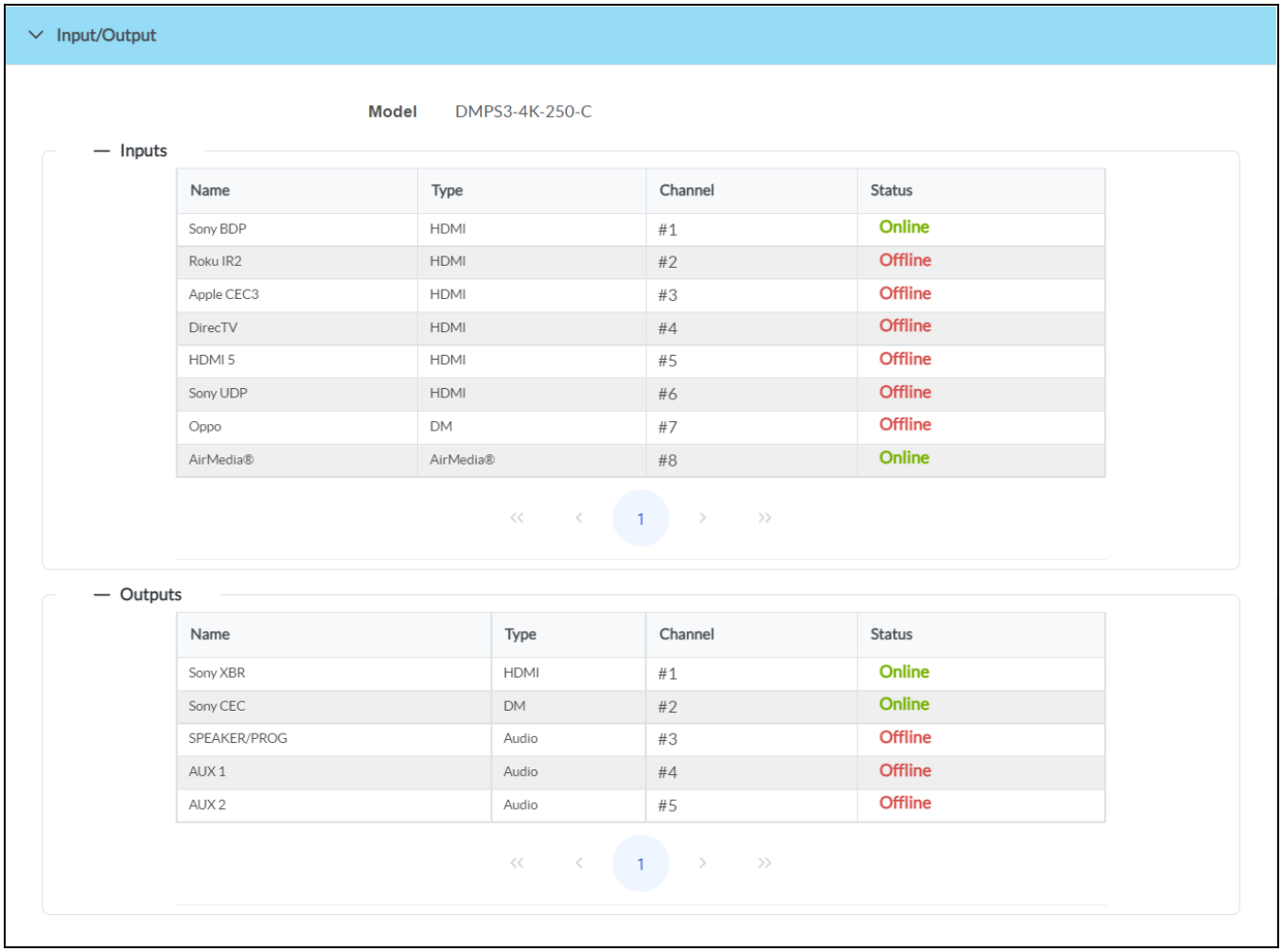
NOTE: Observe the following points regarding connected devices:

- A TSW-760 touch screen and an XPanel virtual touch screen are added to new .AV Framework systems by default. These devices can be deleted if needed.
- The XPanel virtual touch screen can be used to test the touch screen project through the Desktop XPanel interface. For more information, refer to XPanel on page 100.
- Additional devices are added by default to new .AV Framework configurations for certain DMPS3 devices.

Input/Output

Select the **Input/Output** accordion to view information about the input and output channels on the DMPS3 device.

Input/Output Accordion



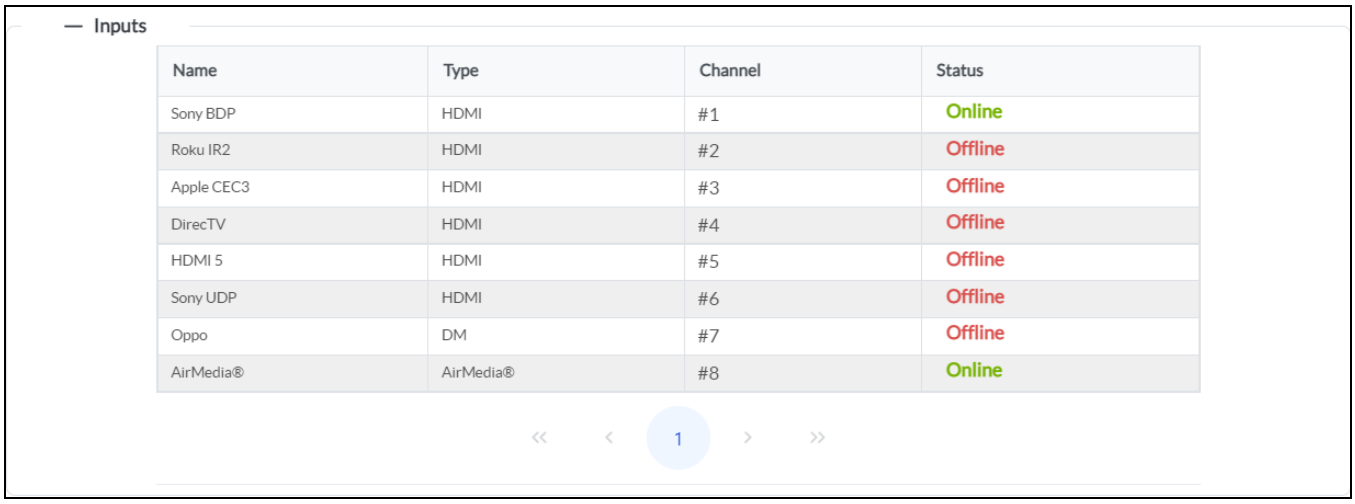
For more information on configuring input and output channels of the DMPS3 device, refer to A/V Routing on page 64.

The following **Input/Output** information is displayed.

Inputs

Select the **+** (plus) icon next to **Inputs** (if the section is not already expanded) to display the following information for the DMPS3 device input channels.

Input/Output Accordion - Inputs



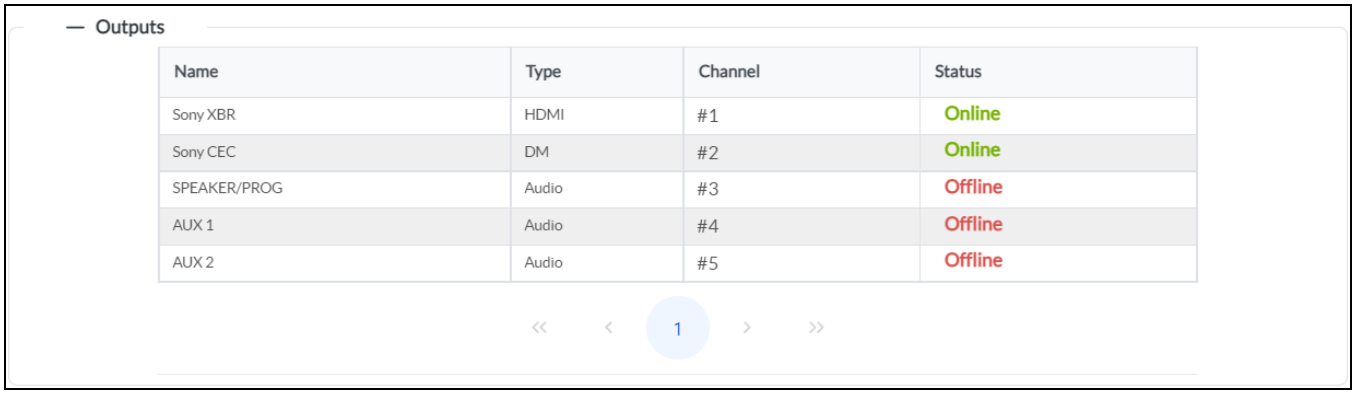
Each input channel is displayed in a table with the following information. If the table spans more than one page, use the navigational controls at the bottom of the section to move between pages.

- **Name**: The user-defined input channel name.
- **IP Address**: The input channel type.
- **Channel**: The input channel number.
- **Status**: The connection status of the input channel:
  - **Online**: The connected source is sending content.
  - **Offline**: The connected source is not sending content, is not present, or is not reported.

Outputs

Select the **+** (plus) icon next to **Outputs** (if the section is not already expanded) to display the following information for the DMPS3 device output channels.

Input/Output Accordion - Outputs



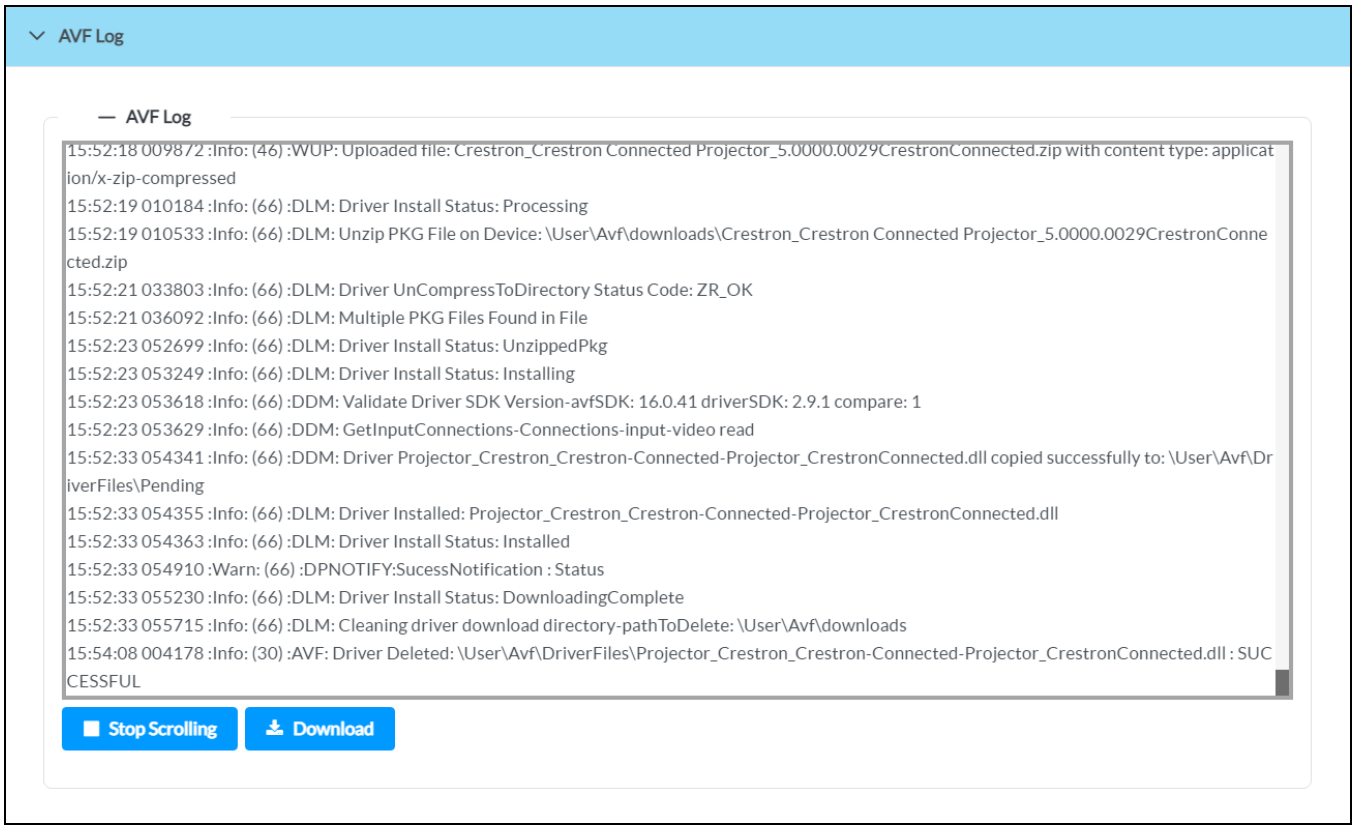
Each output channel is displayed in a table with the following information. If the table spans more than one page, use the navigational controls at the bottom of the section to move between pages.

- **Name**: The user-defined output channel name.
- **IP Address**: The output channel type.
- **Channel**: The output channel number.
- **Status**: The connection status of the output channel:
  - **Online**: The connected sync is receiving content.
  - **Offline**: The connected sync is not receiving content, is not present, or is not reported.

AVF Log

Select the **AVF Log** accordion to display the event log for .AV Framework. Event logs are recorded at a set interval and can be viewed and downloaded from this accordion.

AVF Log Accordion



The following logging controls are provided:

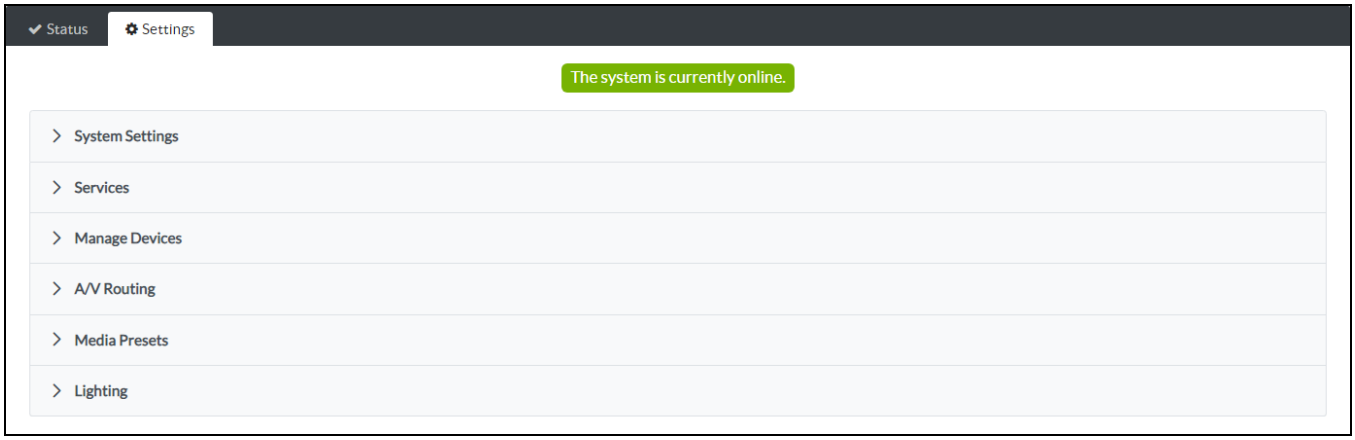
- Select **Stop Scrolling** to prevent the event log from automatically scrolling. Select **Start Scrolling** to resume scrolling if **Stop Scrolling** is selected.
- Select **Download** to download the event log to the local computer as a text file.

Settings

Select the **Settings** tab on the top left of the interface to display accordions for configuring the .AV Framework system settings, connected scheduling and monitoring services, connected devices, and routing for the DMPS3 input and output channels.

Select an accordion name to expand that accordion. If the accordion is expanded, select the accordion name again to collapse the accordion.

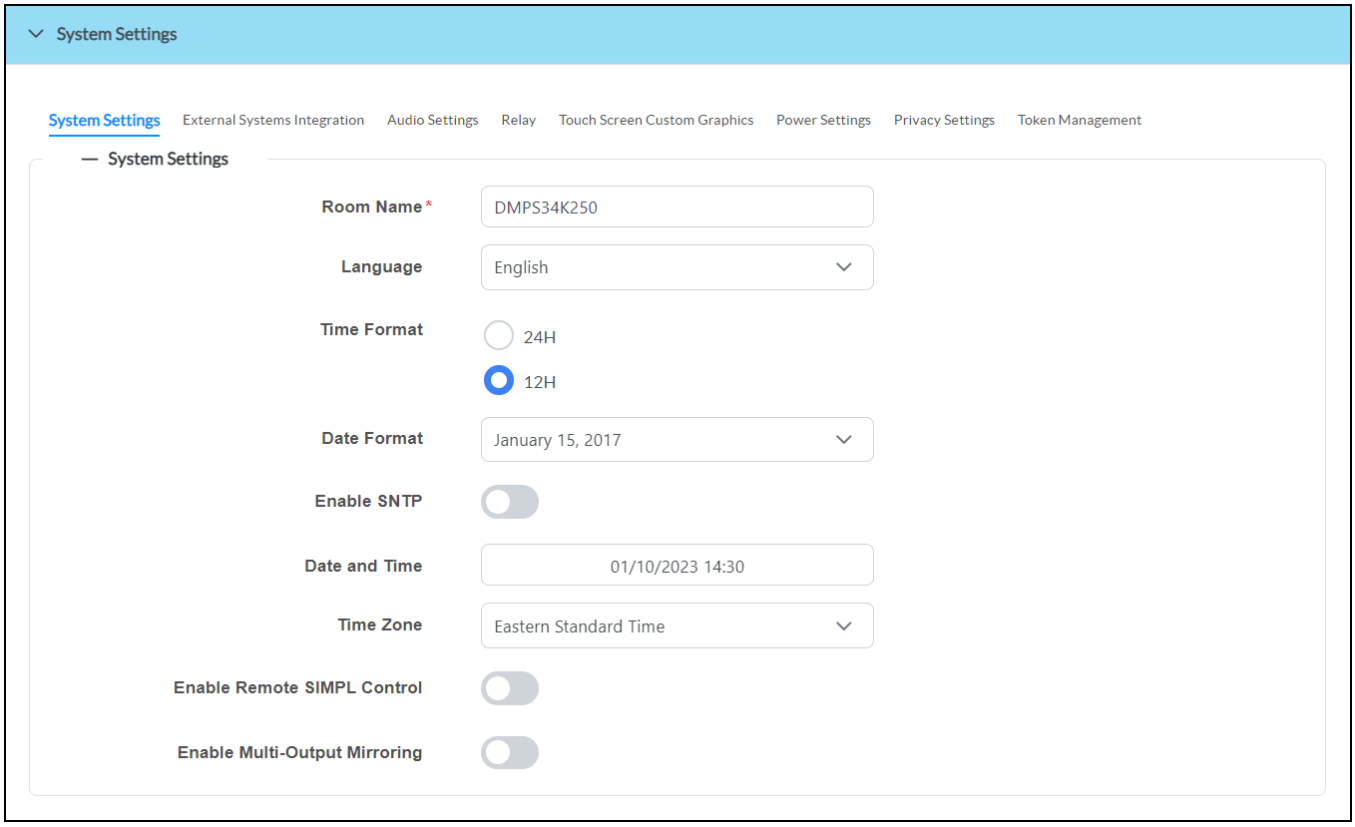
Settings Tab Selections



System Settings

Select the **System Settings** accordion to configure various system settings for the .AV Framework system.

System Settings Accordion



Use the tabs at the top of the accordion to move between the following settings. The **System Settings** tab is open by default.

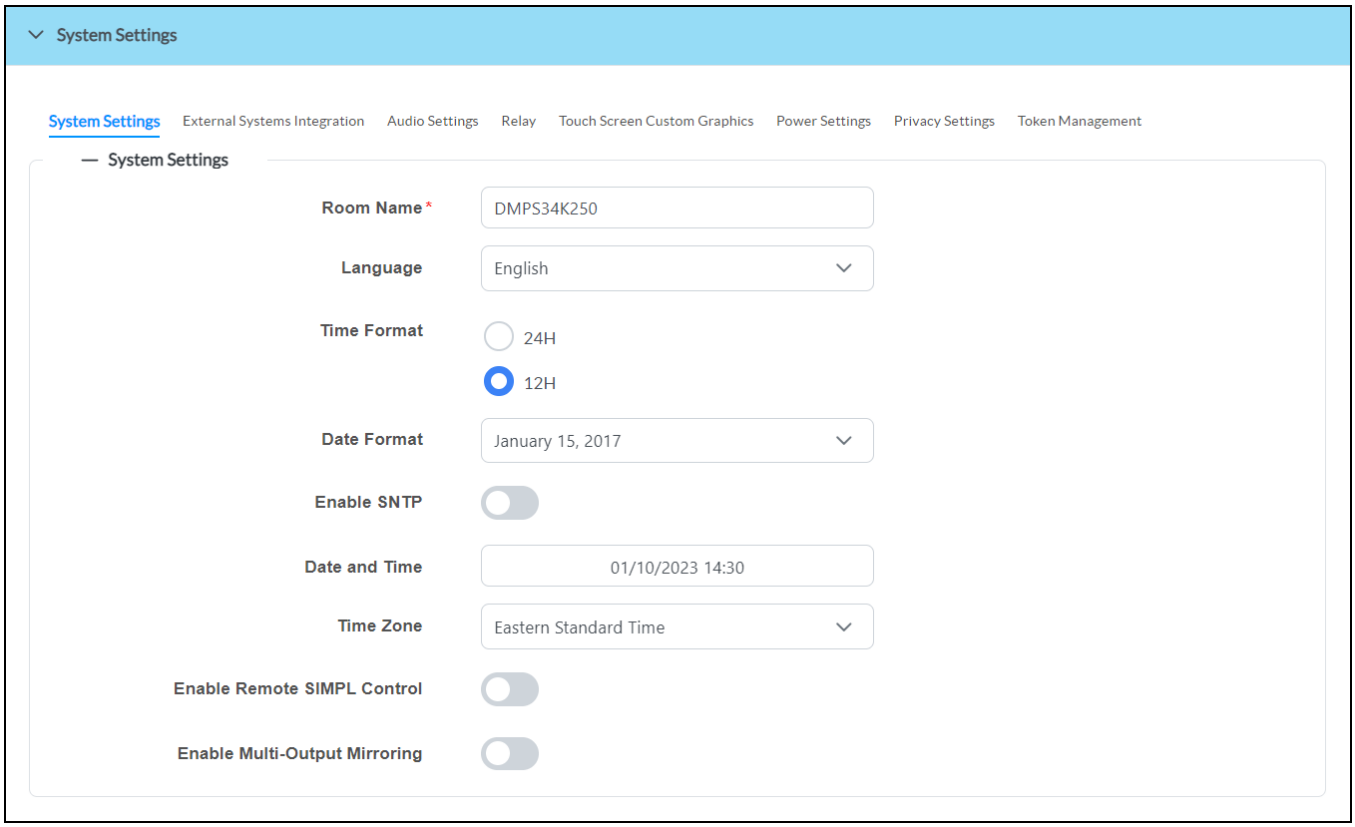
- **System Settings**
- **External Systems Integration**
- **Audio Settings**
- **Relay**
- **Touch Screen Custom Graphics**
- **Power Settings**
- **Privacy Settings**
- **Token Management**

Each setting is covered in the sections that follow.

System Settings

Select the **System Settings** tab in the **System Settings** accordion to configure settings for the .AV Framework system.

System Settings Accordion - System Settings



The following system settings can be configured:

- **Room Name**: Enter a name for the room associated with the system.
- **Language**: Use the drop-down menu to select the language displayed by .AV Framework.
- **Time Format**: Select the **24H** or **12H** radio buttons to display the system time in 24-hour or 12-hour format, respectively.
- **Date Format**: Use the drop-down menu to select a format for displaying the date.
- **Enable SNTP**: Turn on the toggle to use SNTP (Simple Network Time Protocol) to set the date and time.
- **SNTP Server**: If **Enable SNTP** is turned on, enter the URL of the SNTP server used to set the date and time.
- **Date and Time**: If **Enable SNTP** is turned off, select within the text field to display pop-up windows for setting the date and time manually.
- **Time Zone**: Use the drop-down menu to select a time zone.

> **NOTE: Enable SNTP**, **SNTP Server**, and **Date and Time** are hidden from **Room Settings** if the .AV Framework system is connected to Crestron Fusion, as .AV Framework receives date and time settings from Crestron Fusion in this configuration.

- **Enable Remote SIMPL Control**: Turn on the toggle to open port 50000 for use by remote SIMPL programs. Port 50000 is turned off by default for increased security.

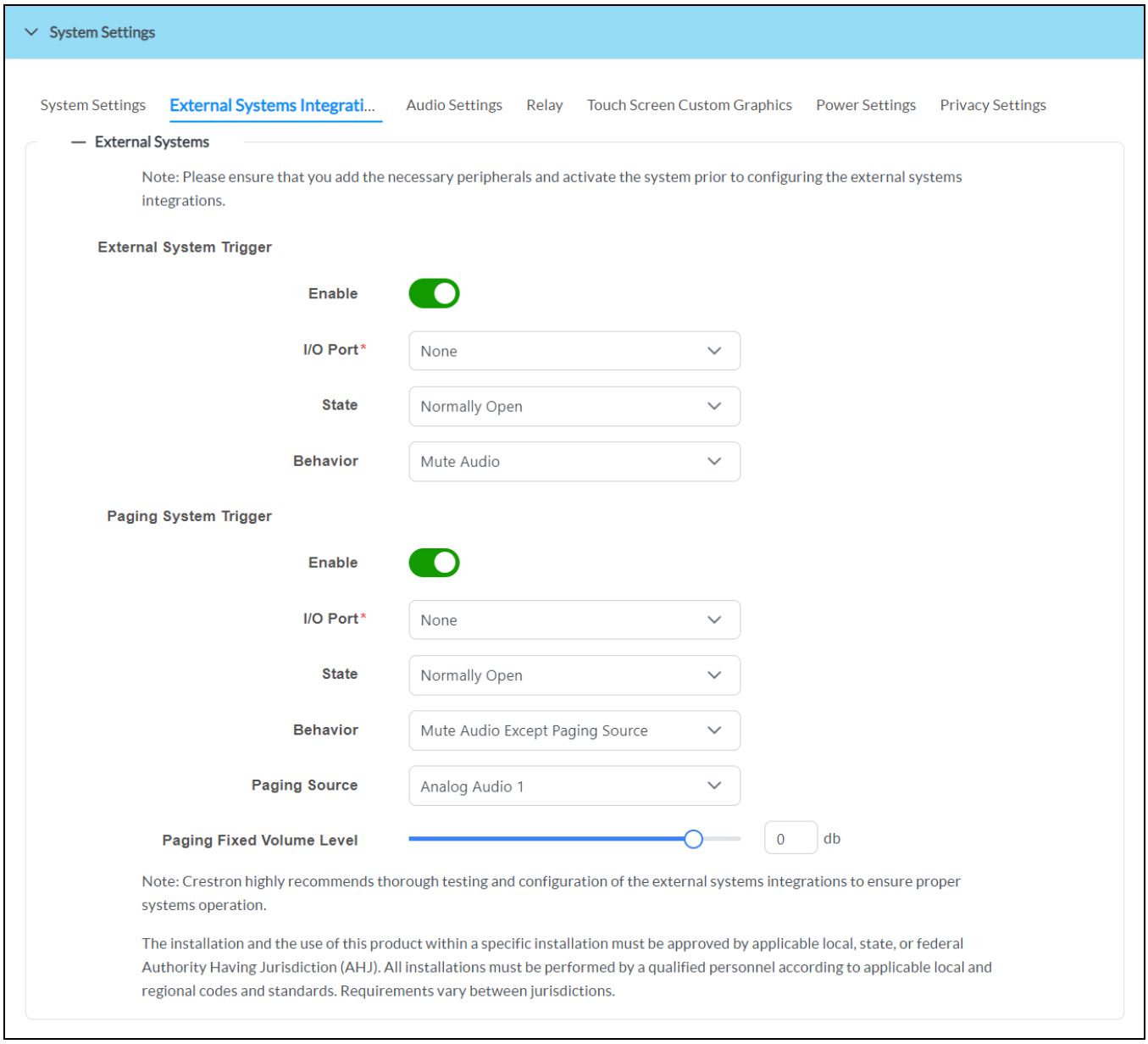
  > **NOTE:** The **AVFramework Remote System Control** module is available within SIMPL's module library. If this module is used within a SIMPL program that is running on the .AV Framework controller, ensure that the IP address is set to "127.0.0.1" within the appropriate SIMPL module parameter. For more information, refer to the SIMPL help file.

- **Enable Multi-Output Mirroring**: Turn on the toggle to use multi-output mirroring behavior for the system. If turned on, a single output can be mirrored to multiple displays or projectors (via a distribution amplifier or splitter). This behavior allows for the proper room on/off, default input selection, and warm-up/cool-down messages to be displayed for all the displays or projectors in the system (if the driver is capable of supporting them).

External Systems Integration

Select the **External Systems Integration** tab in the **System Settings** accordion to configure external systems integration settings for the .AV Framework system.

System Settings Accordion - External Systems Integration



The configuration options displayed in this section are dependent on the DMPS3 device model, the external amplifier settings, and flat panel display devices connected to the .AV Framework system.

External systems integration involves certain requirements, considerations, and limitations that should be reviewed carefully prior to integration. For detailed information, refer to Appendix E: External Systems Integration on page 133.

NOTE: External systems integration is not currently supported on the DMPS3-4K-50 and DMPS3-4K-100-C.

The following external systems integration settings can be configured:

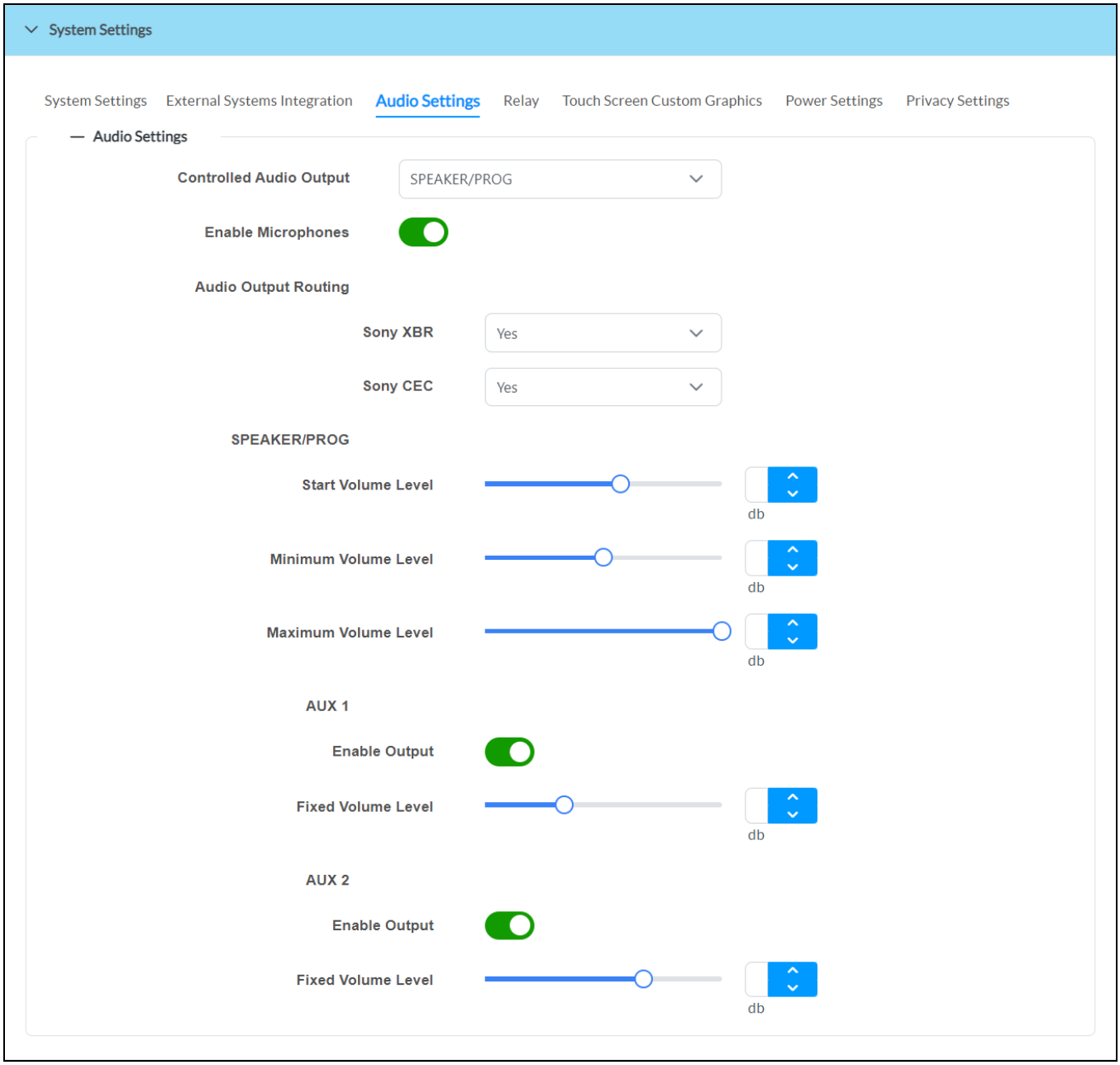
- **External System Trigger**: External system triggers are used to trigger certain configured behavior (such as system off or audio mute) within the .AV Framework system.
    - **Enable**: Turn on the toggle to use external system triggers.
    - **I/O Port**: If **Enable** is turned on, use the drop-down menu to select an available I/O port on the DMPS3 device used to control the trigger.
    - **State**: If **Enable** is turned on, select the default latching state for the trigger.
        - **Normally Open**: The external trigger is latched based on normally open logic. (The trigger will occur only when the circuit is closed.)
        - **Normally Closed**: The external trigger is latched based on normally closed logic. (The trigger will occur only when the circuit is opened.)
    - **Behavior**: If **Enable** is turned on, use the drop-down menu to select the behavior associated with the external system trigger.
        - **Turn Off System**: The .AV Framework system powers off when the external trigger is initiated.
        - **Mute Audio**: Audio for the .AV Framework system is muted throughout the duration of the external system trigger.
- **Paging System Trigger**: Paging system triggers are used to trigger certain configured behavior within the .AV Framework system, including paging events (such as emergency notifications).
    - **Enable**: Turn on the toggle to use paging system triggers.
    - **I/O Port**: If **Enable** is turned on, use the drop-down menu to select an available I/O port on the DMPS3 device used to control the trigger.
    - **State**: If **Enable** is turned on, select the default latching state for the trigger.
        - **Normally Open**: The external trigger is latched based on normally open logic. (The trigger will occur only when the circuit is closed.)
        - **Normally Closed**: The external trigger is latched based on normally closed logic. (The trigger will occur only when the circuit is opened.)
    - **Behavior**: If **Enable** is turned on, use the drop-down menu to select the behavior associated with the external system trigger.
        - **Mute Audio**: Audio for the .AV Framework system is muted throughout the duration of the external system trigger.
        - **Mute Audio Except Paging Source**: Audio for the .AV Framework system is muted throughout the duration of the external system trigger except for the paging source.
    - **Paging Source**: If **Behavior** is set to **Mute Audio Except Paging Source**, use the drop-down menu to select an available audio output on the DMPS3 device that is configured as the paging source.

- **Paging Fixed Volume Level**: If **Behavior** is set to **Mute Audio Except Paging Source**, use the slider to select a fixed decibel level for the paging volume or enter a value manually in the text field.

Audio Settings

Select the **Audio Settings** tab in the **System Settings** accordion to configure audio settings for the .AV Framework system.

System Settings Accordion - Audio Settings



The configuration options displayed in this section differ depending on the DMPS3 model used and the system audio configuration.

The following audio settings can be configured:

- **Controlled Audio Output**: Use the drop-down menu to select the audio output in the system to control. The **Controlled Audio Output** is the output that is controlled when pressing the volume up/down on the touch screen Interface. .AV Framework supports one controlled audio output.
    - If **SPEAKER/PROG** is selected, the DMPS3 device controls the volume on both the internal amplifier (if the DMPS3 device is equipped with one) and the program output.
    - If **Display** is selected, the A/V switcher controls the volume for a connected display device (if supported).
    - If a custom audio mixer device is selected, the A/V switcher controls the volume through the connected audio mixer.
- **Enable Microphones**: If **SPEAKER/PROG** is selected for **Controlled Audio Output**, turn on the toggle to use the microphones on input devices (if applicable).
- **Audio Output Routing**: Use the drop-down menus to select the audio routing behavior for the available audio output(s):

  > **NOTES:**
  >
  > - Only one audio output can be set to **Yes with Volume Control**. If upgrading from an older .AV Framework version where multiple outputs have this setting, a warning message is displayed that prompts the user to change the setting before the audio settings can be saved.
  > - Displays do not support the **Yes with Volume Control** setting. A warning message is displayed that prompts the user to change the settings be the audio settings can be saved.

    - **Yes**: Audio is routed to the output channel.
    - **Yes with Volume Control**: Audio is routed to the output channel, and the touch screen or any configured button panel can control volume of the flat panel display or projector using an appropriate device driver (IR, IP, Serial, Crestron Connected). **SPEAKER/PROG** must be selected for **Controlled Audio Output**. This selection is not available for audio mixers.
    - **No**: Audio is not routed to the output channel.

The following volume control options can be configured depending on whether they are supported by the selected controlled audio output:

- **Enable Output**: Turn on the toggle to use the audio output in the system.
- **Start Volume Level**: Use the slider to select a starting volume decibel level for the output or enter a value manually in the text field.
- **Minimum Volume Level**: Use the slider to select a minimum volume decibel level for the output or enter a value manually in the text field.
- **Maximum Volume Level**: Use the slider to select a maximum volume decibel level for the output or enter a value manually in the text field.

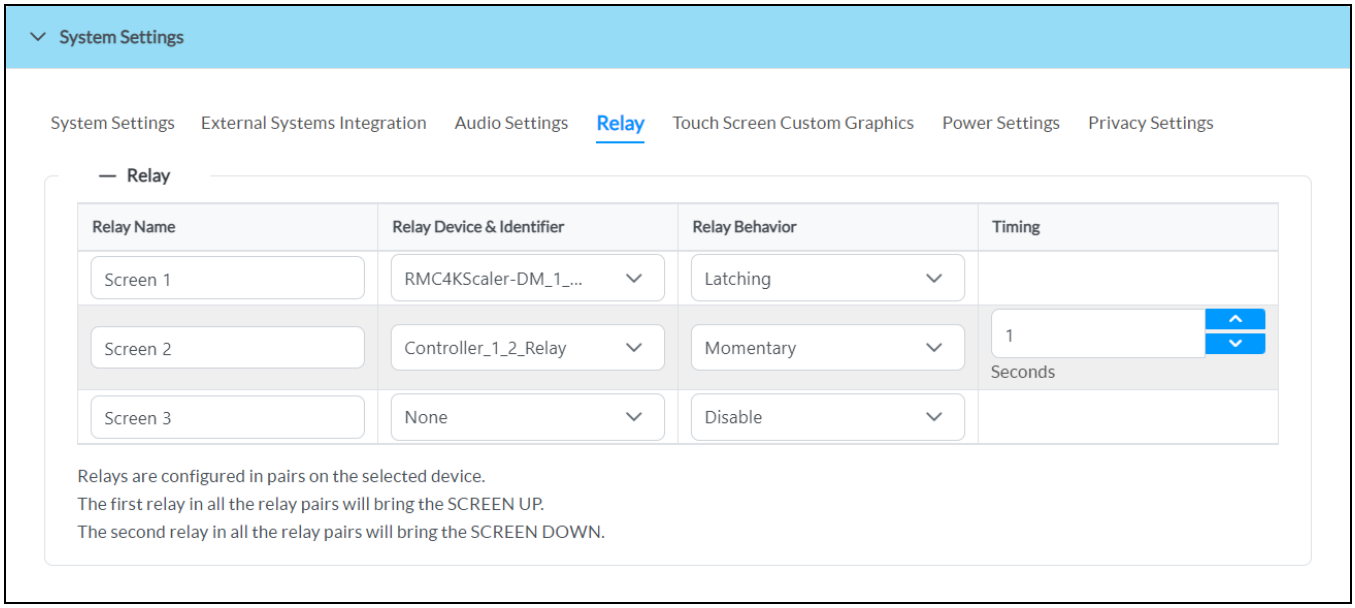
  > **NOTE:** The value for **Start Volume Level** is limited to the range set between **Minimum Volume Level** and **Maximum Volume Level**.

- **Fixed Volume Level**: Use the slider to select a fixed volume decibel level for the output or enter a value manually in the text field.

Relay

Select the **Relay** tab in the **System Settings** accordion to select a relay behavior for connected video display sources, such as a projector.

System Settings Accordion - Relay



Each connected video display source is displayed in table. The following relay settings can be configured per video display source:

- **Relay Name**: Enter a name for the relay.
- **Relay Device & Identifier**: Use the drop-down menu to select a relay pair from the available configured devices.

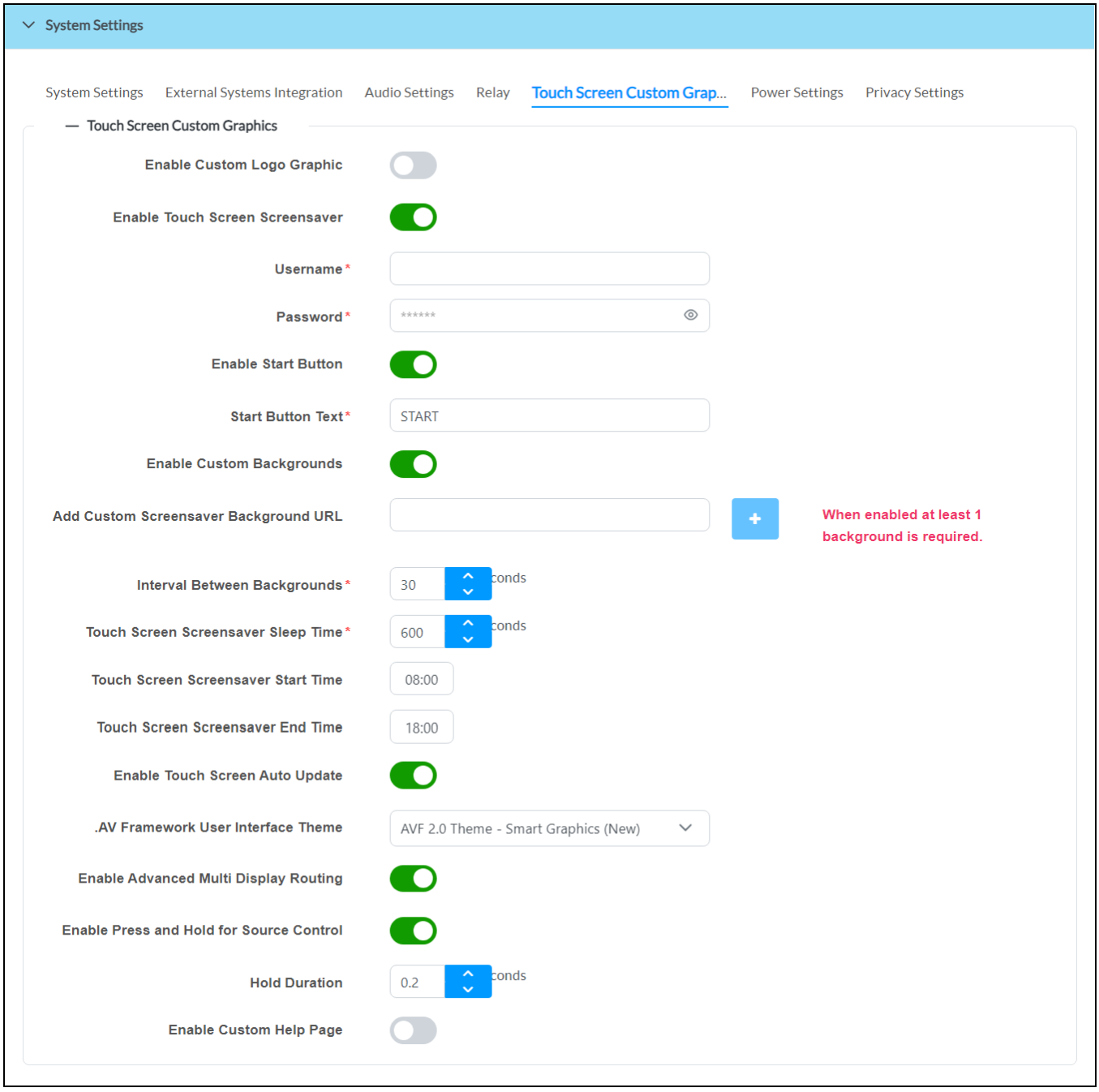
  > **NOTE:** A specific device relay pair can have only one saved configuration.

- **Relay Behavior**: Use the drop-down menu to select one of the following relay behaviors for the chosen relay pair:
  - **Momentary**: The chosen video source is set (turned on) or reset (turned off) by a relay command and remains in the selected state for the duration specified in the Timing field.
  - **Latching**: The chosen video source is set (turned on) or reset (turned off) by a relay command and remains in the selected state until an inverse relay command is sent.
  - **Disable**: Relay behavior is turned off for the chosen video source.
- **Timing**: If **Momentary** is selected for **Relay Behavior**, enter the duration in seconds that the video source remains in a specified state following a relay command.

Touch Screen Custom Graphics

Select the **Touch Screen Custom Graphics** tab in the **System Settings** accordion to configure screensavers, backgrounds, and themes for the .AV Framework touch screen project.

System Settings Accordion - Touch Screen Custom Graphics



The following touch screen custom graphics settings can be selected:

- **Enable Custom Logo Graphic**: Turn on the toggle to set a custom logo graphic for the touch screen project. Custom logo graphics can be set only if .AV Framework is not connected to Crestron Fusion.
- **Custom Logo Graphic URL**: If **Enable Custom Logo Graphic** is turned on, enter the URL of the desired custom logo graphic source file. A preview of the image is displayed below this setting if the source file URL is valid.

NOTES:

- .AV Framework allocates an area of 800 x 600 pixels for the custom logo graphic. Custom graphics larger than 800 x 600 pixels are not accepted and must be scaled down manually. Custom graphics smaller than 800 x 600 pixels are not scaled up, so these graphics should be resized for optimal image quality.
- Supported custom graphic file types are BMP, JPG, and PNG.

- **Enable Touch Screen Screensaver**: Turn on the toggle to use a touch screen screensaver for the touch screen project.
- **Username**: If **Enable Touch Screen Screensaver** is turned on, enter the admin account username for the touch screen.
- **Password**: If **Enable Touch Screen Screensaver** is turned on, enter the admin account password for the touch screen.
- **Enable Start Button**: If **Enable Touch Screen Screensaver** is turned on, turn on the toggle to add a **START** button to the touch screen project. The **START** button will display only if .AV Framework is not connected to a scheduling calendar.

NOTE: The **START** button is used to switch to the system's default route for systems that are not connected to a scheduling calendar. For more information, refer to Home Screen Overview on page 76.

- **Start Button Text**: If **Enable Start Button** is turned on, enter text that will be displayed on the **START** button in the touch screen project.
- **Enable Custom Screensaver Backgrounds**: If **Enable Touch Screen Screensaver** is turned on, turn on the toggle to use custom background graphics for the touch screen screensaver.
- **Add Custom Screensaver Background URL**: If **Enable Custom Screensaver Backgrounds** is turned on, enter the URL of the desired custom background image source file.

NOTE: Observe the following when choosing a custom background image file:

- Up to 15 custom background URLs can be added. Select the plus (**+**) button next to a text field to add a new background URL once the URL has been entered. Select the minus (**-**) button next to an existing background URL to delete the URL. At least one background is required if **Enable Custom Screensaver Backgrounds** is turned on.
- .AV Framework allocates an area of 800 x 600 pixels for the custom screensaver background graphic. Custom graphics larger than 800 x 600 pixels are not accepted and must be scaled down manually. Custom graphics smaller than 800 x 600 pixels are not scaled up, so these graphics should be resized for optimal image quality.
- Supported custom graphic file types are BMP, JPG, and PNG.

- **Interval Between Backgrounds**: Enter the duration in seconds that a background image is displayed on the screensaver before switching to the next image.
- **Touch Screen Screensaver Sleep Time**: Enter the time in seconds that the touch screen must be idle before the screensaver is activated.

- **Touch Screen Screensaver Start Time**: Enter the time of day in 24-hour format when the screensaver becomes active.
- **Touch Screen Screensaver End Time**: Enter the time of day in 24-hour format when the screensaver becomes inactive.
- **Enable Touch Screen Auto Update**: Turn on the toggle to use automatic updates for the .AV Framework .vtz project file on a supported touch screen.
    - If an .AV Framework .vtz project file has not been previously loaded to the touch screen, the auto update mechanism downloads the latest .vtz file for the chosen **.AV Framework User Interface Theme** and loads it to the touch screen. The existing project file on the touch screen is overwritten.
    - If an .AV Framework .vtz project file has been previously loaded to the touch screen, the auto update mechanism updates the project file only if the hash file on the touch screen is different from the hash on the remote server or cloud.
- **.AV Framework User Interface Theme**: If **Enable Touch Screen Auto Update** is turned on, use the drop-down menu to select between **AVF 1.0 Theme - Smart Grahpics (Legacy)**, **AVF 2.0 Theme - Smart Graphics (Legacy)**, **AVF 2.0 Theme - Crestron HTML5 (Legacy)**, and **AVF 3.0 Theme - Crestron Construct (New)**. For more information on these themes, refer to Display Overview on page 71.
- **Enable Screen Background**: If **AVF 3.0 Theme - Crestron Construct (New)** is selected for **.AV Framework User Interface Theme**, turn on the toggle to use a predefined background for the touch screen project.
- **Screen Background Selection**: If **Enable Screen Background** is turned on, use the drop-down menu to select one of the available backgrounds to use for the touch screen project.
- **Enable Advanced Multi Display Routing**: Turn on the toggle to turn on advanced multiple display routing for the .AV Framework system. When this setting is turned on, the touch screen project shows a new routing page that allows individual video sources to be selected and routed to different displays in the system. For more information, refer to Present a Source Screen - Advanced Multi Display Routing on page 84.

    > **NOTE:** The **Enable Advanced Multi Display Routing** setting is available only if using a DMPS3 device that supports multiple outputs and only if **AVF 2.0 Theme - Smart Graphics (Legacy)** or **AVF 3.0 Theme - Crestron Construct (New)** is selected for **.AV Framework User Interface Theme**.

- **Enable Press and Hold for Source Control**: If **Enable Advanced Multi Display Routing** is turned on, turn on the toggle to use press and hold functionality for advanced multiple display routing. If this setting is turned on, users can press and hold video sources in the display routing page to navigate to that source in the touch screen project.
- **Hold Duration**: If **Enable Press and Hold for Source Control** is turned on, enter the duration (in seconds) that a user must press and hold on a video source to navigate to that source in the touch screen project.

- **Enable Custom Help Page**: Turn on the toggle to display a custom help page image in the touch screen project. When turned on, the uploaded custom help page image replaces the default help overlay when the on-screen **Help** button (AVF 1.0 UI) or information button (AVF 2.0 UI and AVF 3.0 UI) is tapped.
- **Custom Help Page URL**: If **Enable Custom Help Page** is turned on, enter the URL of the desired custom help page image source file. A preview of the image is displayed below this setting if the source file URL is valid.

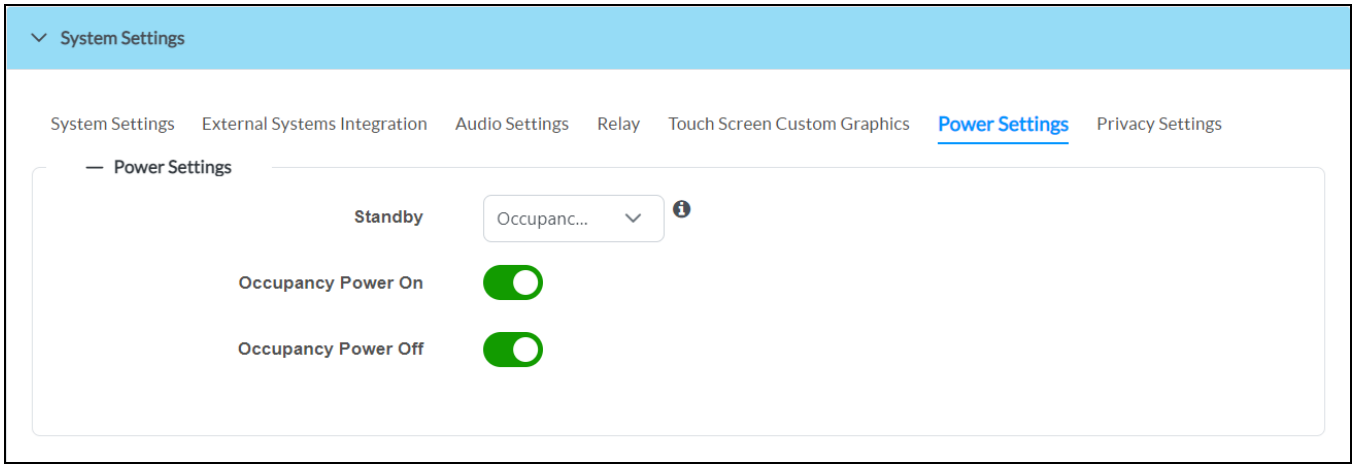
  NOTES:

  - .AV Framework allocates an area of 800 x 600 pixels for the custom help file graphic. Custom graphics larger than 800 x 600 pixels are not accepted and must be scaled down manually. Custom graphics smaller than 800 x 600 pixels are not scaled up, so these graphics should be resized for optimal image quality.
  - Supported custom graphic file types are BMP, JPG, and PNG.

Power Settings

Select the **Power Settings** tab in the **System Settings** accordion to manage how the .AV Framework system powers on and off.

System Settings Accordion - Power Settings (Occupancy Based)



Use the **Standby** drop-down menu to select the power setting for the .AV Framework system. The controls provided change based on the selected power setting.

- **Occupancy Based**: The system powers on or off based on room occupancy detection. A functional occupancy sensor must be added to the system to use this setting.
- **Video Sync Based**: The system powers on or off based on a video sync connection.
- **Always On**: The system is always on at given days and times regardless of occupancy or video sync status.

Occupancy Based

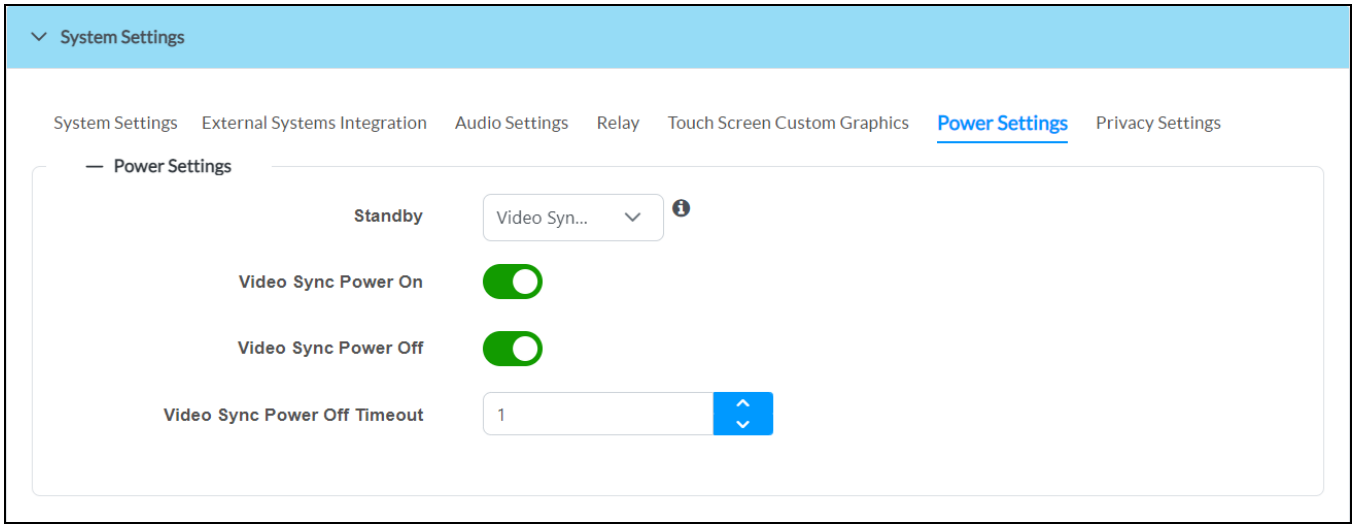
The following settings are displayed if **Occupancy Based** is selected for **Standby**. Refer to the previous image.

- **Occupancy Power On**: Turn on the toggle to power on the system when occupancy is detected in the room.
- **Occupancy Power Off**: Turn on the toggle to power off the system when occupancy is no longer detected in the room.

Video Sync Based

The following settings are displayed if **Video Sync Based** is selected for **Standby**.

System Settings Accordion - Power Settings (Video Sync Based)

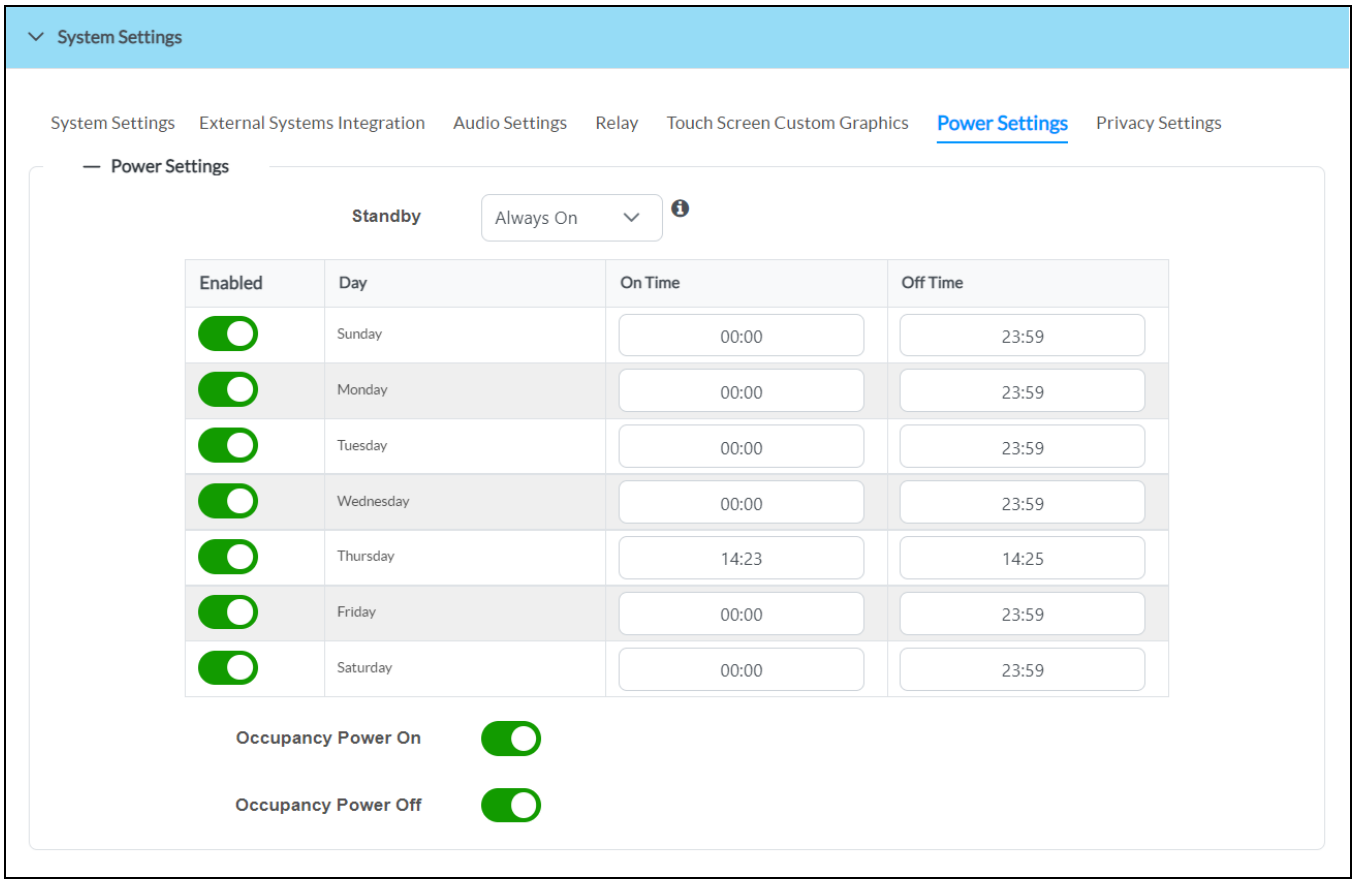


- **Video Sync Power On**: Turn on the toggle to power on the system when a video sync connection is established.
- **Video Sync Power Off**: Turn on the toggle to power off the system when a video sync connection is ended.
- **Video Sync Power Off Timeout**: Enter a duration for the system to power off after an active video sync times out.

Always On

The following settings are displayed if **Always On** is selected for **Standby**.

System Settings Accordion - Power Settings (Always On)



- **Enabled**: Turn on the toggle to use always on power settings for the system on the corresponding day of the week.
- **Day**: The day of the week that corresponds to the always on power settings.
- **On Time**: Select the text field to display pop-up windows for selecting the time that the room will be in the on state.
- **Off Time**: Select the text field to display pop-up windows for selecting the time that the room will be in the off state.
- **Occupancy Power On**: Turn on the toggle to power on the system when occupancy is detected in the room (outside of business hours).
- **Occupancy Power Off**: Turn on the toggle to power off the system when occupancy is no longer detected in the room (outside of business hours).

The system exhibits the following behavior when **Always On** is selected:

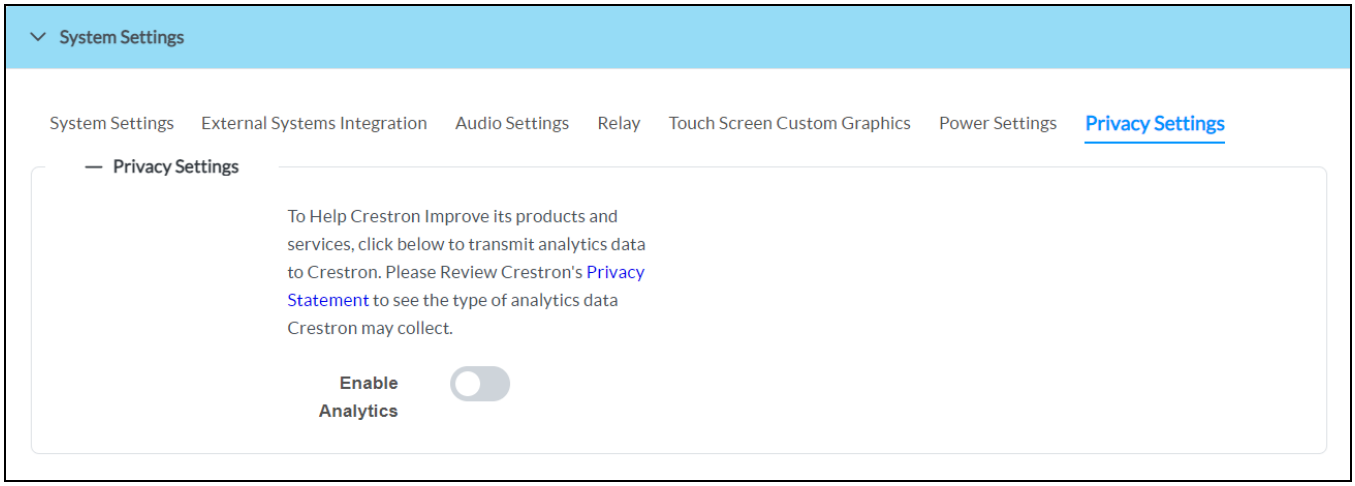
> **NOTE:** To have the .AV Framework system stay on for the entire day, set **On Time** to "0:00" and set **Off Time** to "23:59". If these settings are applied to consecutive days, the system will not power off between days.

- The connected display will be on during the set business hours and days.
- A connected touch screen will always be on with the home screen shown.
- Crestron Fusion power events are not ignored and can still turn the system on or off.
- Occupancy Vacant events will be ignored during business hours.
- Occupancy Occupied events are not ignored during business hours.
- Occupancy events can turn the room on or off outside of business hours.
- Hard button power events are allowed.
- HDMI sync and video route is ignored regardless of business hours.
- The touch screen hard button turns off the room including the display (if controllable).

Privacy Settings

Select the **Privacy Settings** tab in the **System Settings** accordion to configure privacy settings for sending analytics data to Crestron.

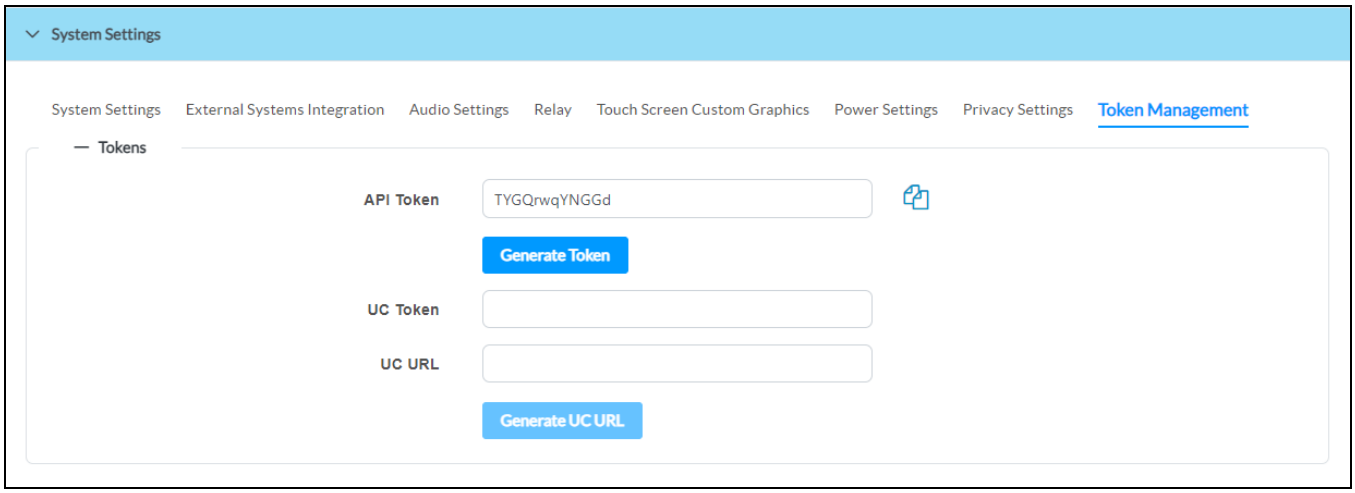
System Settings Accordion - Privacy Settings



Turn the **Enable Analytics** toggle on or off to opt in or out of having analytics data from your .AV Framework system sent to Crestron to help improve the user experience. As of .AV Framework version 6.24, these settings are initially configured during the first login on a new system or following an upgrade.

Token Management

Select the **Token Management** tab in the **System Settings** accordion to generate tokens and URLs for use with .AV Framework.

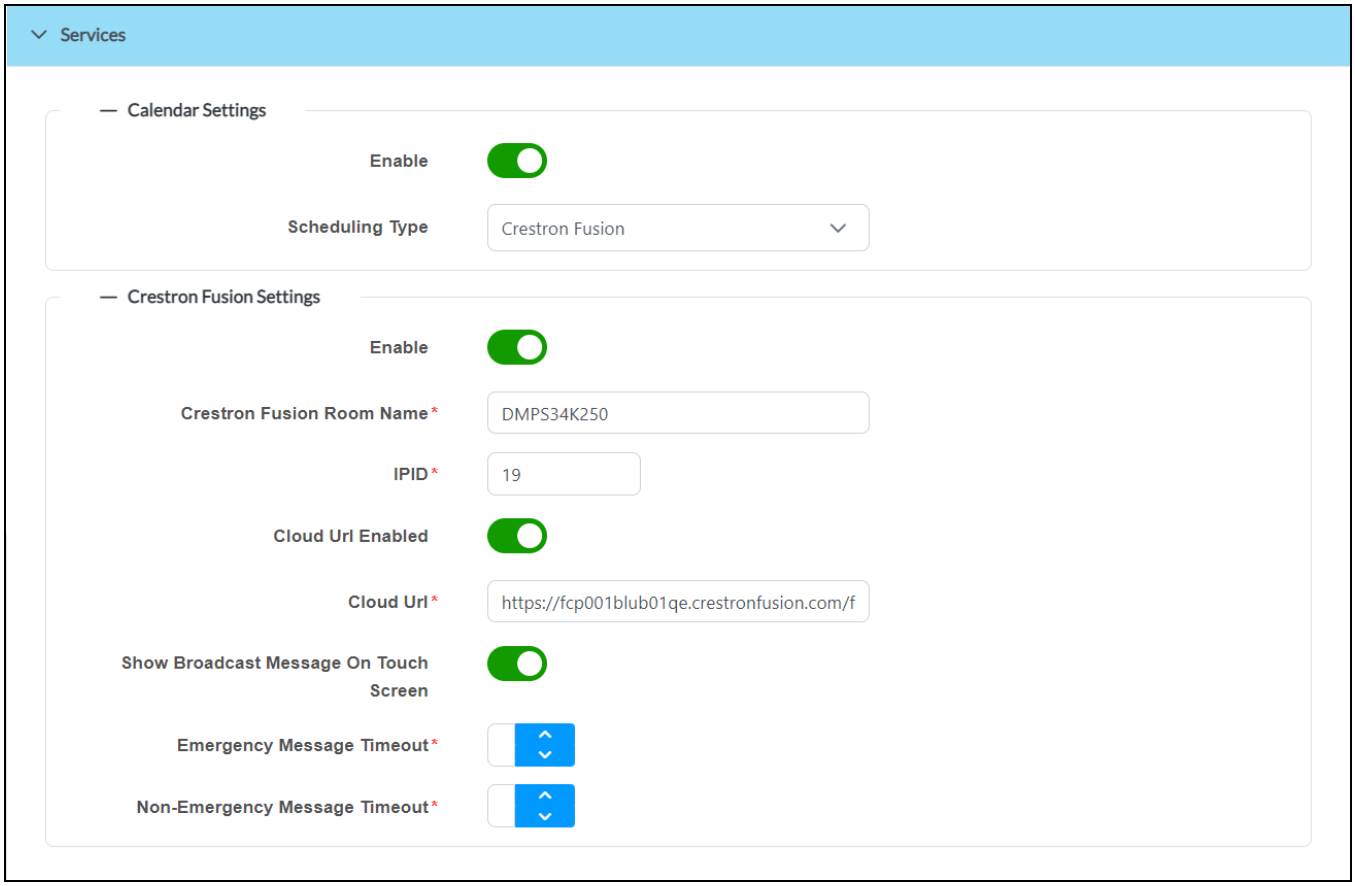


- **API Token**: Generates authorization tokens for use with the .AV Framework API. For more information on using the .AV Framework API, refer to the API for .AV Framework Software Developer Microsite.
    - Select **Generate Token** to generate a new authorization token. The token is generated within the **API Token** field.
    - Select the copy button next to the **API Token** field to copy the authorization token to the clipboard.
- **UC URL**: Generates a URL that allows the .AV Framework system to connect to a UC-ENGINE user interface via XPanel.
    - Enter an authorization token generated on the UC-ENGINE device in the **UC Token** field.
    - Select **Generate UC URL** to generate a new URL with the appended token. The URL is generated within the UC URL field.

Services

Select the **Services** accordion to configure a connection to Crestron Fusion® software and other scheduling calendars.

Services Accordion



The following **Services** settings are displayed.

Calendar Settings

Select the **+** (plus) icon next to **Calendar Settings** (if the section is not already expanded) to display the following scheduling calendar settings:

Services Accordion - Calendar Settings (Crestron Fusion)

- **Enable**: Turn on the toggle to turn on a connection to the chosen scheduling calendar.
- **Scheduling Type**: Use the drop-down menu to select one of the available scheduling calendar providers.
    - **Crestron Fusion**
    - **Exchange/O365**
    - **Google**

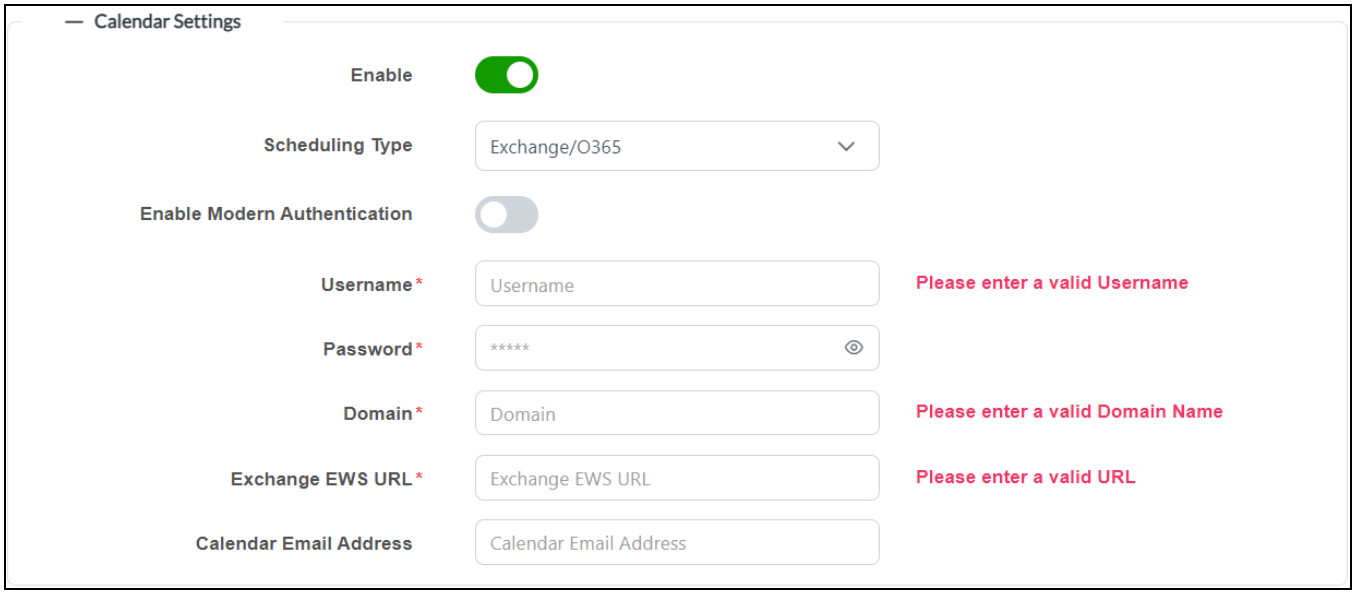
Additional settings are displayed depending on the chosen scheduling calendar provider.

> **NOTE: Crestron Fusion** can only be selected if the **Enable** toggle is turned on within the Crestron Fusion Settings section.

Exchange/O365

Select **Exchange/O365** for **Scheduling Type** to connect a Microsoft® Exchange scheduling calendar via a Microsoft Office 365® account to .AV Framework.

Services Accordion - Calendar Settings (Exchange/O365)



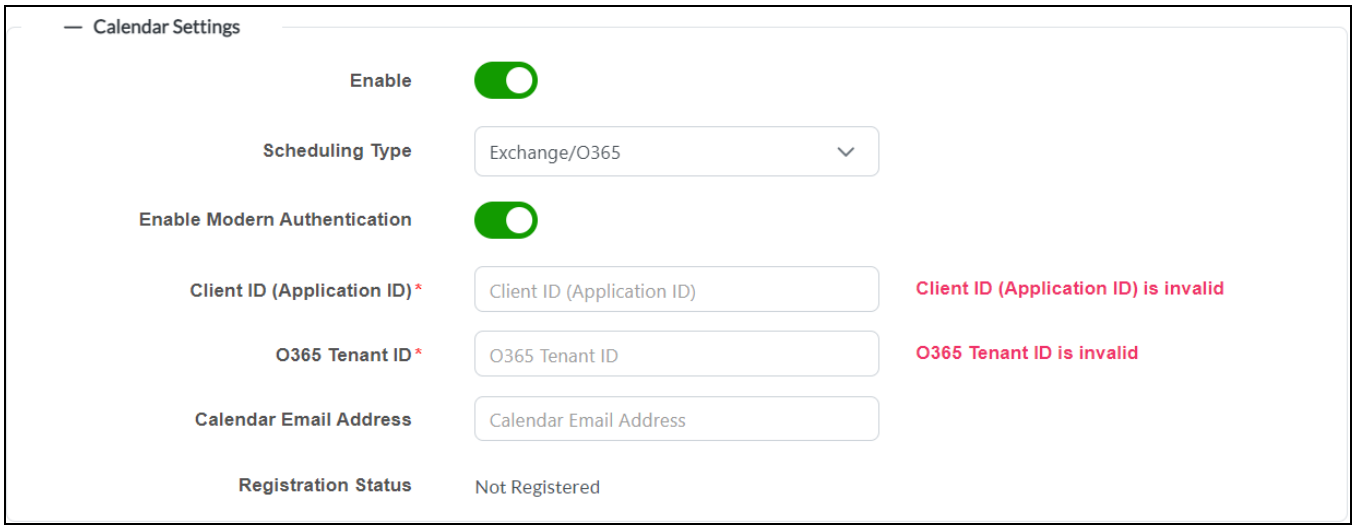
The following settings are displayed:

- **Enable Modern Authentication**: Turn on the toggle to use Modern Authentication for the Office 365 account. For instructions on configuring Modern Authentication for use with the .AV Framework system, refer to Appendix I: Configuring Modern Authentication for EWS on page 149.
- **Username**: Enter the username for the Office 365 account.
- **Password**: Enter the password for the Office 365 account.
- **Domain**: Enter the domain name associated with the Office 365 account.
- **Exchange EWS URL**: Enter the Microsoft EWS (Exchange Web Services) server URL that the scheduling calendar uses to access Microsoft Exchange scheduling data.

- **Calendar Email Address**: Enter the email address associated with the Microsoft Exchange scheduling calendar.

If the **Enable Modern Authentication** toggle is turned on, the following settings are displayed instead:

Calendar Settings (Exchange/O365) - With Modern Authentication



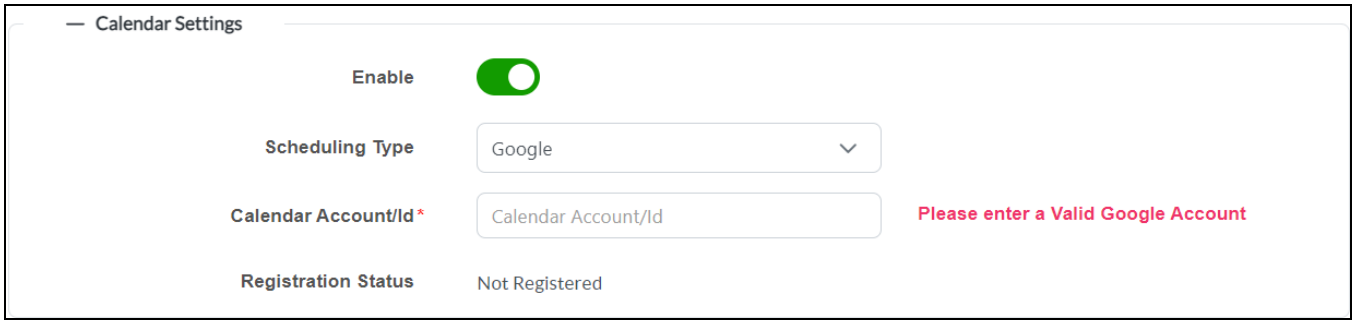
- **Client ID (Application ID)**: Enter the client ID created for the .AV Framework application in the Azure® Active Directory® service.
- **O365 Tenant ID**: Enter the Office 365 tenant ID created for the .AV Framework application in the Azure Active Directory service.
- **Calendar Email Address**: Enter the email address associated with the Microsoft Exchange scheduling calendar.
- **Registration Status**: Shows the current registration status for the Office 365 account.

Once the Modern Authentication settings have been saved and the new configuration is activated, a **Register** button is displayed for pairing the Office 365 account with .AV Framework. For more information, refer to Appendix I: Configuring Modern Authentication for EWS on page 149.

Google

Select **Google** for **Scheduling Type** to connect a Google Calendar™ scheduling calendar via a Google® account to .AV Framework.

Services Accordion - Calendar Settings (Google)



The following settings are displayed:

Calendar Account/Id: Enter the calendar account name or ID if more than one calendar is available for the Google account. If this field is left empty, the scheduling application uses the primary calendar set for the Google account.

- **Registration Status**: Shows the current registration status for the Google account.

Once the Google settings have been saved and the new configuration is activated, a **Register** button is displayed for pairing the Google account with .AV Framework.

Crestron Fusion Settings

Select the **+** (plus) icon next to **Crestron Fusion Settings** (if the section is not already expanded) to display the following Crestron Fusion settings:

Services Accordion - Crestron Fusion

The following settings are displayed:

- **Enable**: Turn on the toggle to turn on a connection to Crestron Fusion.
- **Crestron Fusion Room Name**: Enter the room name in Crestron Fusion associated with the .AV Framework system.
- **IPID**: Enter the IP ID of the selected Crestron Fusion room.
- **Crestron URL Enabled**: Turn on the toggle to display a field for entering the URL of the Crestron Fusion server.
- **Cloud URL**: Enter the URL of the connected Crestron Fusion server.
- **Show Broadcast Message on Touch Screen**: Turn on the toggle to show broadcast messages from Crestron Fusion on a touch screen.
- **Emergency Message Timeout**: Enter the time, in minutes, it takes for an emergency broadcast from the Crestron Fusion server to time out.
- **Non-Emergency Message Timeout**: Enter the time, in minutes, it takes for a nonemergency broadcast from the Crestron Fusion server to time out.

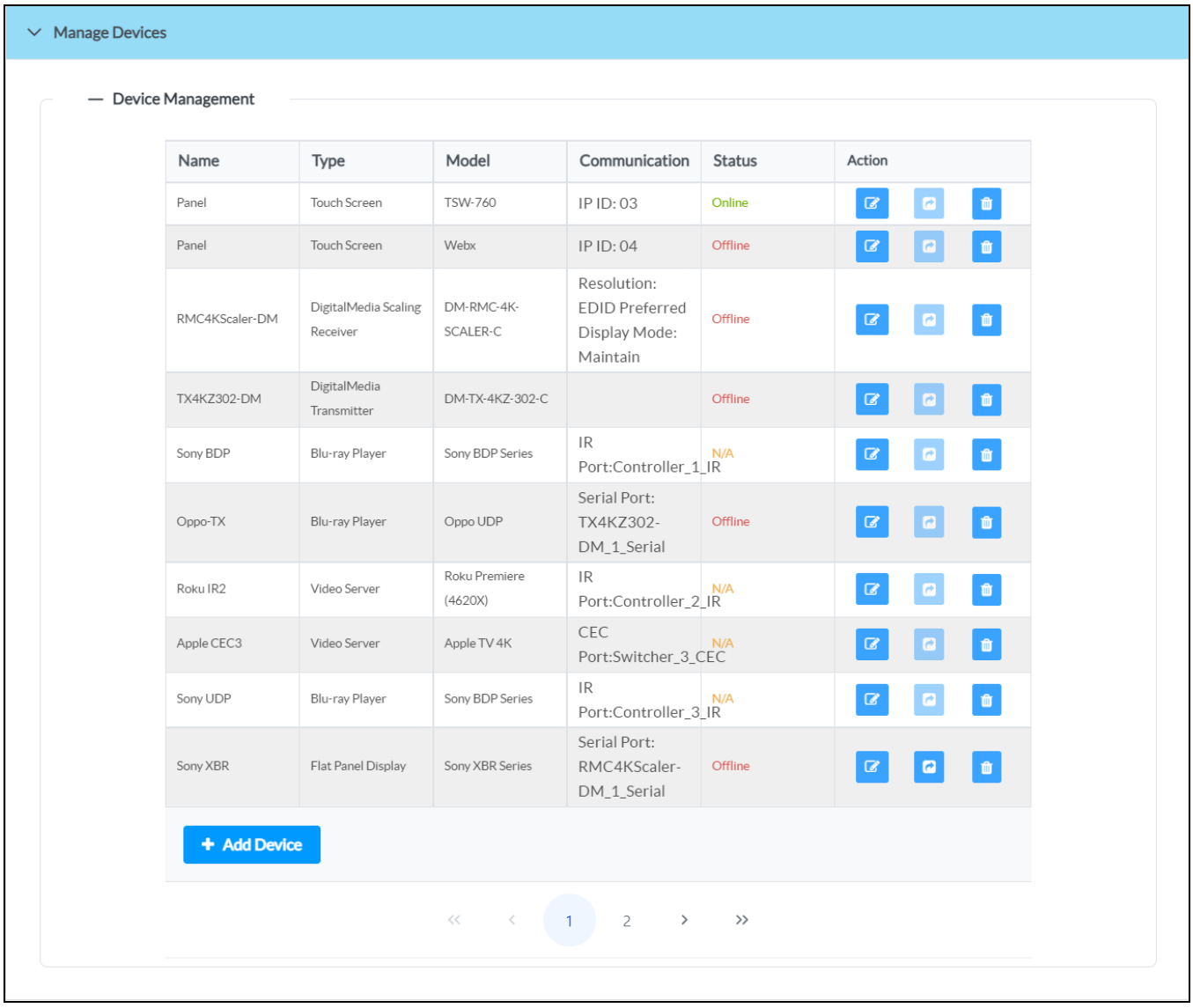
For more information about connecting .AV Framework to Crestron Fusion, refer to Connect to Crestron Fusion on page 106.

> **NOTE:** If .AV Framework is connected to a Crestron Fusion on-premises server, connections are made using either traditional (outbound) or inbound communications. For more information, refer to the Crestron Fusion 10 On-Premises Software Getting Started Guide.

Manage Devices

Select the **Manage Devices** accordion to add a device to the .AV Framework system, to view information about connected devices, and to edit or remove a device.

Manage Devices Accordion



The **Manage Devices** accordion lists all devices that have been added to the .AV Framework system in table format. The following information is provided for each device:

- **Name**: The user-defined device name.
- **Type**: The device type.
- **Model**: The device model.
- **Communications**: The communication protocol used by the device.
- **Status**: The device status:
    - **Online**: The device is detected and is providing feedback to .AV Framework.
    - **Offline**: The device was detected at one point, but it is no longer detected by .AV Framework.
    - **N/A**: The device status is not reported (shown for CEC-controlled displays, non-controlled displays, IR-controlled devices, and for devices connected to the DMPS3 device through the **AUX1**, **AUX2**, and **SPEAKER** ports).
    - **Requires Configuration**: The device still needs additional configuration before it can be used in the .AV Framework system.
- **Action**: Select the provided buttons to edit, test (if applicable), or delete the device.

Observe the following points when managing devices in .AV Framework:

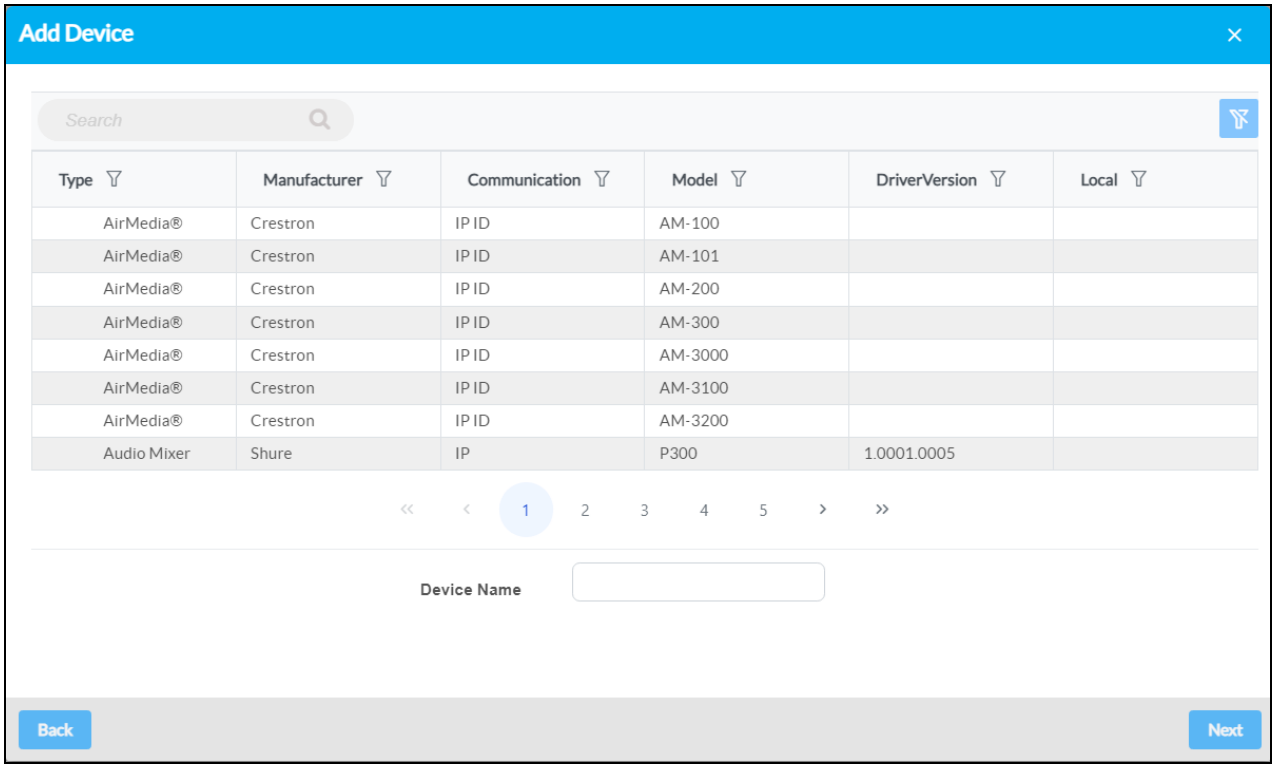
- Certain device classes limit the number of devices that can be added to the system. Once the maximum number of devices have been added to the system, the devices within that class can no longer can be selected from the **Add Device** dialog box.
- Before adding a device to .AV Framework, the chosen device should be connected to the DMPS3 device or accessible on the network. For more information, refer to Appendix A: Interface Setup on page 97.
- Be sure to select the correct device model when adding a device via an IP connection, and confirm that the IP ID is assigned to the correct IP device.
- If **Custom Conference Control** is selected for the device type, additional configuration procedures are required outside of .AV Framework. For more information, refer to Appendix F: Configure a Zoom Rooms Controller on page 137, Appendix J: Configure Cisco Touch 10 Custom Conferencing on page 167, Appendix K: Configure Microsoft Teams Custom Conferencing on page 175, or Appendix L: Configure Google Meet Custom Conferencing on page 179.

Add a Device

To add a new device to the .AV Framework system:

1. Select **+ Add Device**. The **Add Device** dialog box is displayed.

   Add Device Dialog Box



   All available device models are provided in table format that provides the following information:

   - **Type**: The device type.
     - A dollar icon $ is shown to the left of the device type if the corresponding device model uses a paid driver.
     - A Crestron swirl icon is shown to the left of the device type if the corresponding device model uses a driver that has been tested and validated by Crestron.
   - **Manufacturer**: The device manufacturer.
   - **Communication**: The communication protocol used to connect the device to .AV Framework.
   - **Model**: The device model.
   - **Driver Version**: The version of the device driver (if applicable).
   - **Local**: If the device driver corresponding to the device has been loaded manually to .AV Framework, a disk icon is shown

2. Navigate to and select the desired device model in the provided table.
    - Use the **Search** field to only display devices matching the provided search term(s).
    - Use the controls at the bottom of the table to navigate through the available models.
    - Use the filter controls in each table header to filter the table data. Select the filter clear button to clear any filter data that is retained.
3. Enter a descriptive name for the device in the **Device Name** text field.
4. Select **Next**. Additional information and settings (if applicable) for the device are displayed.

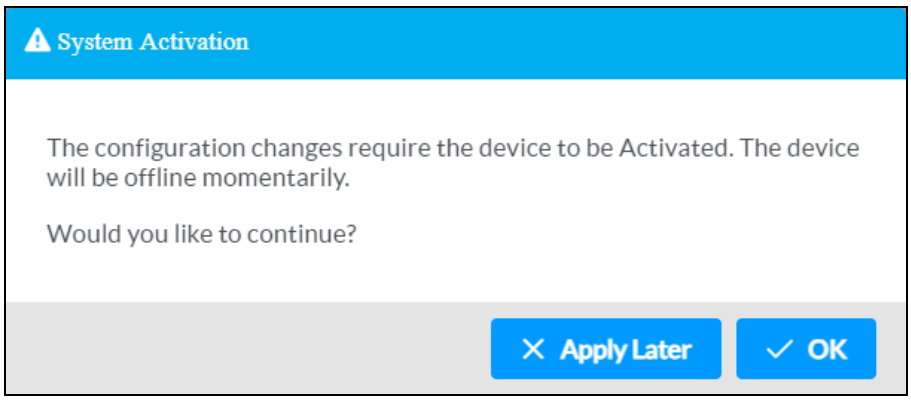
    NOTE: If a third-party device was selected, its driver is imported from the cloud and installed into the .AV Framework system automatically.

5. Enter any additional settings for the device in the appropriate fields (if required), including the transport control details.

    NOTES:

    - Certain device types and models require additional information to be entered (such as setting transport control details). Additional drop-down menus and text fields are provided when these device types and/or models are selected. For a complete list of additional fields, refer to Appendix B: Device Configuration on page 117.
    - Certain device drivers require custom configuration parameters—such as a screen ID, MAC address, or passcode—for connection. The **Add New Device** dialog box provides an information icon next to custom parameters that explains how to configure them. Some drivers also include a **Configuration Instructions** section that provides detailed setup instructions for the device.

6. Select **Save**. If required by the device, a **System Activation** dialog box is displayed asking whether the should be activated.



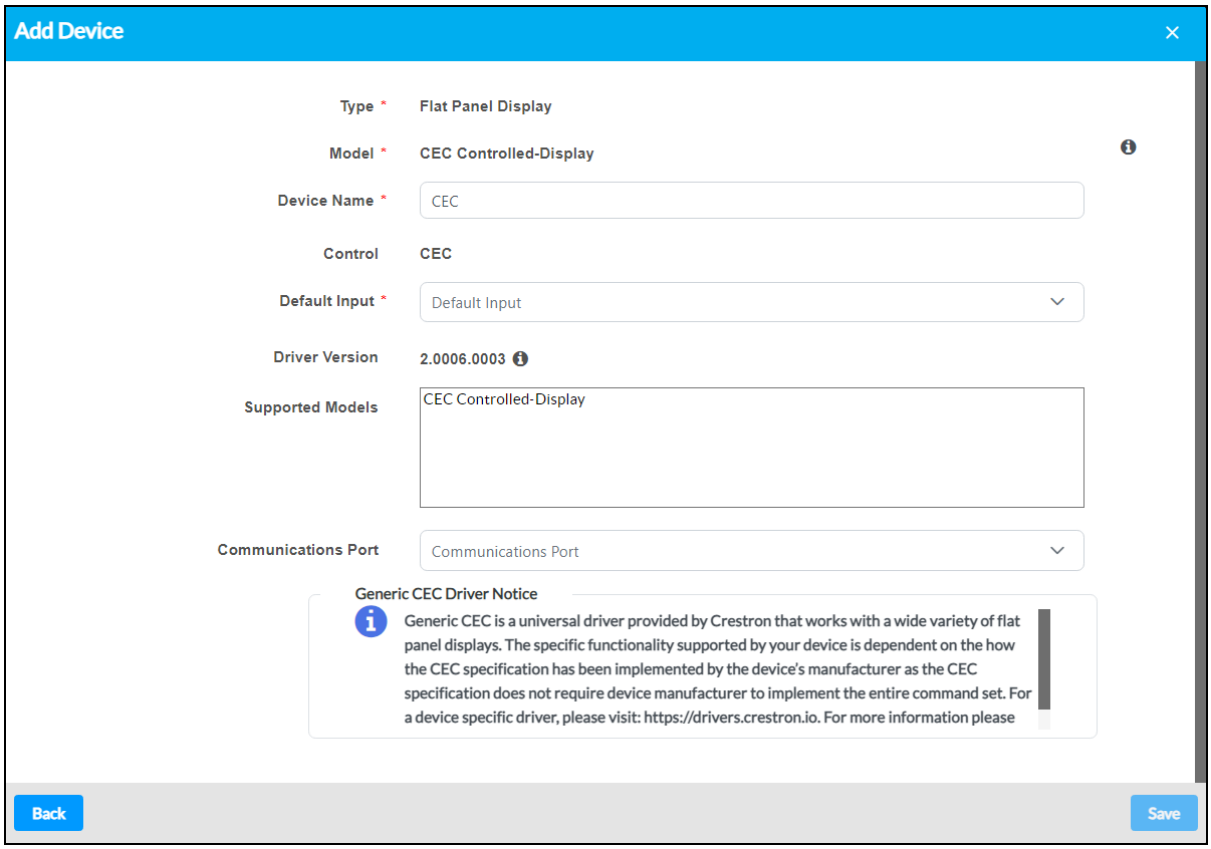
7. Select **OK**. The goes offline to begin the activation process.

The device is added to the list of devices on the **Manage Devices** accordion.

Add CEC and Crestron Connected Devices

When adding a CEC-controlled device or a Crestron Connected® device is added, a notice is displayed within the **Add Devices** dialog box that should be reviewed prior to adding the device. The notice for CEC drivers is shown below as an example.

Add Device Dialog Box - Generic CEC Driver Notice

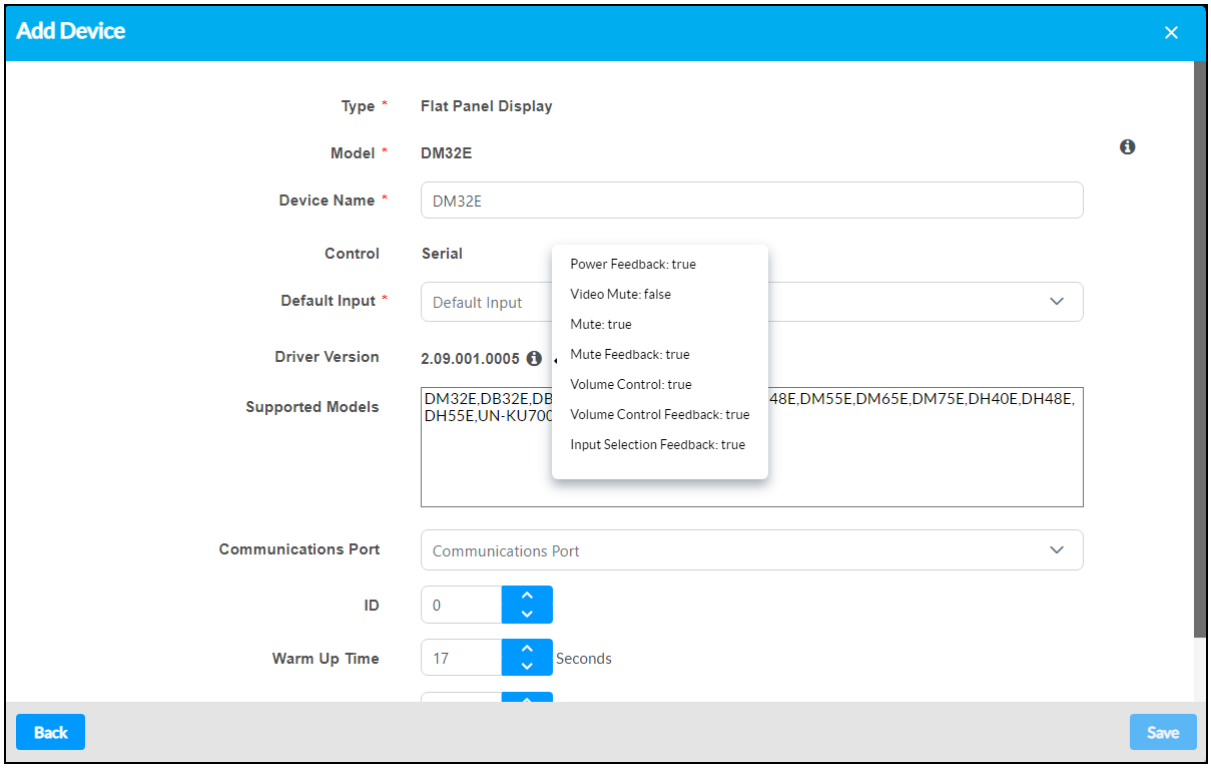


Add Flat Panel Displays or Projectors

Supported driver features are provided after selecting the projector or display model in the **Add Device** dialog box. Hover over the information icon ⓘ next to the driver version to display the supported driver features.

> **NOTE:** Certain device drivers require a username and password to initiate control communications. Additional **User Name** and **Password** fields are provided in the **Add Device** dialog box for these devices. These fields are required or optional depending on the device driver.

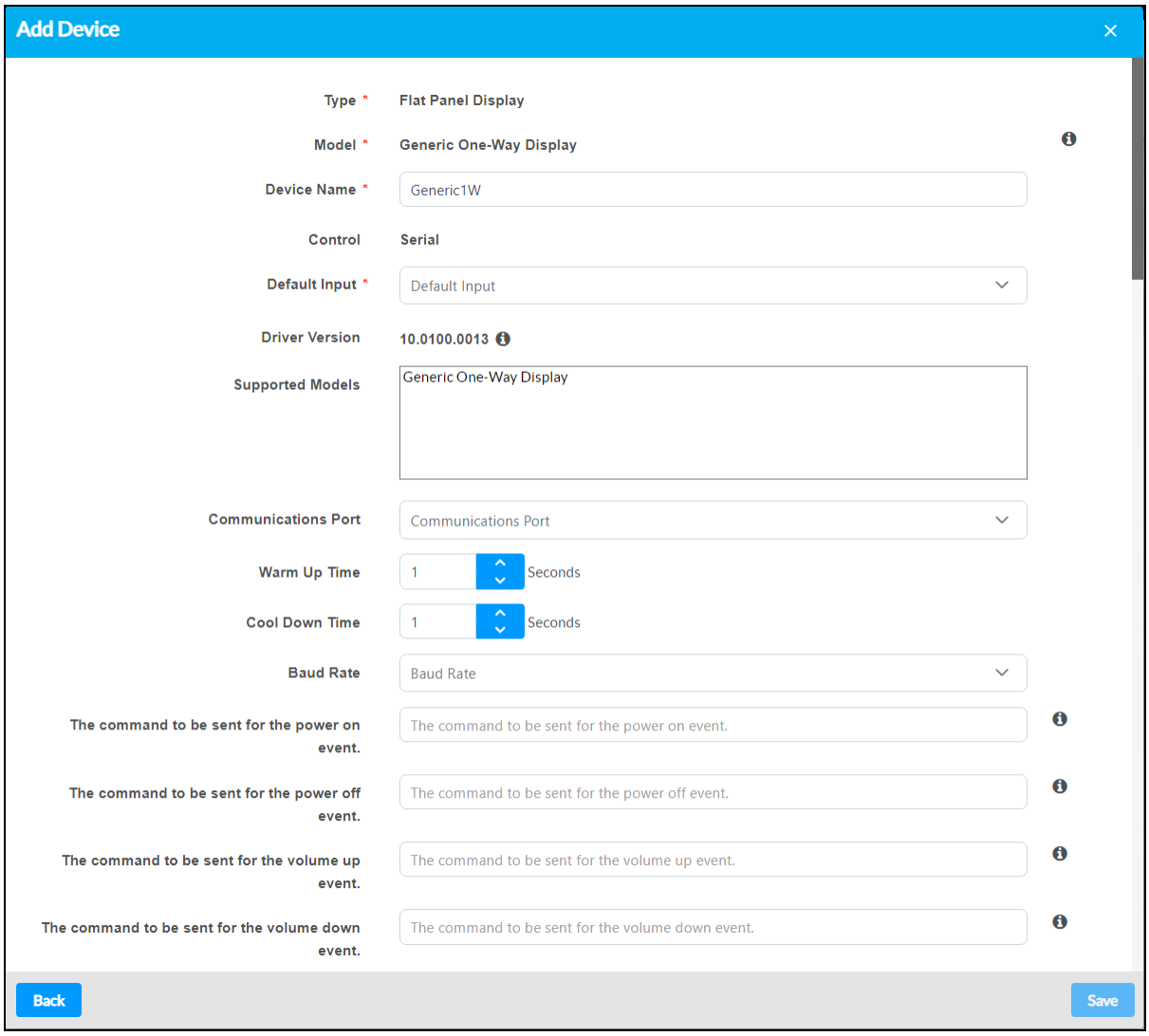
Add Device Dialog Box - Flat Panel Displays and Projectors (Driver Features)



Add Generic Serial Drivers (Flat Panel Displays)

If a particular serial driver for a flat panel display device is not available from the Crestron Drivers portal, **Crestron Generic One-Way** can be selected for the device model using the **Add Device** dialog box.

Add Device Dialog Box – Crestron Generic One-Way



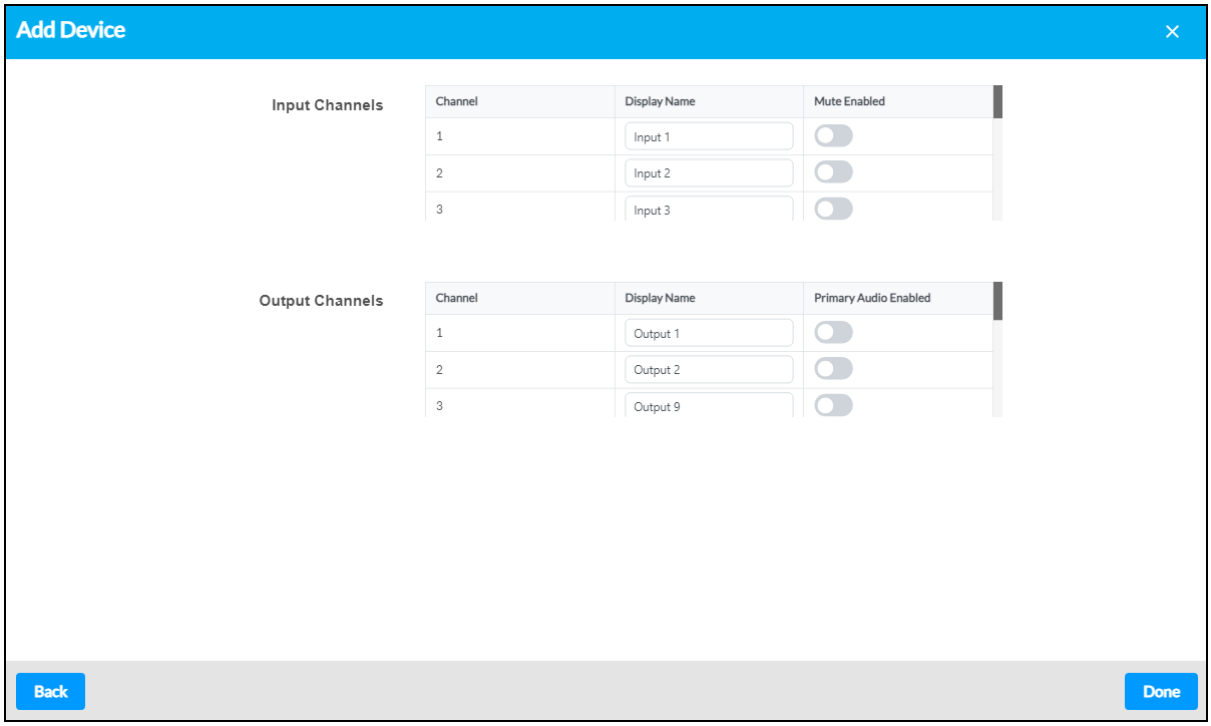
This generic serial driver allows custom API commands to be issued to a device so that it can be integrated within the .AV Framework system. The requisite API commands are commonly found in the manufacturer documentation for the device.

Add an Audio Mixer

As of .AV Framework version 6.27, supported audio mixers can be added to the .AV Framework system.

After selecting the desired device model from the **Add Device** dialog box, enter the required device information, and then select **Next**. Controls for configuring the audio mixer input and output channels are displayed.

Add Device Dialog Box - Audio Mixer Controls



The following settings can be configured for each input channel:

- **Display Name**: Enter a custom name for the input channel. The default input name is populated by the driver.
- **Mute Enabled**: Turn on the toggle to allow the input to be muted from .AV Framework. Any input channel not selected cannot be controlled from .AV Framework.

The following settings can be configured for each output channel:

- **Display Name**: Enter a custom name for the output channel. The default output name is populated by the driver.
- **Primary Audio Enabled**: Turn on the toggle to allow the output mute, volume, and gain settings to be controlled from .AV Framework. Any output channel not selected cannot be controlled from .AV Framework.

> **NOTE:** A maximum of two output channels can be selected for control. Once two output channels are selected, the **Primary Audio Enabled** toggle for all other output channels is grayed out and cannot be selected until an active channel is deselected.

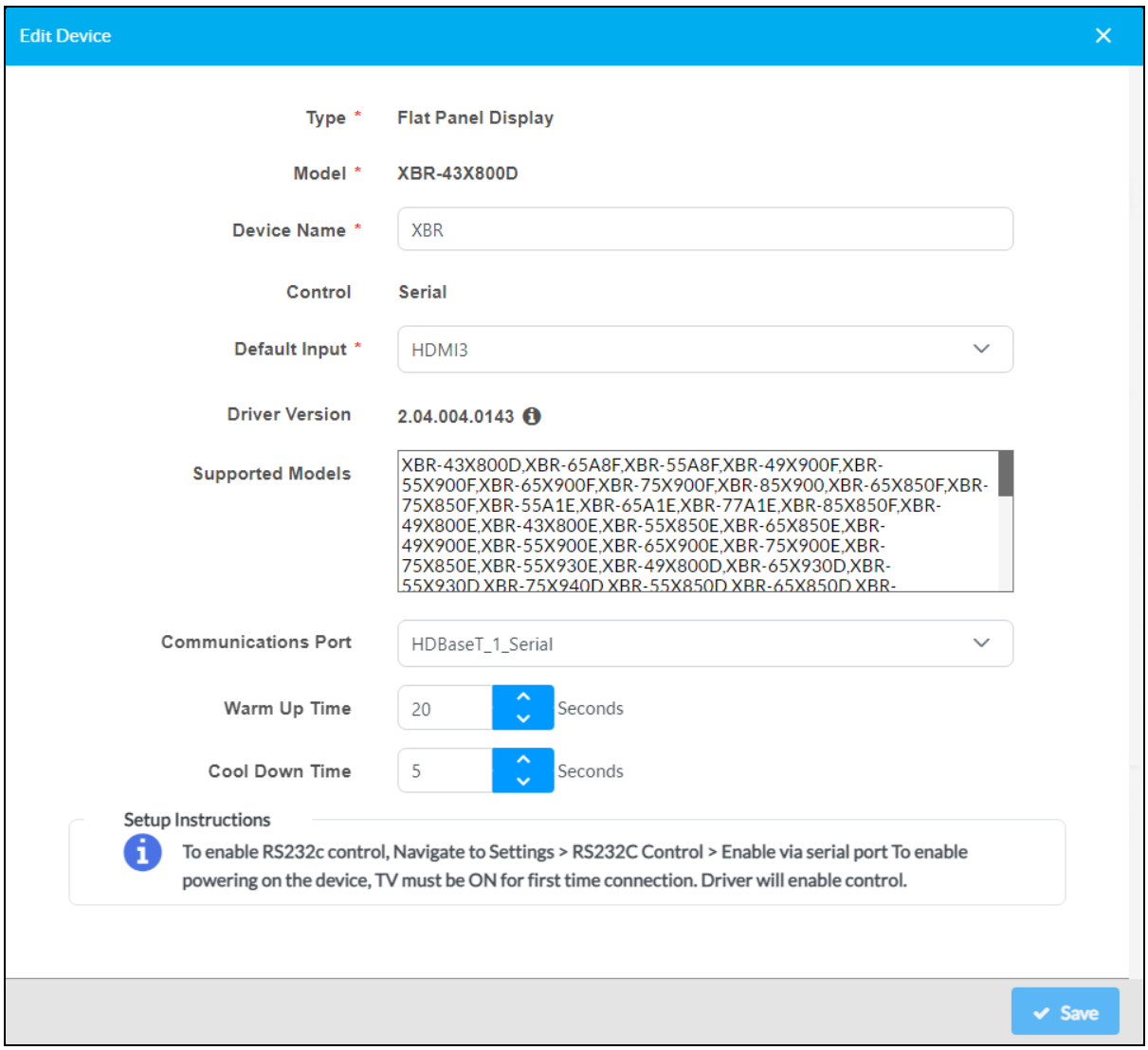
Select **Done** to save the device and return to the **Device Management** page.

Edit a Device

To edit a device that has been added to the **Manage Devices** table:

1. Select the edit button next to a device. The **Edit Device** dialog box opens.

   Edit Device Dialog Box



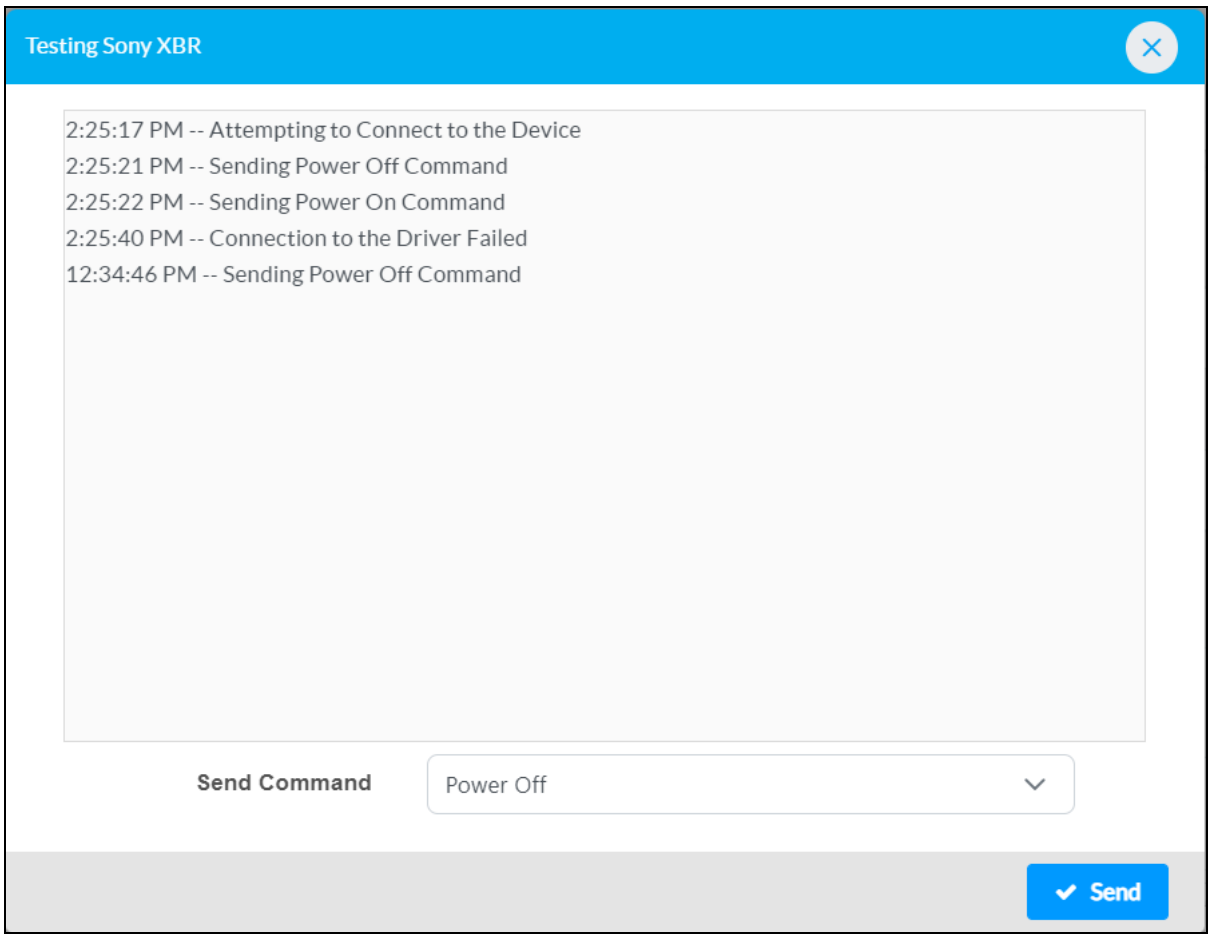
2. Use the **Edit Device** dialog box to edit the display name, transport details, and any other device settings provided for the chosen device.
3. Select **Save** to save any changes or select the **x** button to close the dialog box and to discard any changes.

Test a Device

To test a flat panel display or projector device that has been added to the **Manage Devices** table:

1. Select the test button next to a flat panel display or a projector to send test commands to the device. A dialog box showing the driver test status is displayed.

   Testing Device Dialog Box



2. To send test commands to the device, select a command from the **Send Command** drop-down menu, and then select **Send**. .AV Framework attempts to send the chosen command to the device.

   > **NOTE:** The configuration utility does not provide feedback about whether the command was sent successfully. Verify that the command was received on the device.

Delete a Device

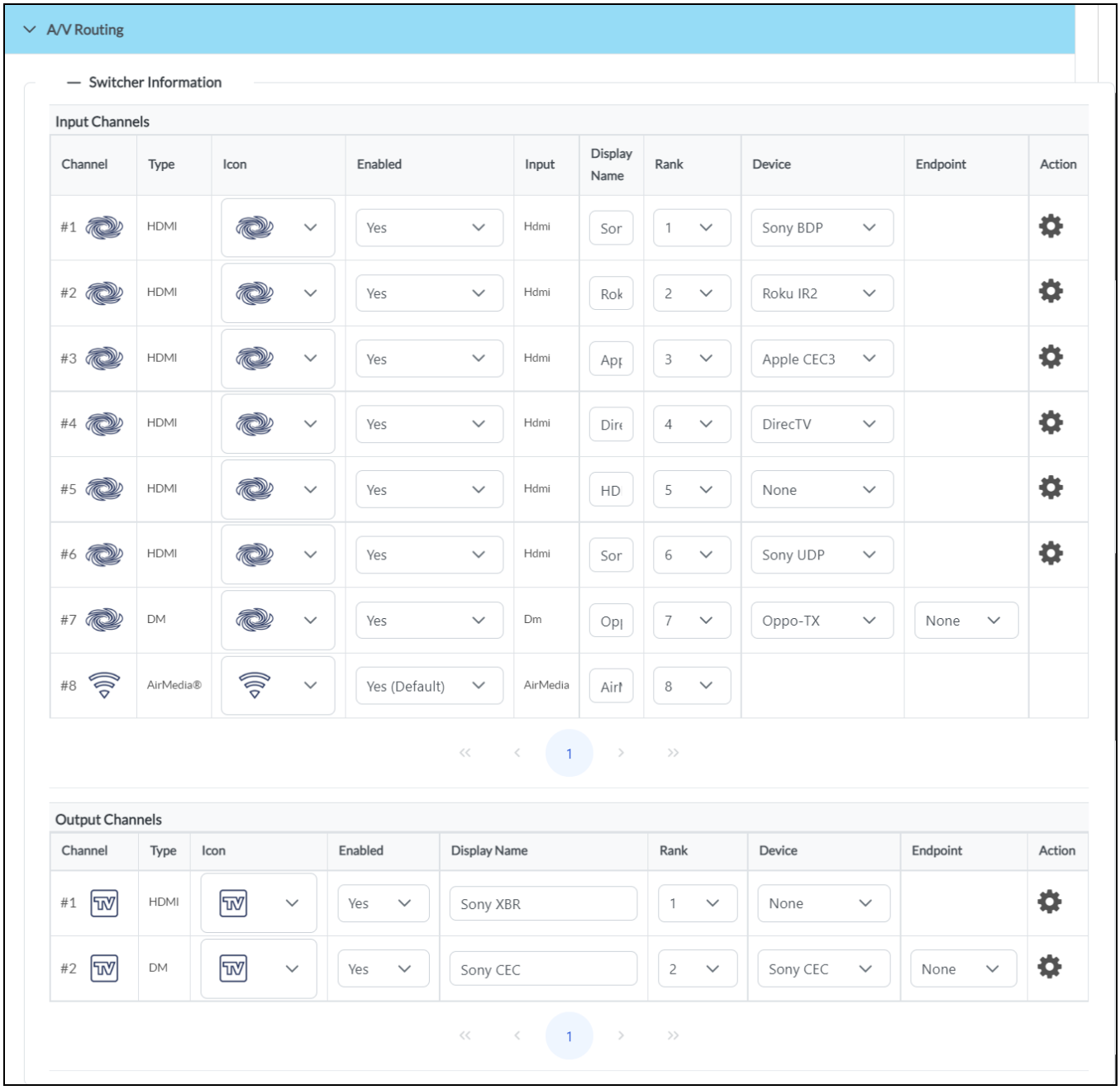
To delete a device that has been added to the **Manage Devices** table:

1. Select the trash can button next to a device.
2. A warning message is displayed. Select **OK** to delete the device or **Cancel** to cancel the deletion.

A/V Routing

Select the **A/V Routing** accordion to configure the input and output channels of the DMPS3 device.

A/V Routing Accordion



The following information can be viewed and configured for each input and output channel unless otherwise noted.

> **NOTE:** Input 9 on the DMPS3-4K-350-C and Input 8 on the DMPS3-4K-250-C are reserved for the device's internal AirMedia® presentation gateway. These channels are shown only if an AirMedia license has been purchased and activated for the device.

For more information on activating a purchased AirMedia license, refer to the DMPS3-4K-250-C/DMPS3-4K-350-C Quick Start.

- **Channel**: This column shows the number of the input or output channel on the switcher device and the chosen icon for that channel.
- **Type**: This column shows the type of input or output channel (such as HDMI® input, DM® input, or VGA).
- **Icon**: Use the drop-down menu to select an icon for the channel.
- **Enabled**: Use the drop-down menu to turn the channel on or off for the .AV Framework system:
  - Select **Yes** to turn the channel on for the .AV Framework system. Channels are turned on by default. A channel that is turned on can be selected from the source routing page in the touch screen user interface.
  - Select **No** to turn the channel off for the .AV Framework system. A channel that is turned off is hidden from the source routing page.
  - Select **Yes (Default)** to turn the channel on and to make it the default source route for the .AV Framework system. This channel will be selected by default on the source routing page.
- **Input (Inputs Only)**: This column shows the input name.
- **Display Name**: Enter the display name of the device connected to the channel.
- **Rank**: Use the drop-down menu to select a number to determine the order that the input or output displays appear when selecting a source to present from the touch screen user interface.
- **Device**: Use the drop-down menu to select the device connected to the channel. (For more information on adding devices to .AV Framework, refer to Configuration on page 15.)
- **Endpoint (DM Channels Only)**: Use the drop-down menu to select a connected DM endpoint for the channel.

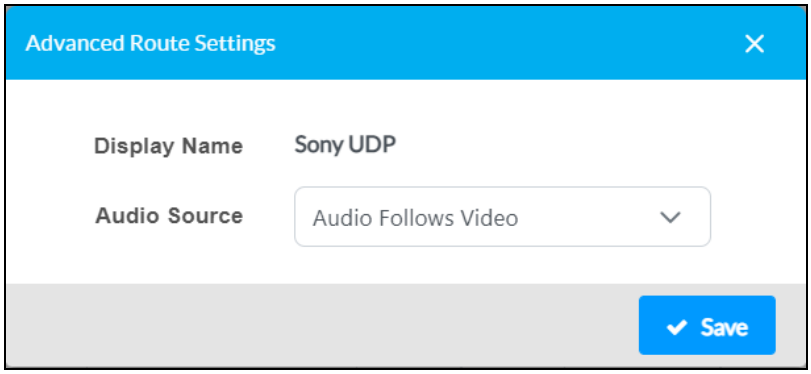
> **NOTE:** The **Device** and **Endpoint** fields are not configurable for the internal AirMedia input on the DMPS3-4K-250-C and DMPS3-4K-350-C.

Each HDMI or DM output channel also has a gear icon ⚙ within its **Action** column in the **Output Channels** section, and certain DMPS3 models have a gear icon within the **Action** column of all supported inputs in the **Input Channels** section.

Advanced Route Settings (Inputs)

Select the gear icon ⚙ next to a supported input channel to open the **Advanced Route Settings** dialog box.

Advanced Route Settings Dialog Box (Inputs)



The following settings can be configured:

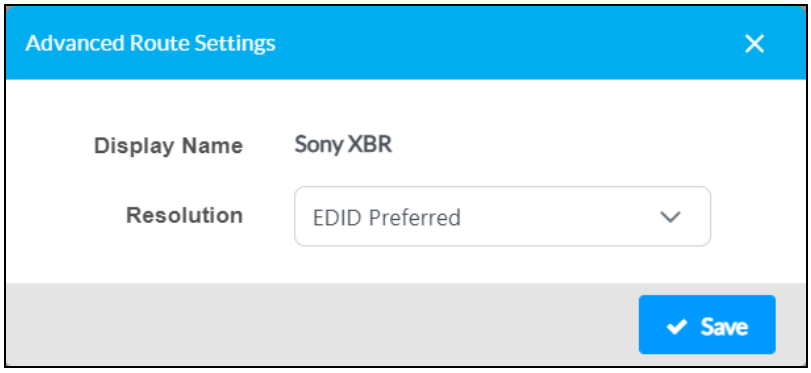
- **Display Name**: The name of the input channel
- **Audio Source**: Sets the audio source behavior for the selected input channel. When selecting an analog audio, the audio of the analog input is mixed with the video and routed to the selected output.
  - **Audio Follows Video**: The audio signal follows the video signal that is routed to the input.
  - **Analog Audio 1–4**: The audio source for the selected **Audio** input is routed to the input channel. (DMPS3-4K-50/DMPS3-4K-100-C/DMPS3-4K-150-C only)
  - **AUD IN 1–5**: The audio source for the selected **AUD IN** input is routed to the input channel. (DMPS3-4K-250-C/DMPS3-4K-350-C only)
  - **Line 1–2**: The audio source for the selected **Line** input is routed to the input channel.
  - **Aux**: The audio source for the **Aux** input is routed to the input channel.

Select **Save** to save any changes or select the **x** button to close the dialog box and to discard any changes.

Advanced Route Settings (Outputs)

Select the gear icon next to an output channel to open the **Advanced Route Settings** dialog box

Advanced Route Settings Dialog Box (Outputs)



The following settings can be configured:

> **NOTE:** For more information regarding advanced routing behavior and use cases, refer to Appendix C: Advanced Routing Behavior and Use Cases on page 130.

- **Display Name**: The name of the output channel
- **Video Routing Mode**: Set the video routing behavior for the output channel:

  > **NOTE:** Output 1 supports user-selected routes only. Fixed routes and follow routes are supported on other video output channels only.

  - **User Selected**: The video source selected manually by the user is routed to the output channel.
  - **Fixed**: Video is routed to the output channel from a fixed input channel after the first manual route is created on the system.
  - **Follow**: Video is routed to the output channel from another output channel configured for manual routing. For example, if a user manually routes Input 1 to Output 1 and Output 2 is set to follow Output 1, Input 1 is also shown on Output 2.
- **Fixed Route**: If **Video Routing Mode** is set to **Fixed**, select the input channel that is routed to the selected output channel.
- **Follows Route**: If **Video Routing Mode** is set to **Follow**, select the output channel that is routed to the selected output channel.
- **Resolution**: (HDMI Outputs Only) Sets the default resolution of the outputted video signal.

> **NOTE:** The DMPS3-200-C, DMPS3-300-C, and DMPS3-300-C-AEC switchers use autoswitching behavior for port configuration and audio/video routing, which overrides any input or output configurations set in .AV Framework.

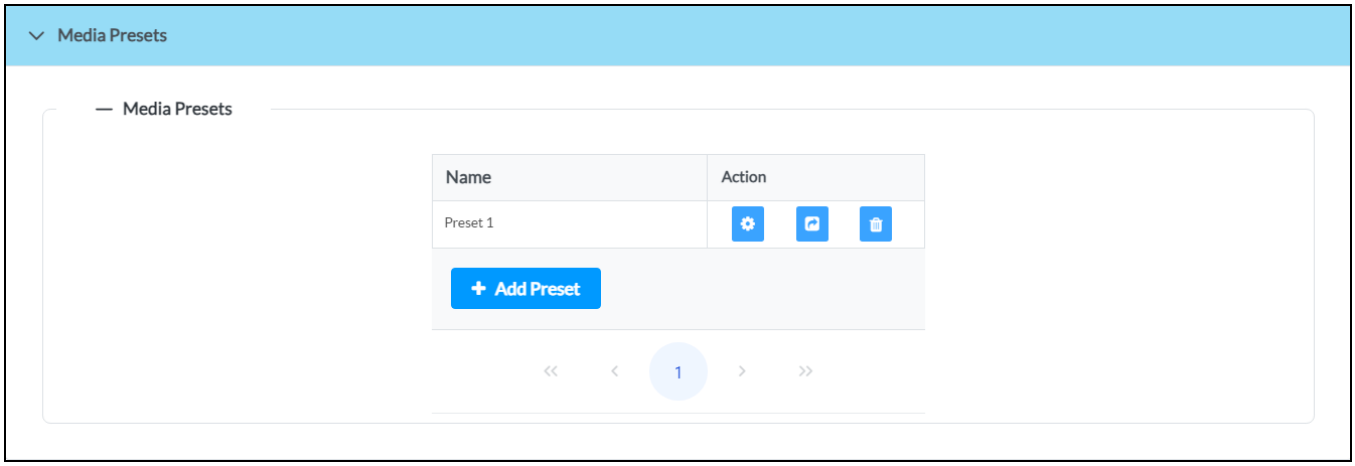
Select **Save** to save any changes or select the **x** button to close the window and to discard any changes.

Media Presets

Select the **Media Presets** accordion to configure media presets for source routing.

> **NOTE:** The **Media Presets** accordion is available only if using a DMPS3 device that supports multiple outputs.

Media Presets Accordion



Media presets allow users to select common routing configurations within the .AV Framework system from the touch screen project or a connected button panel. For more information, refer to Media Routing Presets Screen Overview on page 92 and MPC3/MP-B10/MP-B20 on page 104.

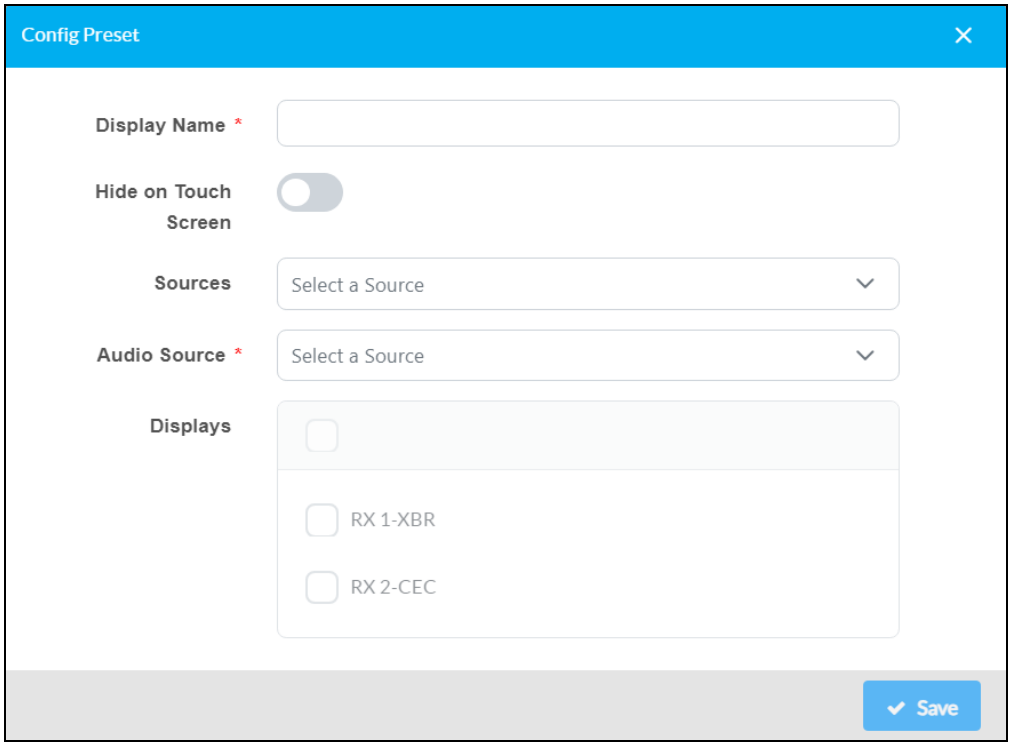
The **Media Presets** accordion lists all media presets that have been added to the .AV Framework system in table format. Up to 9 media presets can be added per system. An **Actions** column provides the following controls for each media preset:

- Select the gear button to edit the media preset.
- Select the test button to recall the media preset in real time.
- Select the trash can button to delete the media preset.

Select **Add Preset** to add a new media preset. The **Config Preset** dialog box is displayed.

> **NOTE:** If the .AV Framework system configuration is changed to only use a single output, no new media presets can be added, and existing media presets cannot be edited until multiple outputs are configured for the system. A message window is shown indicating this issue if media presets have already been added to the system.

Config Preset Dialog Box



Enter the following information for the media preset:

- **Display Name**: Enter a name for the preset that will be displayed in the touch screen project.
- **Hide on Touch Screen**: Turn on the toggle to hide the preset from the touch screen project.

  > **NOTE:** If all media presets in the system are hidden from the touch screen project, then the **Presets** button will not be shown in the touch screen UI.

- **Sources**: Select the video source(s) that will be routed to the selected display(s).
- **Audio Source**: Select the audio source that will be selected for the .AV Framework room.

  > **NOTE:** Audio source selections are limited based on the chosen video source(s) and by how audio routing is configured for the .AV Framework system. For more information, refer to A/V Routing on page 64.

- **Displays**: Fill the check box next to each display that will output the selected video and audio sources.

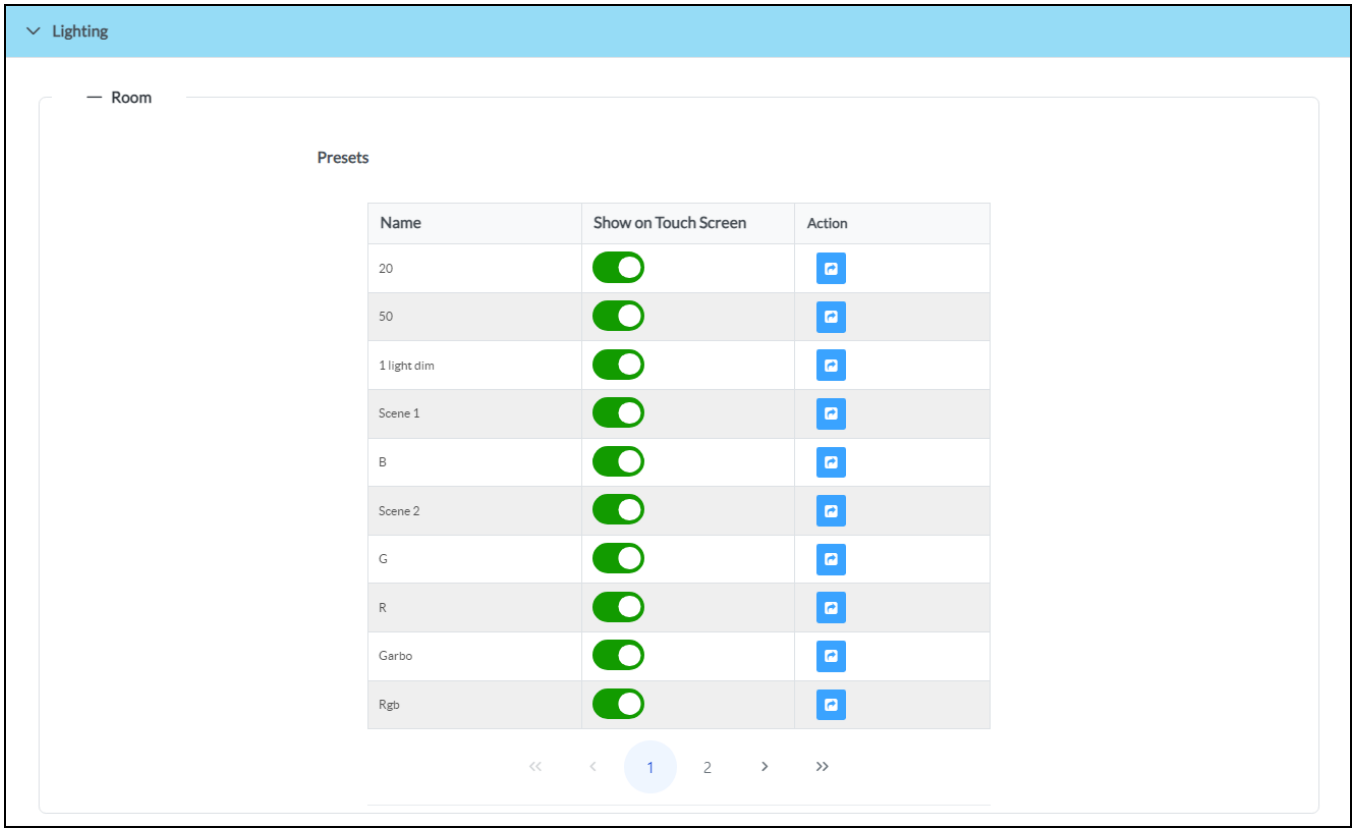
Select **Save**. The new media preset is added to the table in the **Media Presets** accordion.

Lighting

Select the **Lighting** accordion to configure preset lighting scenes for the .AV Framework room.

> **NOTE:** The **Lighting** accordion is available only if a supported platform (lighting) driver has been added to the .AV Framework system. For more information on adding devices, refer to Manage Devices on page 54.

Lighting Accordion



Lighting presets allow users to select configured lighting scenes on a configured platform device from the touch screen project or a connected button panel. For more information, refer to Lighting Screen Overview on page 93 and MPC3/MP-B10/MP-B20 on page 104.

> **NOTE:** Lighting presets are configured on the platform device and not within .AV Framework. Refer to the documentation for your platform device for more information on configuring lighting presets.

The **Lighting** accordion lists all lighting presets that have been configured on the platform device in table format. The following controls are provided for each lighting preset:

- Turn on the **Show on Touch Screen** toggle to show the lighting preset on the touch screen project. The preset will be hidden from the project if this toggle is turned off.
- Select the test button in the **Actions** column to recall the lighting preset in real time.

Operation

The .AV Framework touch screen user interface provides a collection of room scheduling and BYOD (bring your own device) presentation capabilities. The various screens that comprise the user interface are described in the sections that follow.

> **NOTE:** If using a custom Crestron HTML5 User Interface project, the styling, layout, and functions for the project are defined by the UI programmer. For more information, refer to the Crestron® HTML5 User Interface Developer Microsite.

Display Overview

Each screen in the .AV Framework touch screen project provides the following features:

- A status bar that provides the time and date (set using the web-based configuration utility).
- A footer bar that provides buttons for navigating and controlling the system volume (if supported by the display device or the external amplifier).

The user interface theme can be set to the AVF 3.0 UI (Crestron Construct), AVF 2.0 UI (CH5), AVF 2.0 UI (Smart Graphics), or AVF 1.0 UI (Smart Graphics). All themes except for AVF 3.0 UI are considered legacy themes.

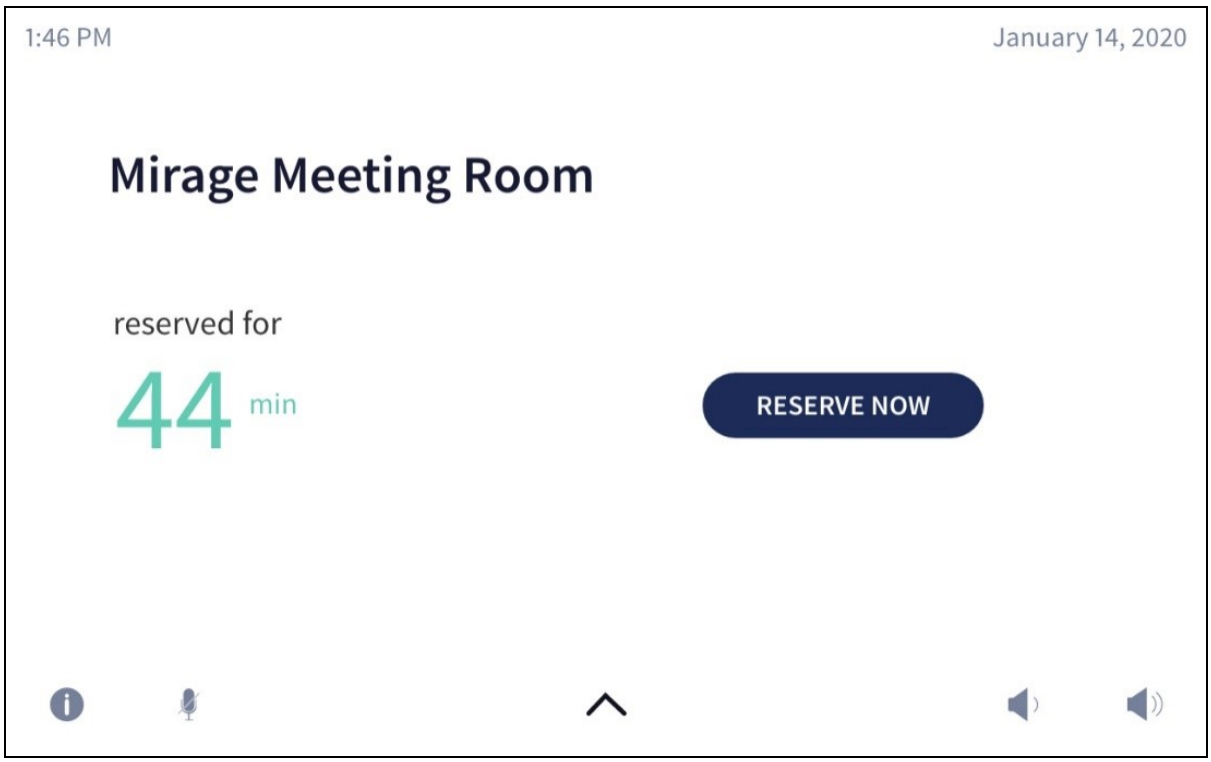
> **NOTE:** The AVF 2.0 UI (CH5) and AVF 3.0 UI (Crestron Construct) themes are not compatible with TSW-52 series touch screens.

For more information on selecting themes, refer to Touch Screen Custom Graphics on page 41.

> **NOTE:** The images in this section show the AVF 2.0 UI theme. The same features are provided for the AVF 3.0 UI and AVF 1.0 UI themes, but the layout of some of these features may differ between the themes. Any differences are described in this document.

The following image shows a typical home screen (the project's default page):

Home Screen (Room Available) - Status and Footer Bars



The footer bar provides the same buttons regardless of which screen is selected. Refer to the following tables for more information on footer button functionality.

Navigation Buttons (AVF 1.0 UI)

	The home button navigates to the home screen.
	The present button navigates to the present screen.

Navigation Buttons (AVF 2.0 UI and AVF 3.0 UI)

	The more button navigates to the selection screen.
	The info button navigates to the information screen.

Volume Control Buttons (AVF 1.0 UI)

	The microphone button mutes or unmutes the device microphone.
	The mute button mutes or unmutes the device volume.
	The volume lower button lowers the device volume incrementally.
	The volume raise button raises the device volume incrementally.

Volume Control Buttons (AVF 2.0 UI and AVF 3.0 UI)

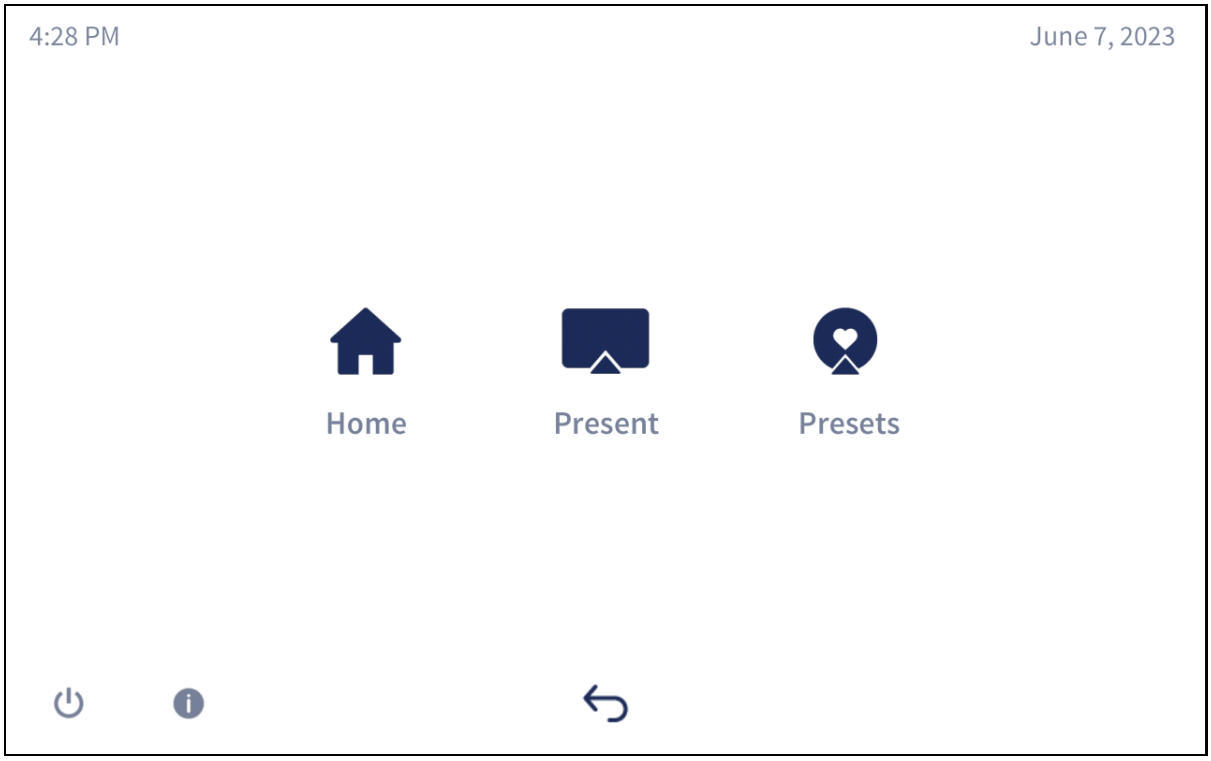
	The microphone button mutes or unmutes the device microphone.
	The mute button mutes or unmutes the device volume.
	The volume lower button lowers the device volume incrementally.
	The volume raise button raises the device volume incrementally.

NOTE: The volume control buttons and the volume bar are visible only if the controlled audio output is set to program with the amplifier turned on or set to a display that supports volume control. For more information, refer to System Settings on page 34.

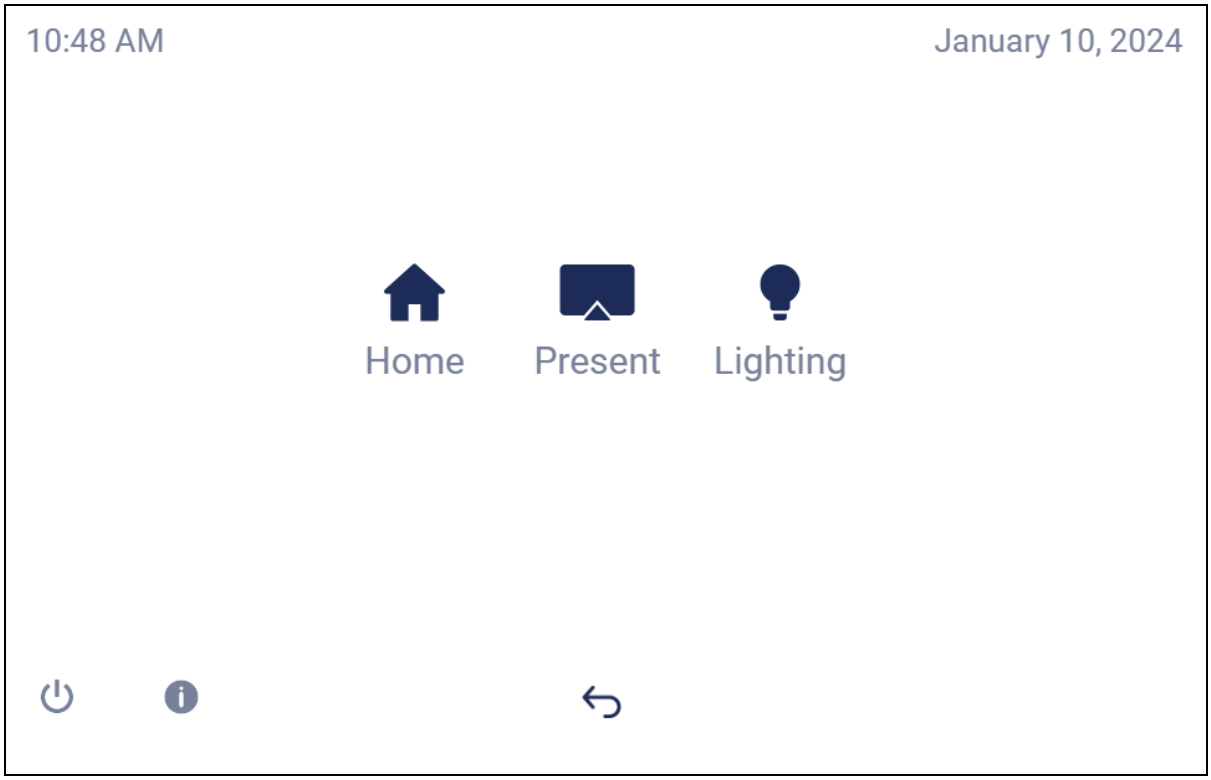
Selection Screen

Tap the more button ^ on the footer bar to display the selection screen.

Selection Screen Example (AVF 2.0 UI)



Selection Screen Example (AVF 3.0 UI)



This screen is used to navigate to various screens in the user interface:

- Tap **Home** to navigate to the home screen.
- Tap **Present** to navigate to the present screen.
- Tap **Presets** to navigate to the media presets screen.
- Tap **Lighting** to navigate to the lighting presets screens.

  > **NOTE:** The **Presets** button is shown only if media presets have been configured for the .AV Framework system and are not hidden from the touch screen project. The **Lighting** button is shown only if lighting presets have been configured for the .AV Framework system and are not hidden from the touch screen project. For more information, refer to Media Presets on page 67 and Lighting on page 70.

- Tap the back button to return to the previous screen.

Home Screen Overview

The home screen is the default screen of the touch screen project. The home screen indicates whether the associated room is either available or reserved for meetings (if .AV Framework is connected to a scheduling calendar):

- If the room is available, the home screen allows an ad hoc meeting to be reserved from the touch screen.
- If the room is reserved, the home screen shows current meeting information and the time remaining in the meeting.

If .AV Framework is not connected to a scheduling calendar, the home screen shows a custom logo (if turned on) or the date and time and provides a button that is used to switch to the system's default route.

The home screen can be accessed at any time by tapping **Home** on the selection screen (AVF 2.0 UI and AVF 3.0 UI) or by tapping the home button on the footer bar (AVF 1.0 UI).

No Scheduling Calendar Connected

If .AV Framework is not connected to a scheduling calendar, the home screen provides the following information:

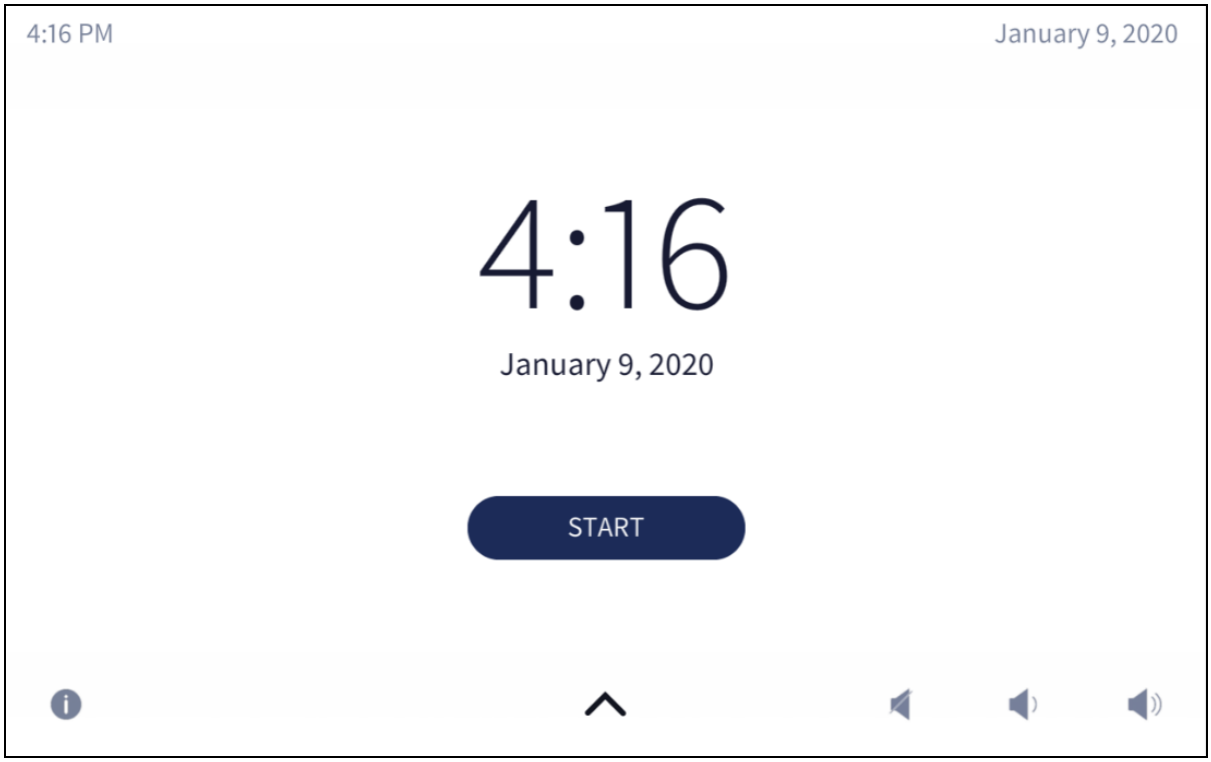
- A custom logo (if turned on through the configuration utility)
- The time and date (if no custom logo is turned on)
- A **START** button that switches to the system's default route automatically (For more information on setting the system's default route, refer to A/V Routing on page 64.)

  > **NOTE:** The **START** button text can be customized using the configuration utility. For more information, refer to Touch Screen Custom Graphics on page 41.

- A **Help** button that provides more information on the functions of this screen (AVF 1.0 UI). The information button in the footer provides the same function for the AVF 2.0 UI and AVF 3.0 UI.

The following image shows a typical home screen when .AV Framework is not connected to a scheduling calendar.

Home Screen (No Scheduling Calendar Connected)



NOTE: If a custom help page image has been configured for the touch screen project, it will be displayed instead of the default help overlay when the information or help button is tapped. For more information, refer to Touch Screen Custom Graphics on page 41.

Room Available

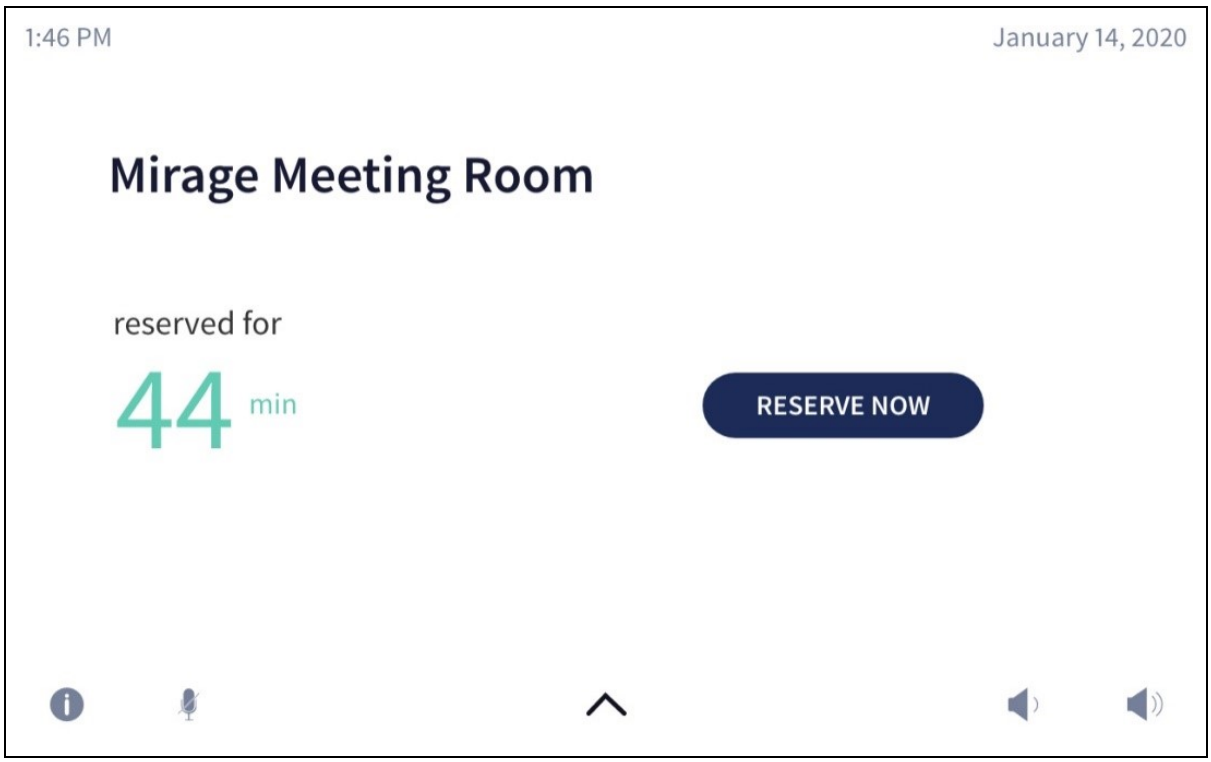
If .AV Framework is connected to a scheduling calendar and the room is available, the home screen provides the following information:

- The time remaining (in minutes) until the next scheduled meeting occurs
- The name, organizer, and duration of the next scheduled meeting (AVF 1.0 UI)

  NOTE: This information is obtained in the AVF 2.0 UI and AVF 3.0 UI by tapping the information button .
- A **RESERVE NOW** button that allows an ad hoc meeting to be scheduled through the touch screen
- A **Help** button that provides more information on the functions of this screen (AVF 1.0 UI). The information button in the footer provides the same function for the AVF 2.0 UI and AVF 3.0 UI.

The following image shows a typical home screen when the room is available.

Home Screen (Room Available)

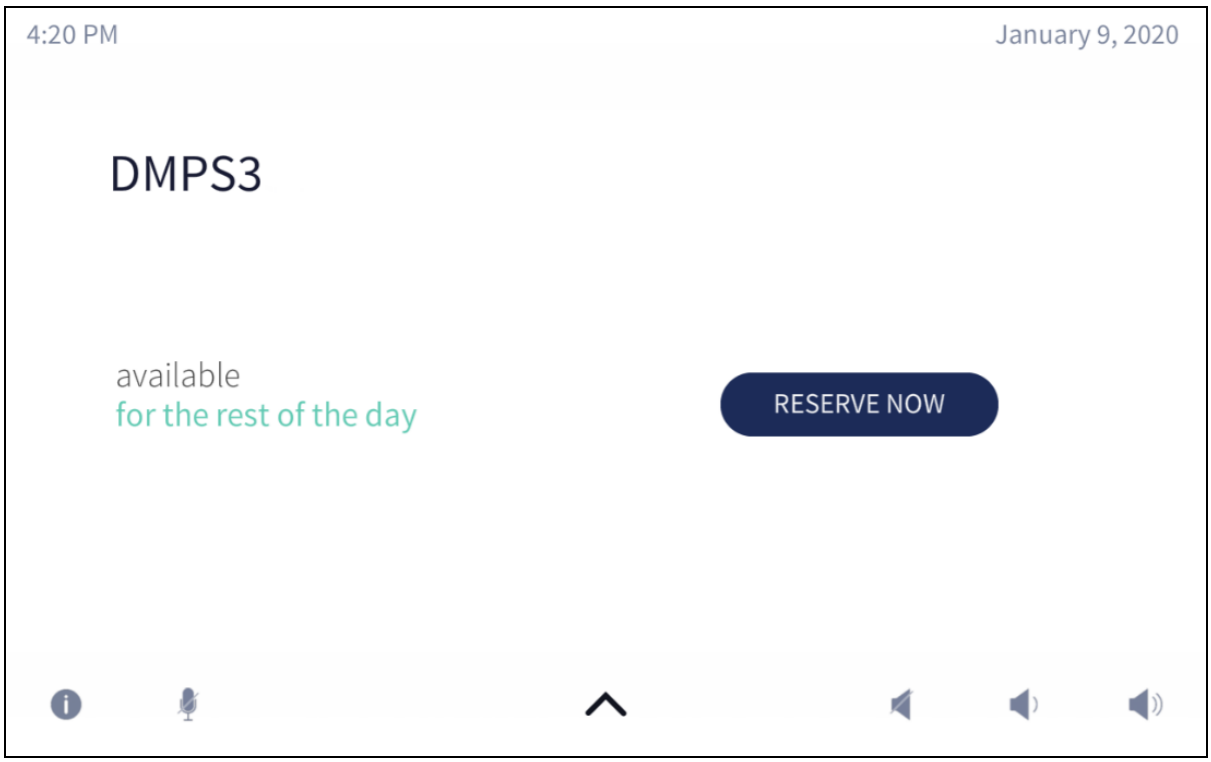


If the room is available for the rest of the day, the home screen provides the following information:

- A **RESERVE NOW** button that allows an ad hoc meeting to be scheduled through the touch screen
- A **Help** button that provides more information on the functions of this screen (AVF 1.0 UI). The information button in the footer provides the same function for the AVF 2.0 UI and AVF 3.0 UI.

The following image shows a typical home screen when the room is available for the rest of the day.

Home Screen (Room Available for the Rest of the Day)



Room Reserved

If the room is not available, the home screen provides the following information:

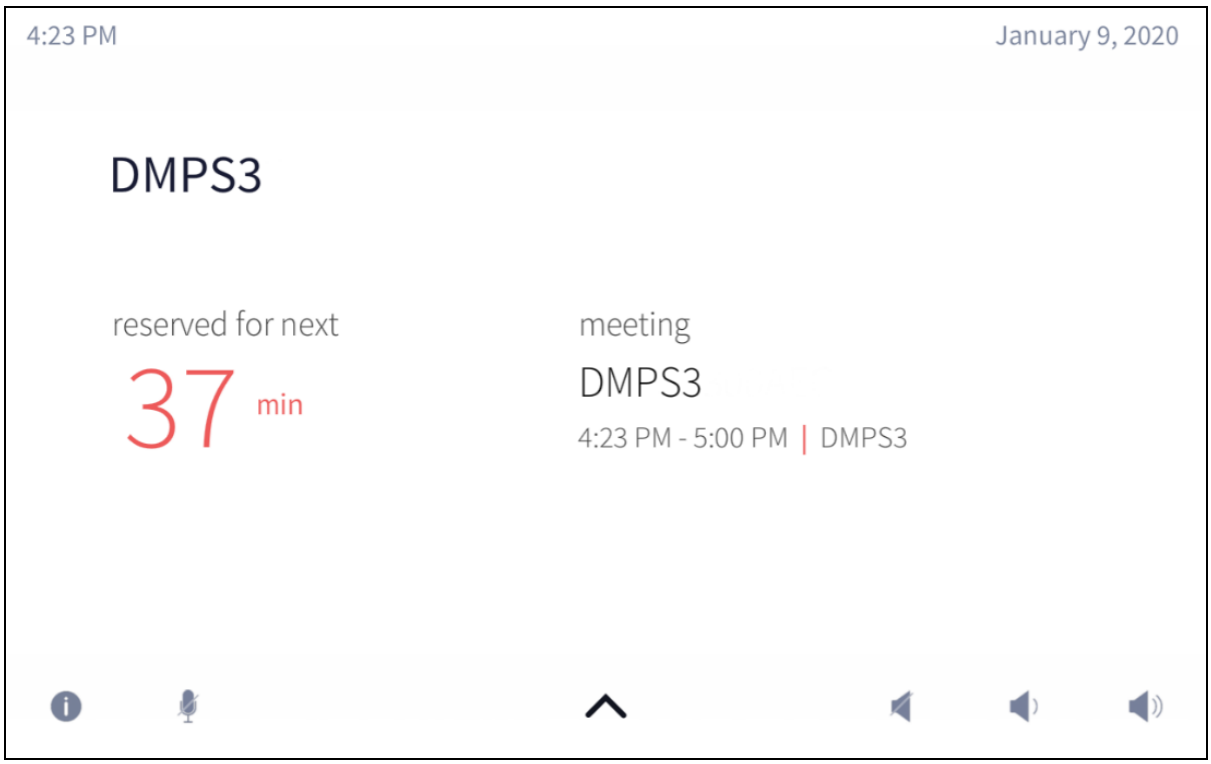
- The time remaining (in minutes) until the current meeting ends
- The name, organizer, and duration of the scheduled meeting (AVF 1.0 UI)

  > **NOTE:** This information is obtained in the AVF 2.0 UI and AVF 3.0 UI by tapping the information button .

- The duration and name of the scheduled meeting
- A **Help** button that provides more information on the functions of this screen (AVF 1.0 UI). The information button in the footer provides the same function for the AVF 2.0 UI and AVF 3.0 UI.

The following image shows a typical home screen when the room is reserved.

Home Screen (Room Reserved)

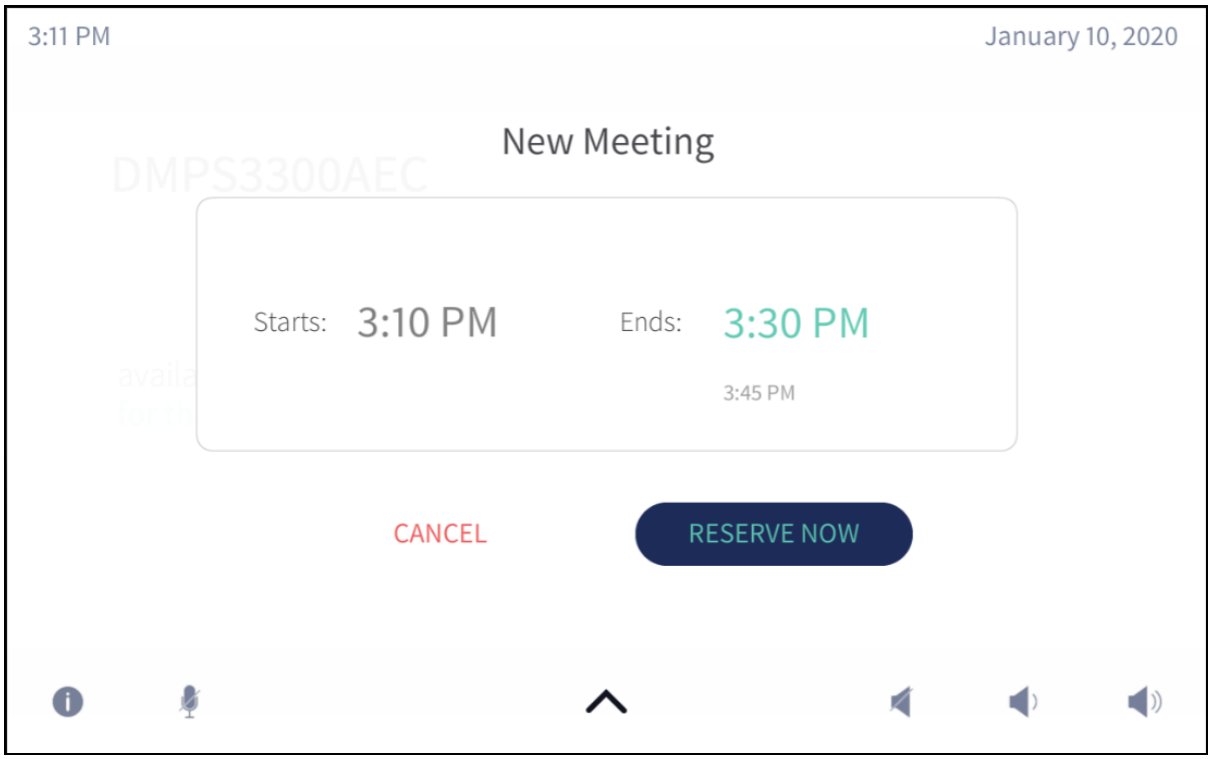


Reserve a Meeting from the Home Screen

To reserve an ad hoc meeting from the home screen when the room is available:

1. Tap **RESERVE NOW** on the home screen. The new meeting screen is displayed.

   New Meeting Screen



2. Tap one of the available meeting end times to set the duration of the meeting. The room can be reserved for up to three lengths:
   - Until the current half hour interval ends (If the current time is 10:17 AM, the end time for this option is 10:30 AM.)
   - Until the current half hour interval ends plus 30 minutes (If the current time is 10:17 AM, the end time for this option is 11:00 AM.)
   - Until the current half hour interval ends plus 60 minutes (If the current time is 10:17 AM, the end time for this option is 11:30 AM.)

   > **NOTE:** These options are available only if a meeting is not already scheduled during that time frame.

3. Tap **RESERVE NOW** to reserve the meeting.

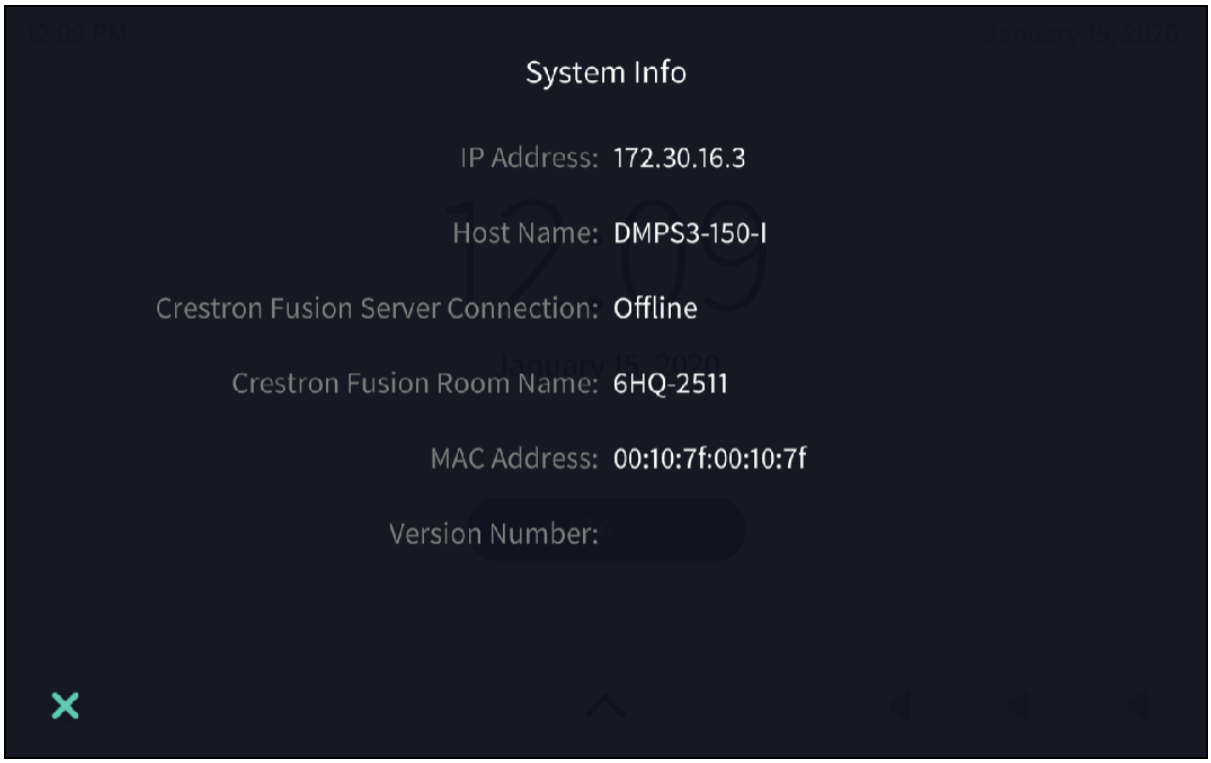
To discard the reservation, tap **CANCEL**.

Access the System Info Screen

To access the **System Info** screen, tap and hold the **Help** or information button on the home screen for 20 seconds.

The **System Info** screen provides the device IP address, the device host name, the Crestron Fusion server connection status, the Crestron Fusion room name, and the device MAC address.

System Info Screen



To exit the **System Info** screen and return to the home screen, tap the **x** button on the bottom right of the screen.

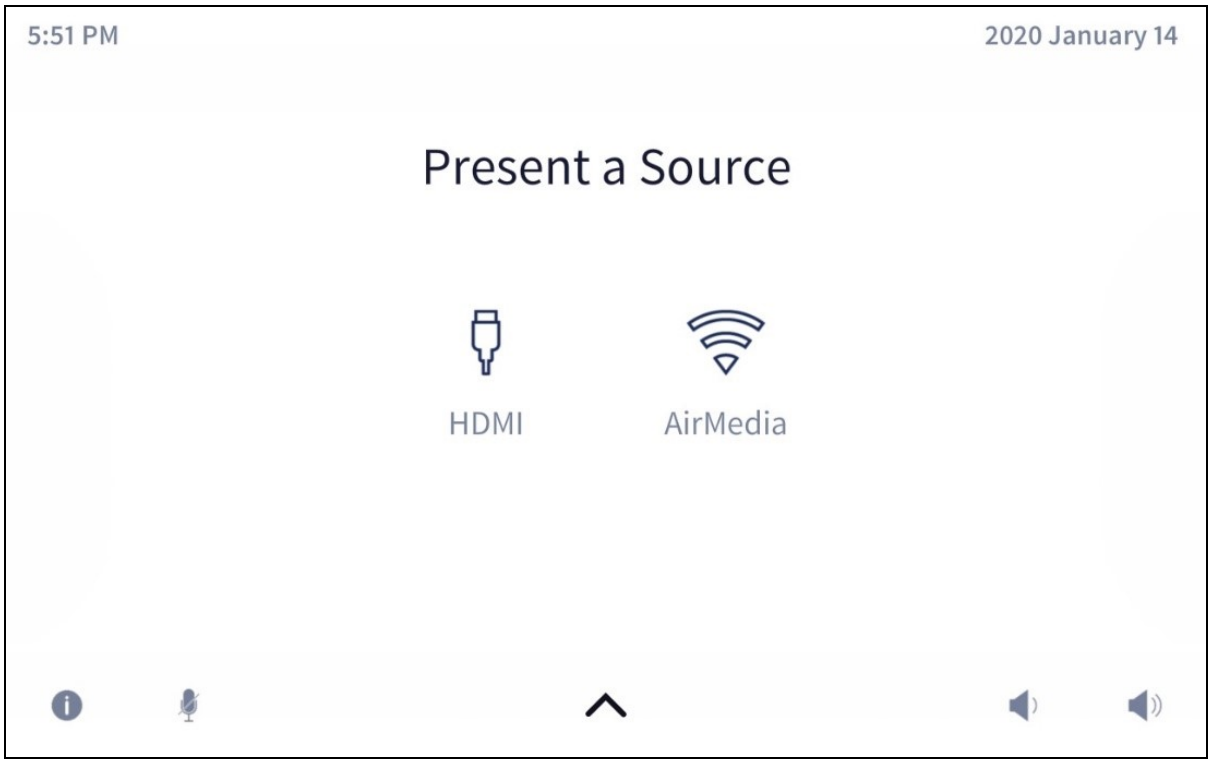
Present a Source Screen Overview

The **Present a Source** screen allows content to be routed from a connected device to displays across the .AV Framework system.

Present a Source Screen – Single Display

If the DMPS3 device is configured to use a single display, the **Present a Source** screen appears as shown in the following image.

Present a Source Screen (Single Display)



Select one of the available presentation options to route the selected source to the main display. The source is controlled directly through the touch screen project.

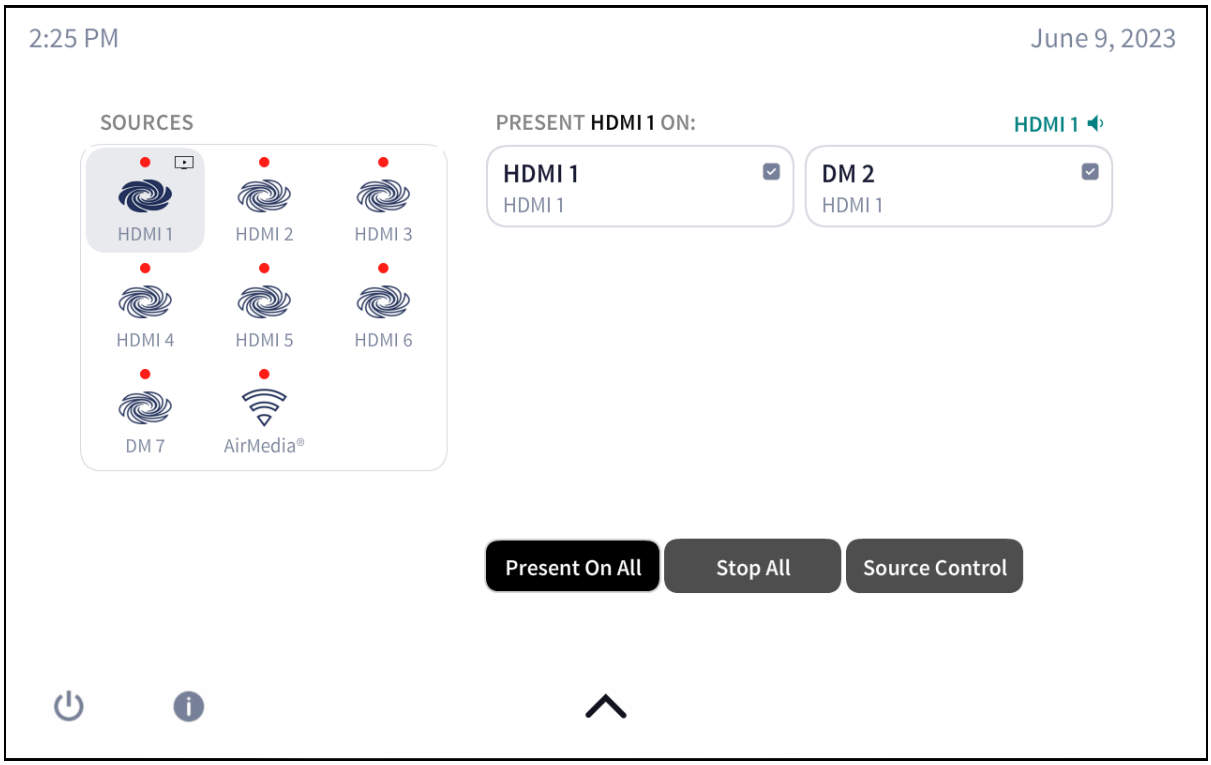
- If a source is active, the source icon is bold, and a **Stop** button is shown. Tap the **Stop** button to stop routing the source to the display.
- If one source is turned on for presentation, the control page for that source loads automatically when the **Present a Source** screen is accessed.

Present a Source Screen - Advanced Multi Display Routing

If the DMPS3 device supports and is configured to use multiple displays, and if **Advanced Multi Display Routing** is turned on in the system settings, the present screen appears as shown in the following image.

> **NOTE:** The **Present a Source** screen for advanced multi display routing is available only for the AVF 2.0 UI (Smart Graphics) and AVF 3.0 UI themes.

Present a Source Screen (Advanced Multi Display)



The present screen for advanced multi display routing contains two columns: one for sources, and one for displays. The current audio source for the room is also shown in the top-right corner of the page.

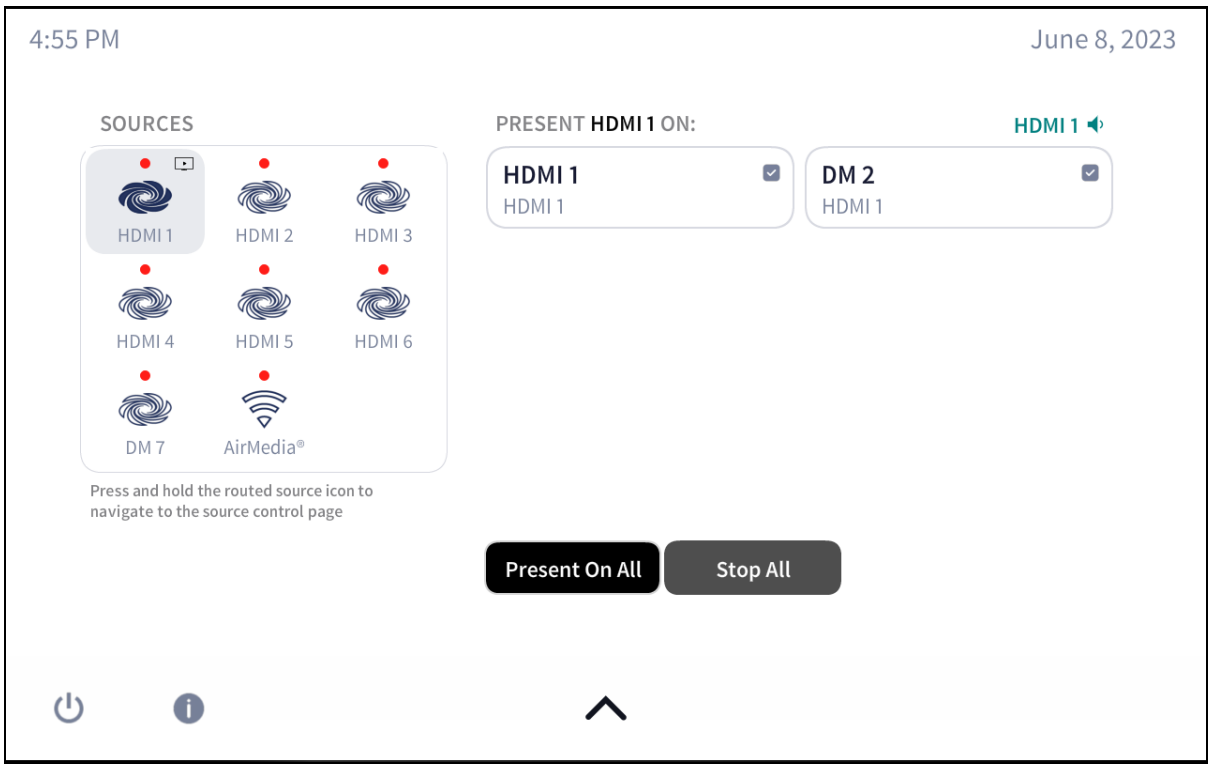
- Select a source under **Sources** to route that source to one or more displays. The source shows a playing icon in its top-right corner if it is selected.
- Fill the checkbox next to one or more displays under **Present [Source] On** to route the selected source to those displays.

The following controls are also provided:

- Tap **Present On All** to present the selected source to all displays in the system.
- Tap **Stop All** to stop source routing to all displays in the system.
- Tap **Source Control** to navigate to the source control page for the selected source.

If **Enable Press and Hold for Source Control** is turned on in the system settings, the **Source Control** button is removed from the screen. Instead, source control pages can be viewed by pressing and holding the desired source under **Sources** for a specified duration.

Present a Source Screen (Advanced Multi Display) - Press and Hold for Source Control

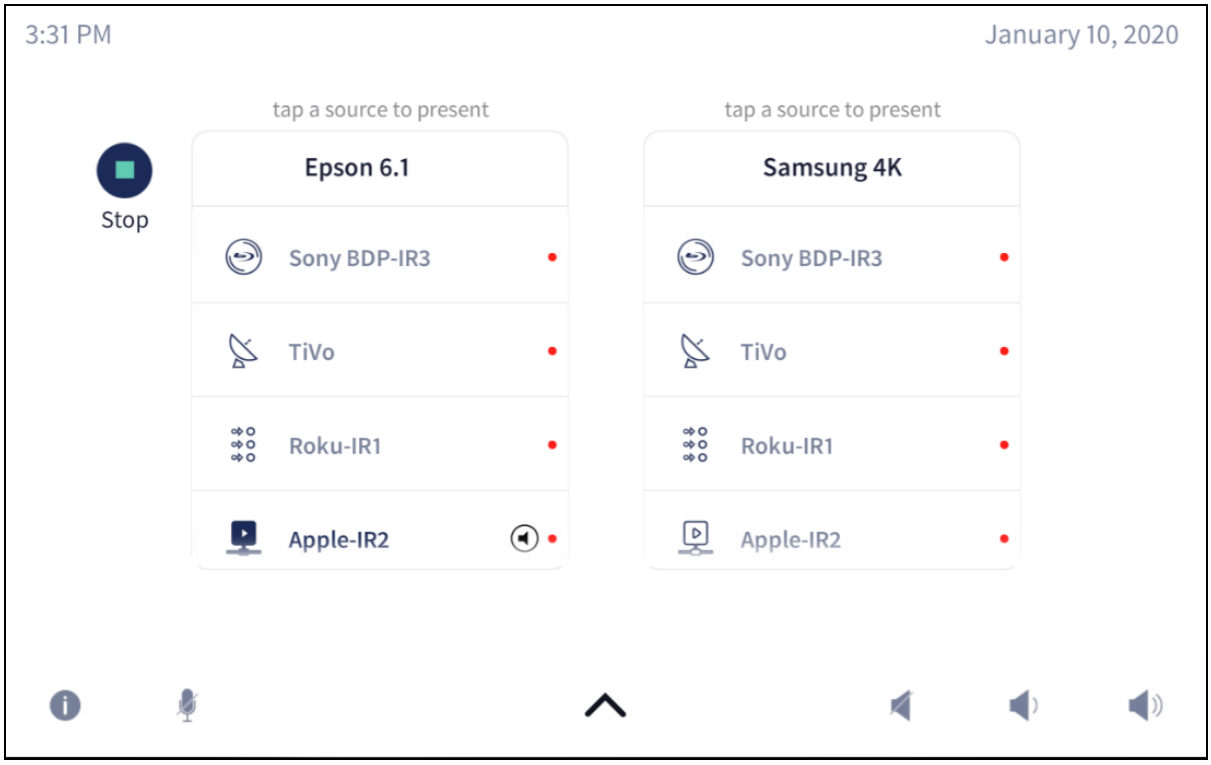


For more information on configuring advanced multi display routing, refer to Touch Screen Custom Graphics on page 41.

Present a Source Screen – Dual Display (Legacy)

If the DMPS3 device supports and is configured to use two displays, and if **Advanced Multi Display Routing** is turned off in the system settings, the present screen appears as shown in the following image.

Present a Source Screen (Dual Display)



The present screen for dual display presenting contains two columns (one for each display). Select one of the available presentation options in the appropriate column to route the selected source to the desired display.

Once a source is chosen, the source text and icon turn bold and the following controls are available:

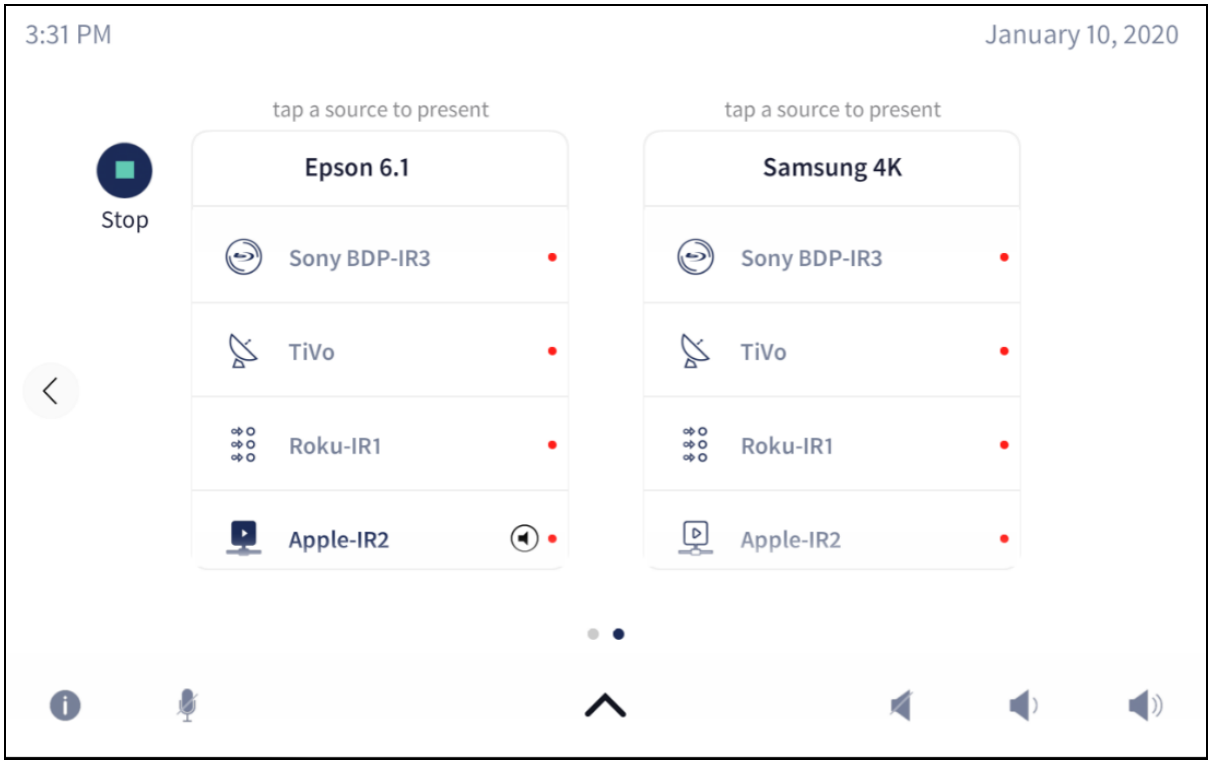
- Tap the source to display device-specific controls.
- Tap **Stop** to stop presenting the chosen source.
- Tap the speaker icon to the right of the chosen source to adjust the volume settings for the source.

Each available source has a green or red icon on the right side of the source's column. A green icon indicates that a video signal is present for that source, while a red icon indicates that a video signal is not present.

Present a Source Screen – More than Two Displays (Legacy)

If the DMPS3 device supports and is configured to use more than two displays, and if **Advanced Multi Display Routing** is turned off in the system settings, the present screen appears as shown in the following image.

Present a Source Screen (Dual Display)



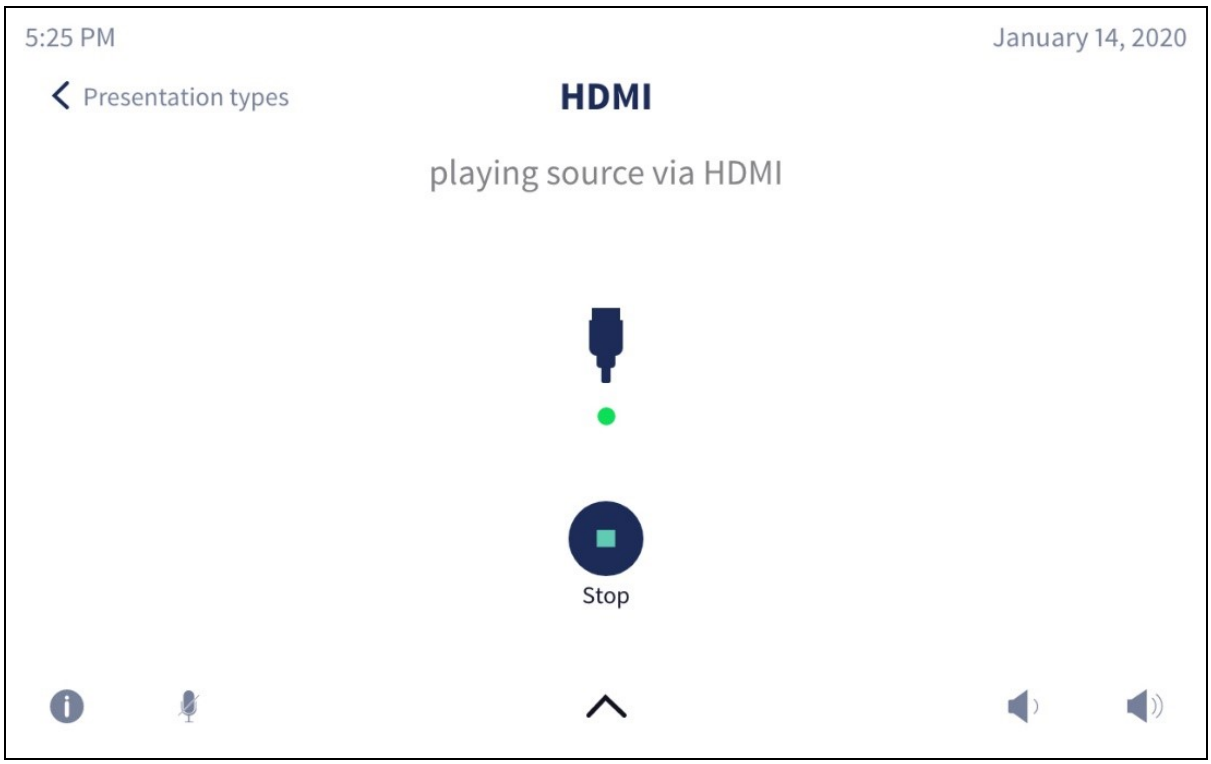
The present screen for two or more displays is functionally similar to the present screen for dual display. However, additional displays can be accessed by tapping the arrow icons on either side of the screen.

Each screen contains page indicator dots to show the total number of display screens and to highlight the screen that is currently selected (represented by an opaque gray dot).

Now Presenting Screen - HDMI Source

When a source connected by HDMI (such as a laptop) is selected, the following screen is displayed.

Present Screen - HDMI Source



The **Now Presenting** screen for HDMI provides the input name and connection type. The dot in the center of the screen turns green if the source is connected and turns red if the source is disconnected.

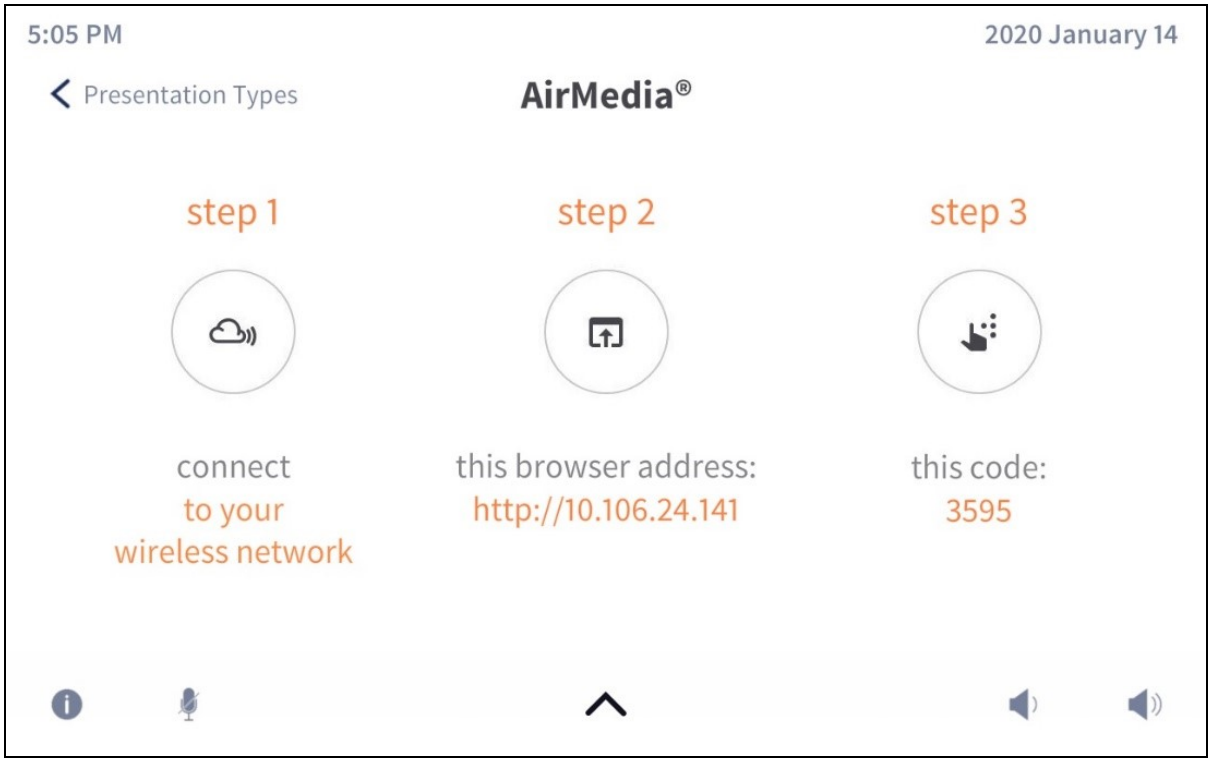
Tap **Stop** to disconnect from the HDMI source.

Tap the back arrow **<** to return to the **Present a Source** screen. Tapping the back arrow does not disconnect the source.

AirMedia Screen

When an AirMedia® presentation gateway source is selected and the wireless connection has not already been established, the following screen is displayed.

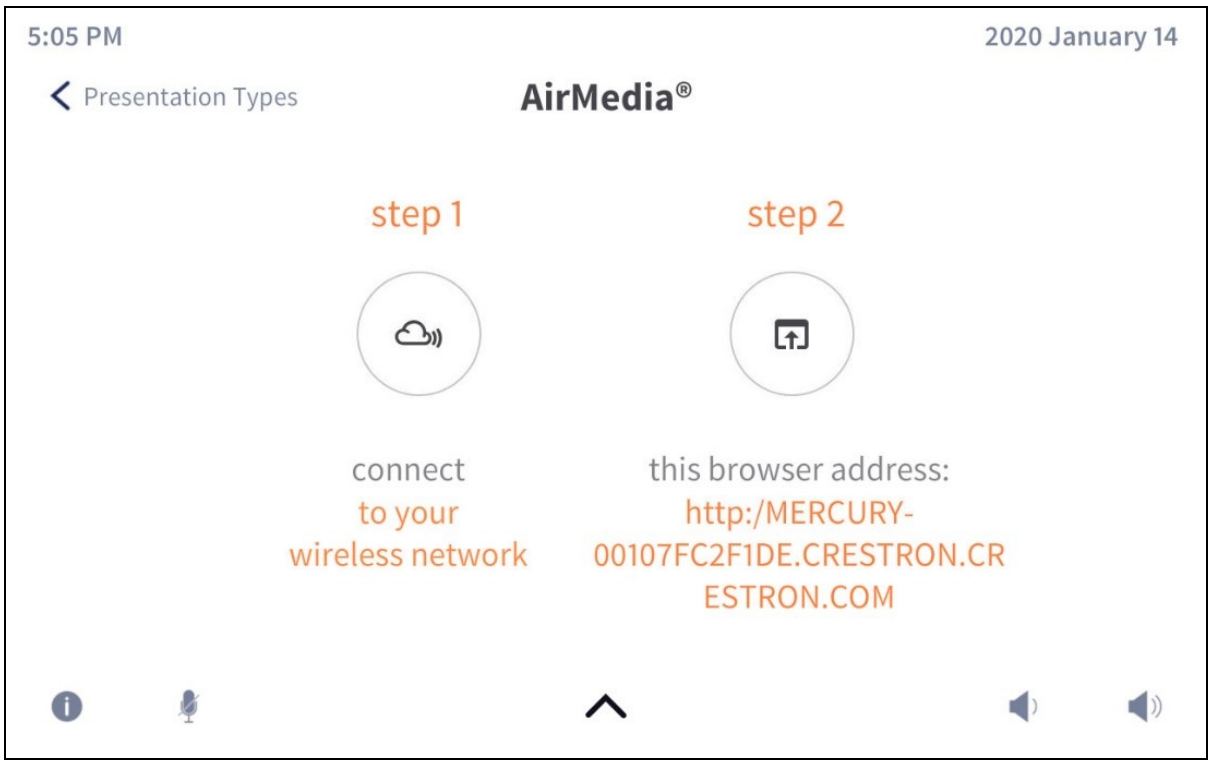
AirMedia Screen



The **AirMedia** screen provides instructions for connecting to the AirMedia device over a wireless network. Once this connection has been established, AirMedia can be selected as a presentation source.

If the connection code has been turned off, a version of the **AirMedia** screen is displayed that omits this step. For more information on turning off the connection code, refer to the AirMedia device's documentation at www.crestron.com/manuals.

AirMedia Screen - Connection Code Turned Off

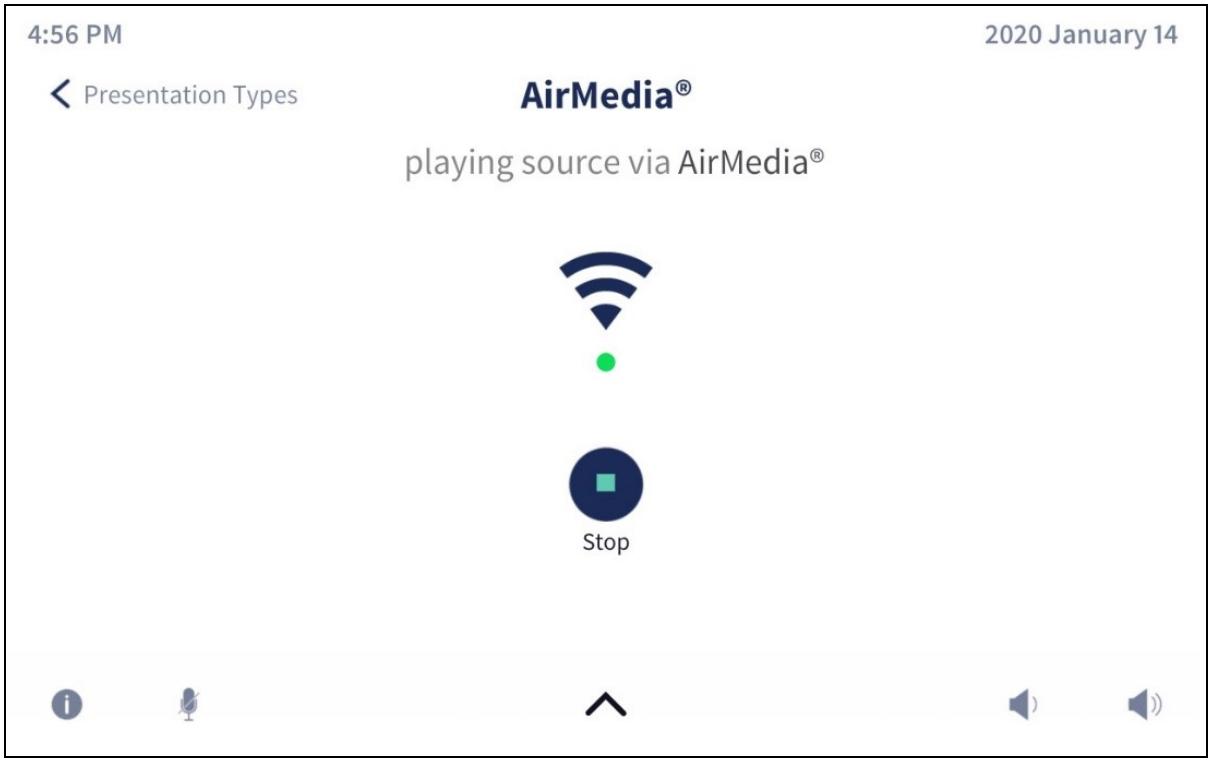


Tap the back arrow **<** to return to the **Present a Source** screen.

Now Presenting Screen - AirMedia Source

When an AirMedia source is selected (once a wireless connection has been established), the following screen is displayed.

Present Screen - AirMedia Source



The **Now Presenting** screen for AirMedia shows that the source is connected wirelessly over AirMedia. The dot in the center of the screen turns green if the source is connected and turns red if the source is disconnected.

Tap **Stop** to disconnect from the AirMedia source.

Tap the back arrow **<** to the **Present a Source** screen. Tapping the back arrow does not disconnect the source.

Now Presenting Screen - Other Source Devices

The touch screen project provides custom **Now Presenting** screens for various source devices, such as cable TV receivers and video servers, which include controls that are specific to the device and that are mapped via the device driver.

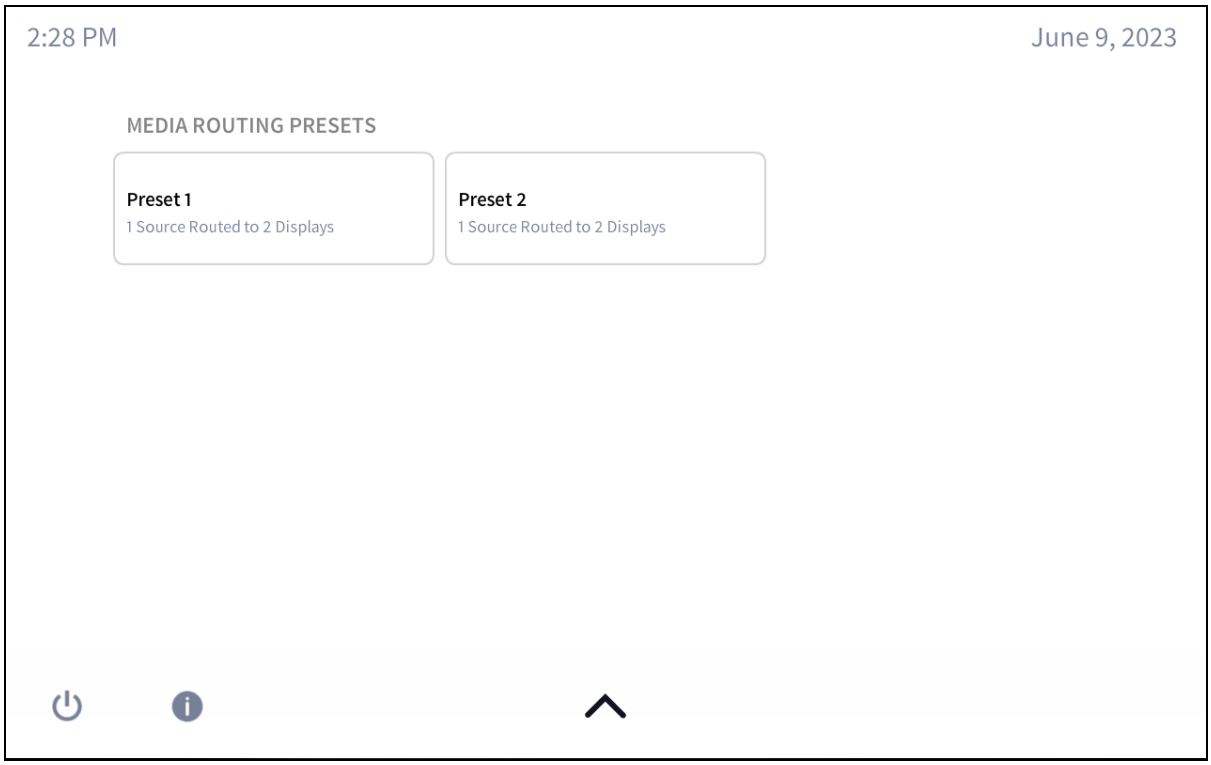
To view more examples of **Now Presenting** screens for other source devices, refer to the .AV Framework DMPS UI Guide at www.crestron.com/manuals.

Media Routing Presets Screen Overview

The **Media Routing Presets** screen allows up to 9 source routing presets to be recalled from a single location in the touch screen project.

> **NOTE:** The **Media Presets** screen is available only for the AVF 2.0 UI (Smart Graphics) and AVF 3.0 UI themes.

Media Presets Screen



Tap one of the provided media presets to select it. The media preset is recalled immediately, and the **Present a Source** screen updates to show the new source and display route(s).

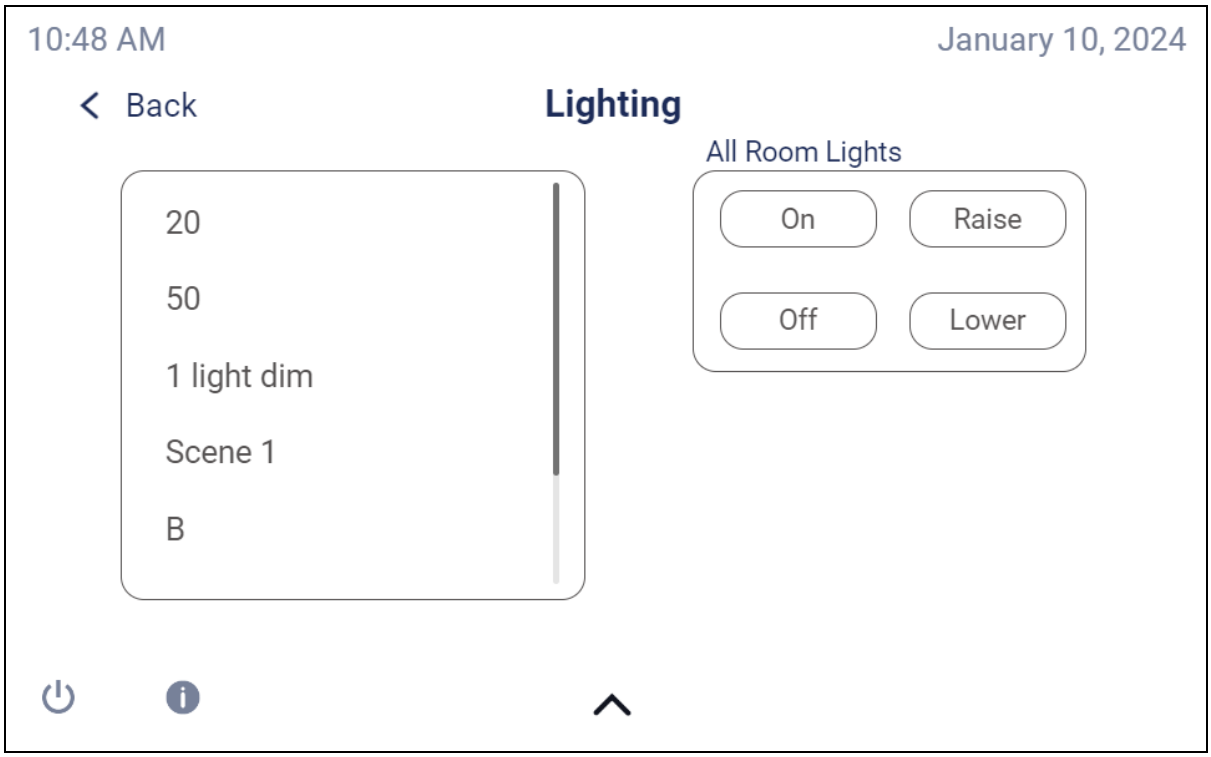
For more information on configuring media presets, refer to Media Presets on page 67.

Lighting Screen Overview

The **Lighting** screen allows configuring lighting presets to be recalled from a single location in the touch screen project.

> **NOTE:** The **Lighting** screen is available only for the AVF 3.0 UI theme.

Lighting Screen



The following controls are provided:

- Tap one of the provided lighting presets in the menu to select it. The lighting preset is recalled immediately.
- Tap one of the **All Room Lights** controls to perform actions for all lights in the room. These controls will vary based on the connected platform (lighting) device.

For more information on configuring lighting presets, refer to Lighting on page 70.

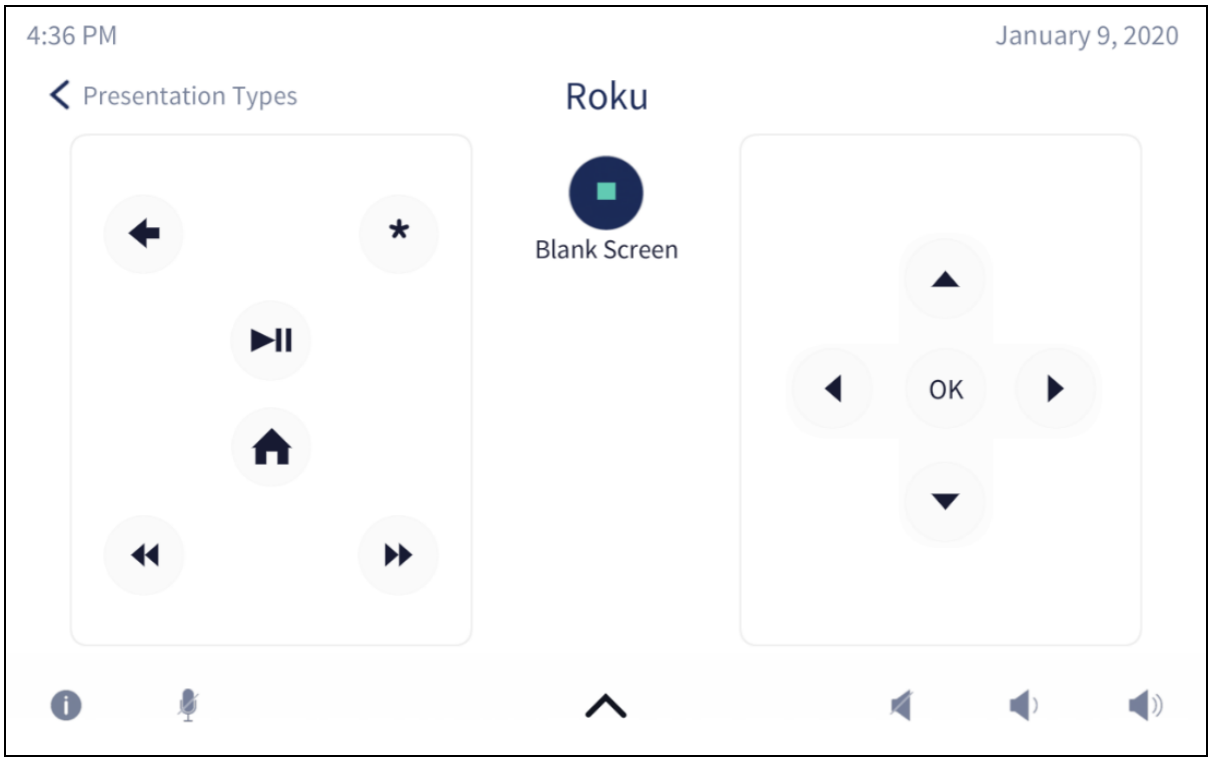
Video Mute

Certain projector and flat panel display devices allow the projected picture and sound to be temporarily turned off. This functionality can be controlled in .AV Framework using the video mute function.

A video mute group is a set of display devices that are grouped together and that support the video mute function. If a display device that does not support video mute is grouped with display devices that do support video mute, the video source will always be routed to the unsupported display even if it is muted on the supported displays. For more information on grouping displays, refer to A/V Routing on page 64.

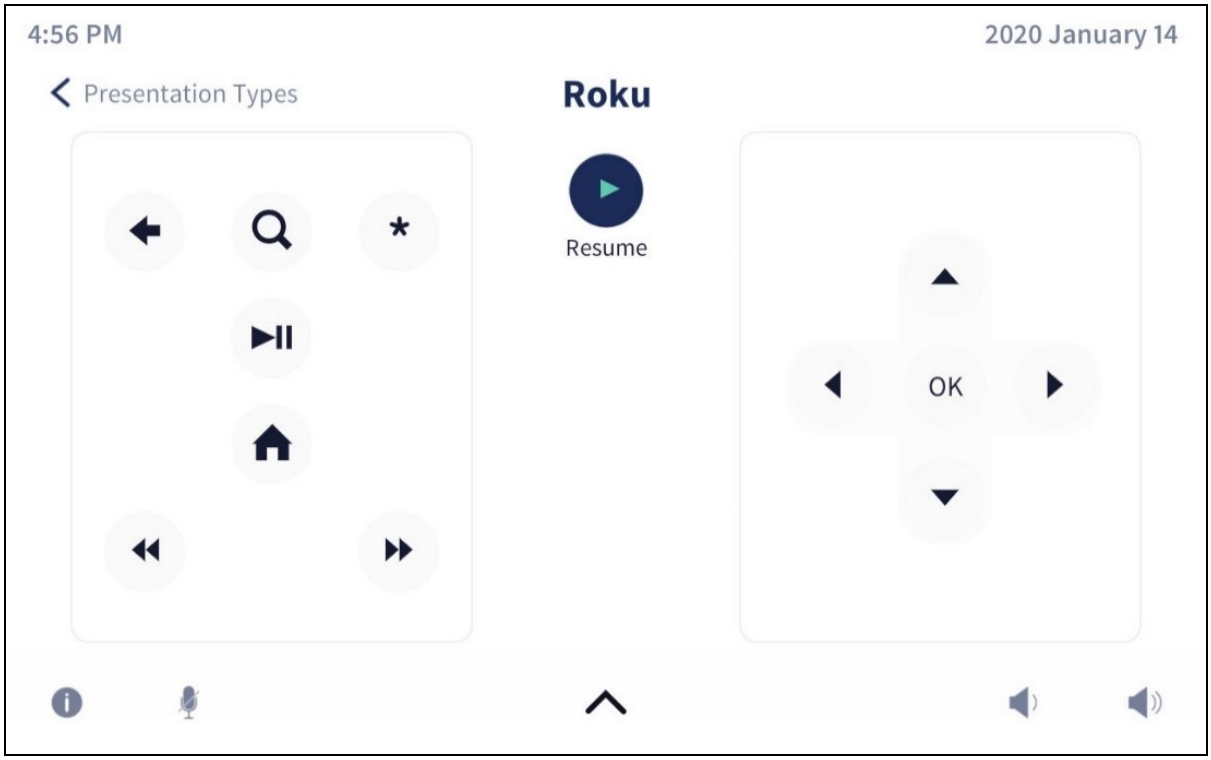
If there is a display in the video mute group, the **Now Presenting** screen on the touch screen user interface shows a **Blank Screen** button in place of the **Stop** button.

Now Presenting Screen – Blank Screen Button



Tap **Blank Screen** to mute the video source. The button text changes to **Blanking** while the source is stopping, and then turns to **Resume** after the source is stopped.

Now Presenting Screen – Resume Button



Tap **Resume** to resume showing the video source. The button text changes to Resuming while the source is resuming, and then turns back to **Blank Screen** after the source has resumed.

Video mute can also be performed via a MP-B10 or MP-B20 button panel or using the video mute button on the device itself or device remote (if applicable). The buttons on the MP-B10/MP-B20 flash when video mute is initiated or active and stop flashing when Video Mute is inactive. The touch screen user interface updates the video mute buttons accordingly to reflect the current state.

Crestron ONE™ App Support (Preview)

The Crestron ONE™ mobile app for Apple® iPhone® and iPad® devices allows users to control an .AV Framework room from a mobile device. The Crestron ONE app creates a peer-to-peer network over Bluetooth® communications between the mobile device and a TSW-60 series or TSW/TS-70 series touch screen in the room, allowing mobile-optimized room controls to be pushed to the device from the touch screen. No special in-app or network configuration is required.

The Crestron ONE app functionality is being released in .AV Framework 6.9 as a preview version with known limitations. The full functionality will be available in a future release. Refer to the .AV Framework 6.9 release notes for more information.

> **NOTE:** The AVF 1.0 UI and AVF 2.0 UI themes are both supported by Crestron ONE. The **Reserve Now** function is not currently supported.

A configuration JSON file is provided within the zipped package for .AV Framework. This **config.json** file must be loaded to a touch screen in the .AV Framework room to allow support for the Crestron ONE app.

> **NOTE:** The **config.json** file can be located by unzipping the .clz file and navigating to the **Config** directory. The file can also be extracted from the **/User/Avf/Config** directory using a control system.

To load the configuration JSON file over FTP using console commands:

1. Use an SFTP or SCP client to upload the provided **config.json** file to the **\User** directory of the touch screen.
2. Issue the following console commands using an SSH client or the **Text Console** tool in Crestron Toolbox software:
    - `ruiconfigimport`: Use to import the **config.json** file from the **\User** directory to internal storage on the touch screen.
    - `ruisvc on`: Use to turn the mobile control service on for the touch screen.

For more information on the Crestron ONE app, refer to www.crestron.com/Products/Control-Hardware-Software/Software/Apps/CRESTRON-ONE.

Appendix A: Interface Setup

This appendix provides information on how to connect various supported interfaces to the .AV Framework system.

TSW Series Touch Screens

Connect a supported Crestron TSW series touch screen (TSW-752, TSW-1052, TSW-760, TSW-1060, TS-770/1070, and TS/TSW-1070) to the .AV Framework system to control room scheduling and source selection functions from the touch screen.

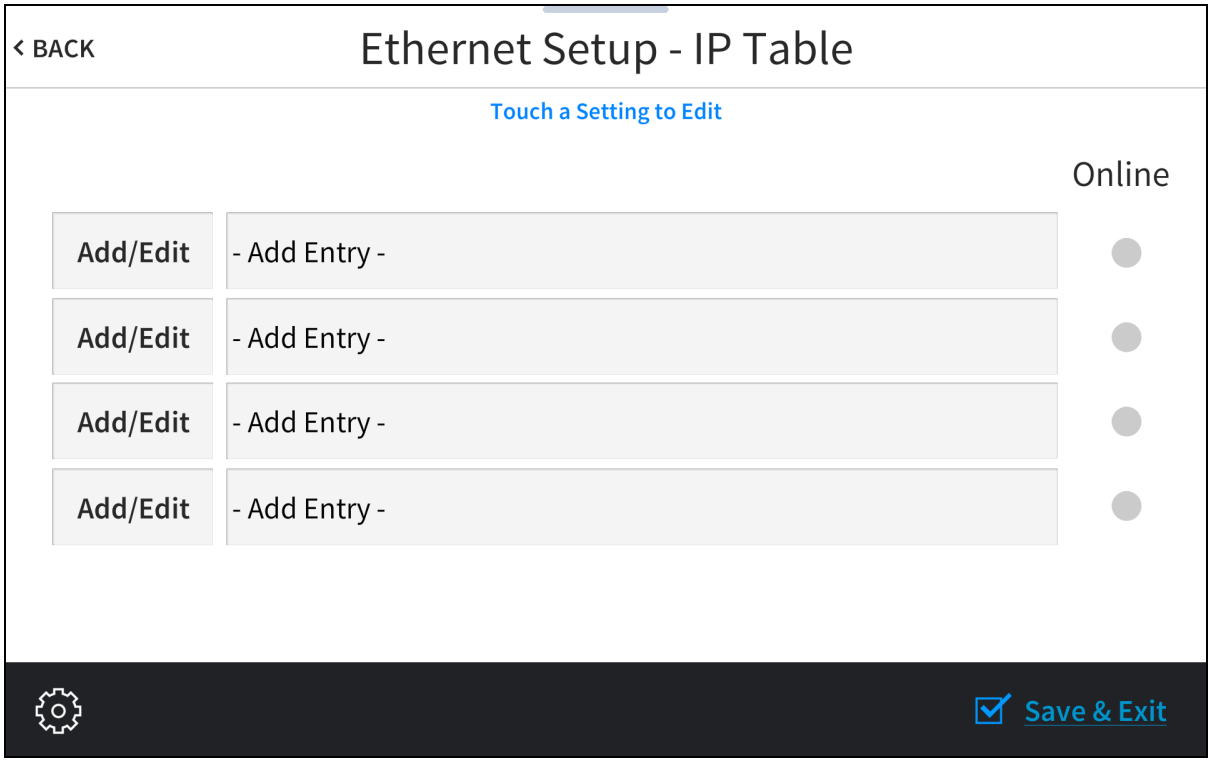
> **NOTE:** The .AV Framework touch screen project must be loaded on the touch screen prior to operation.

To connect a TSW series touch screen:

> **NOTE:** Ethernet setup screens for the TS/TSW-70 series touch screens are shown for this procedure. Similar screens are used to connect the other supported touch screen models.

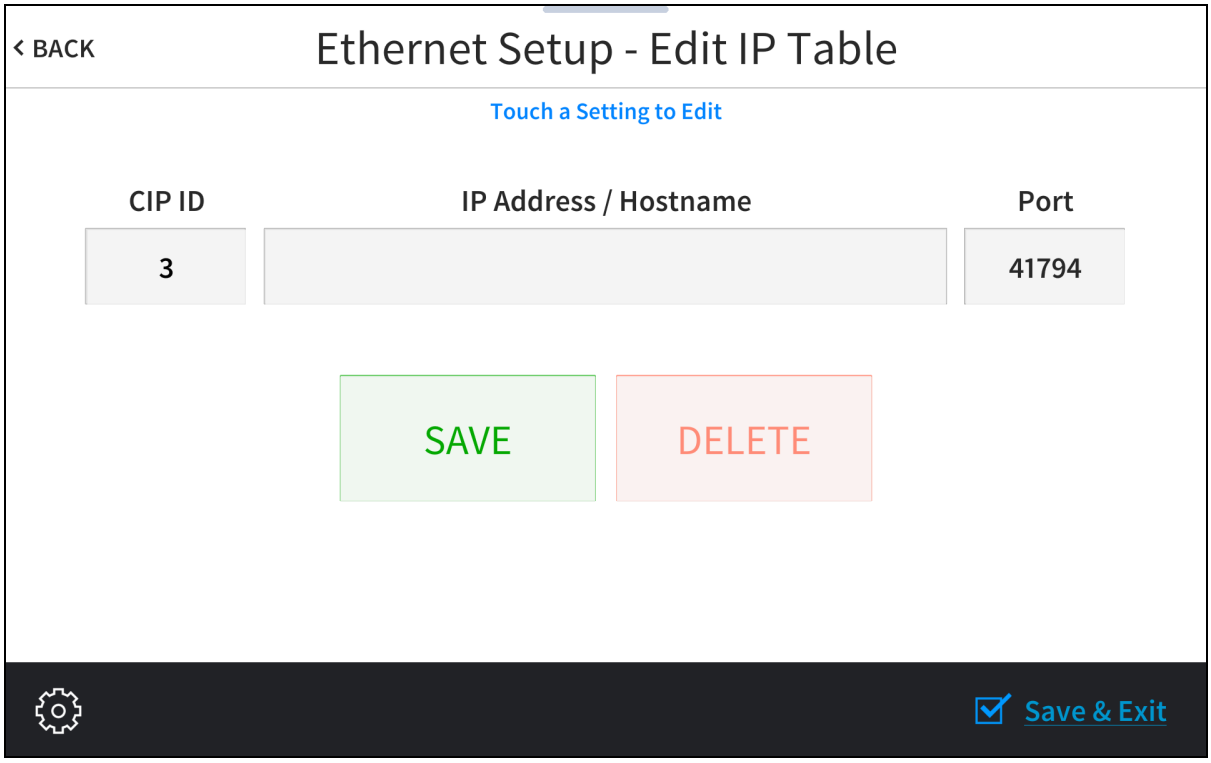
1. On the **Setup** screen, tap **IP Table Setup** to display the **Ethernet Setup - IP Table** screen.

Ethernet Setup - IP Table Screen



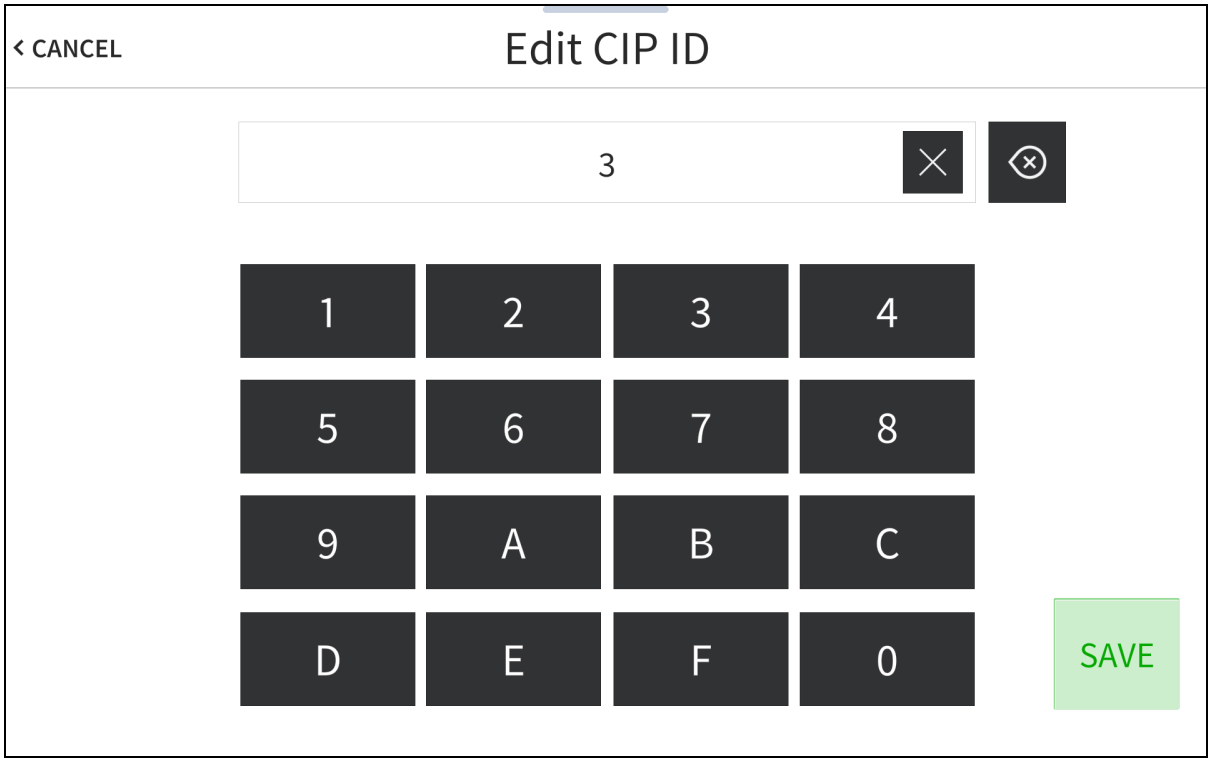
2. Tap **Add/Edit** next to an empty IP table entry. The **Ethernet Setup - Edit IP Table Entry** screen is displayed.

Ethernet Setup - Edit IP Table Screen



3. Tap the text field below **CIP ID** to display the **Edit CIP ID** on-screen hex keypad.

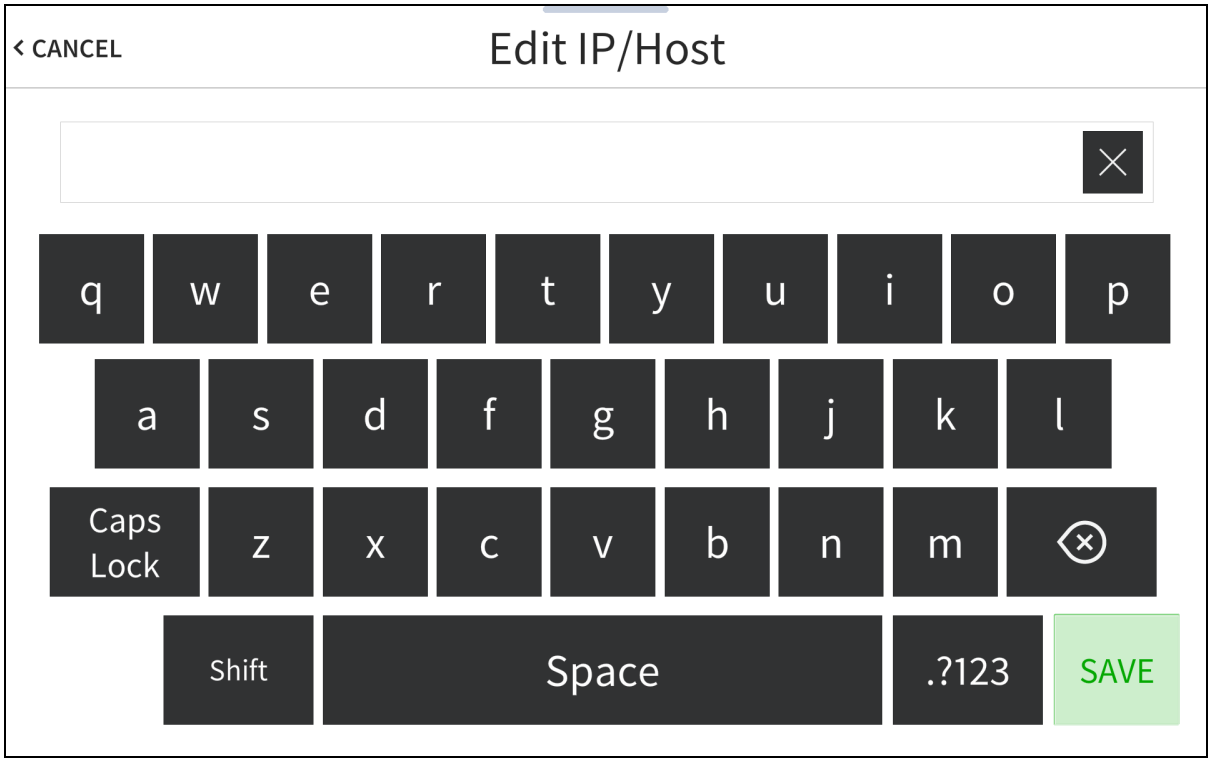
Edit CIP ID - On-Screen Hex Keypad



4. Use the keypad to enter the IP ID for connecting to the DMPS3 device.
   - Tap the clear button in the text field to clear any previous entry.
   - Tap the delete button to delete the last digit.
   - Tap **SAVE** to save a new entry or tap **< CANCEL** to discard any changes.

5. Tap the text field below **IP Address / Hostname** to display the **Edit IP/Host** on-screen keyboard.

Edit IP/Host - On-Screen Keyboard



6. Use the keyboard to enter the IP address or host name of the DMPS3 device.
   - Tap the clear button ⊗ in the text field to clear any previous entry.
   - Tap the delete button ⊗ to delete the last digit.
   - Tap **SAVE** to save a new entry or tap **< CANCEL** to discard any changes. The display returns to the **Ethernet Setup - IP Table** screen.
7. On the **Ethernet Setup - IP Table** screen, tap **SAVE** to save the current entry.

XPanel

Connect to the Desktop XPanel software to configure a virtual touch screen project for testing and control. The Desktop XPanel software can be downloaded and installed from the .AV Framework web configuration interface. The **Webx** touch screen device must be added to the .AV Framework system to use the Desktop XPanel software.

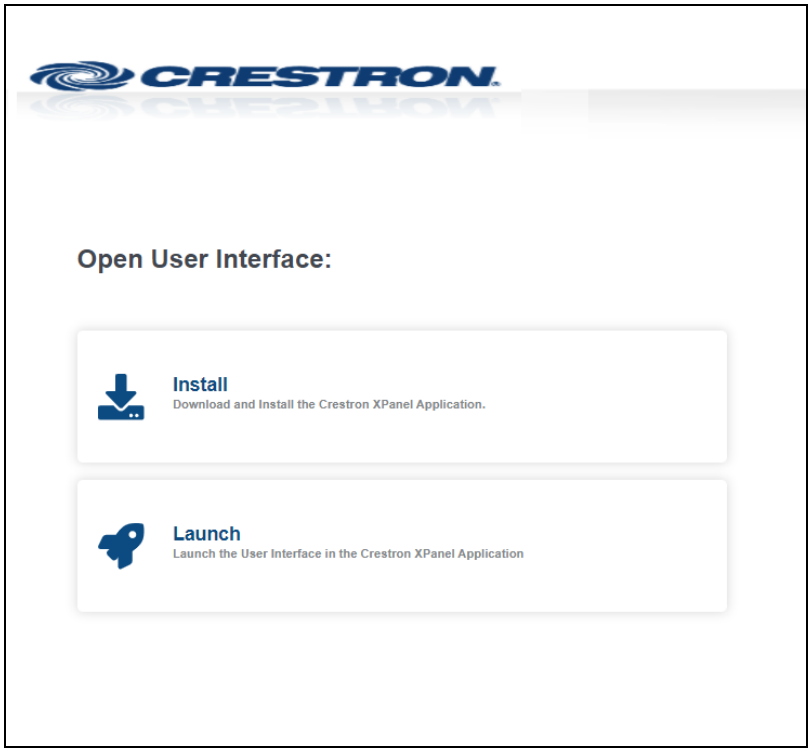
To configure a virtual touch screen project with Desktop XPanel:

1. Enter the IP address or the host name of the DMPS3 device in the browser URL field, appending "/AVF" to the IP address or host name ("*xxx.xxx.xxx.xxx*/AVF"). If the default IP ID of the Webx device in the .AV Framework system has been changed, append "?ipid=[value]" to the URL, where [value] is the new IP ID.

> **NOTE:** For the DMPS3-200-C, DMPS3-300-C, and DMPS3-300-C-AEC, append "/AVF/core3xpanel.html" to the IP address or hostname instead ("*xxx.xxx.xxx.xxx*/AVF/core3xpanel.html").

A Desktop XPanel configuration page is displayed.

Desktop XPanel Configuration Page

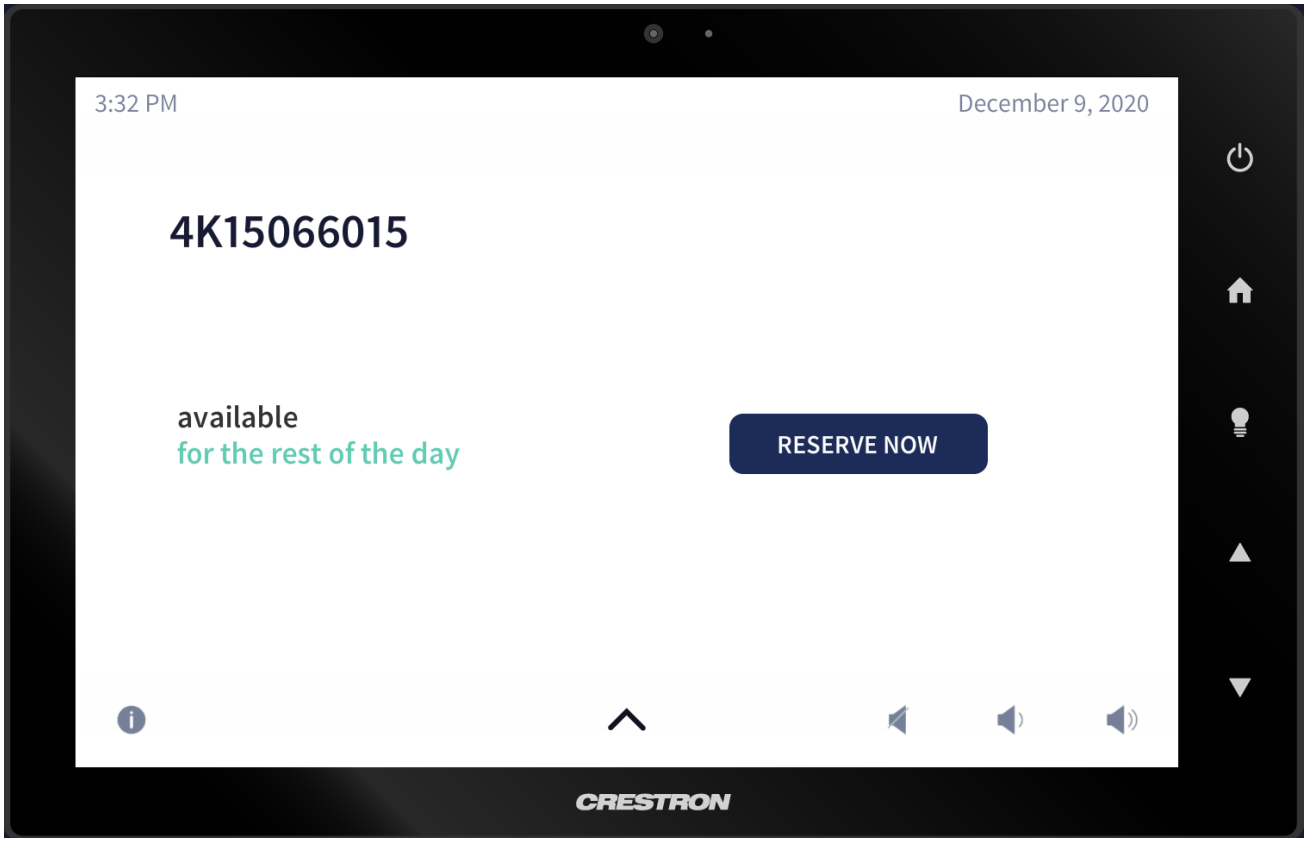


2. Select **Install** to download a Desktop XPanel .exe file.

> **NOTE:** The Desktop XPanel software must be installed only once. Desktop XPanel can be launched from the web browser for any .AV Framework controller or system after the software is installed.

3. Open the Desktop XPanel .exe file and follow the prompts to install Desktop XPanel onto your workstation.
4. Once Desktop XPanel is installed, return to the Desktop XPanel configuration page using the URL specified in step 1.
5. Select **Launch**. Upon successful connection, the Desktop XPanel software opens with the .AV Framework user project running.

AVF 2.0 UI on Desktop XPanel Software



NOTE: The shipping PUF/ZIP versions of .AV Framework for DMPS3 contain Desktop XPanel support for the AVF 2.0 and 3.0 UIs only. To use the AVF 1.0 UI, the CPZ file for the .AV Framework program must be downloaded from www.crestron.com/Support/Resource-Library and loaded manually into the "Program 01" slot of the DMPS3 device via Crestron Toolbox software. For more information, refer to the embedded Crestron Toolbox help file.

All touch screen project functions and screens can be tested through the XPanel interface. Additionally, the virtual touch screen hard buttons (except for the center lightbulb button) provide the same functionality as a physical touch screen.

NOTE: Only one instance of the Desktop XPanel software can be running at any given time.

AM-100/AM-101

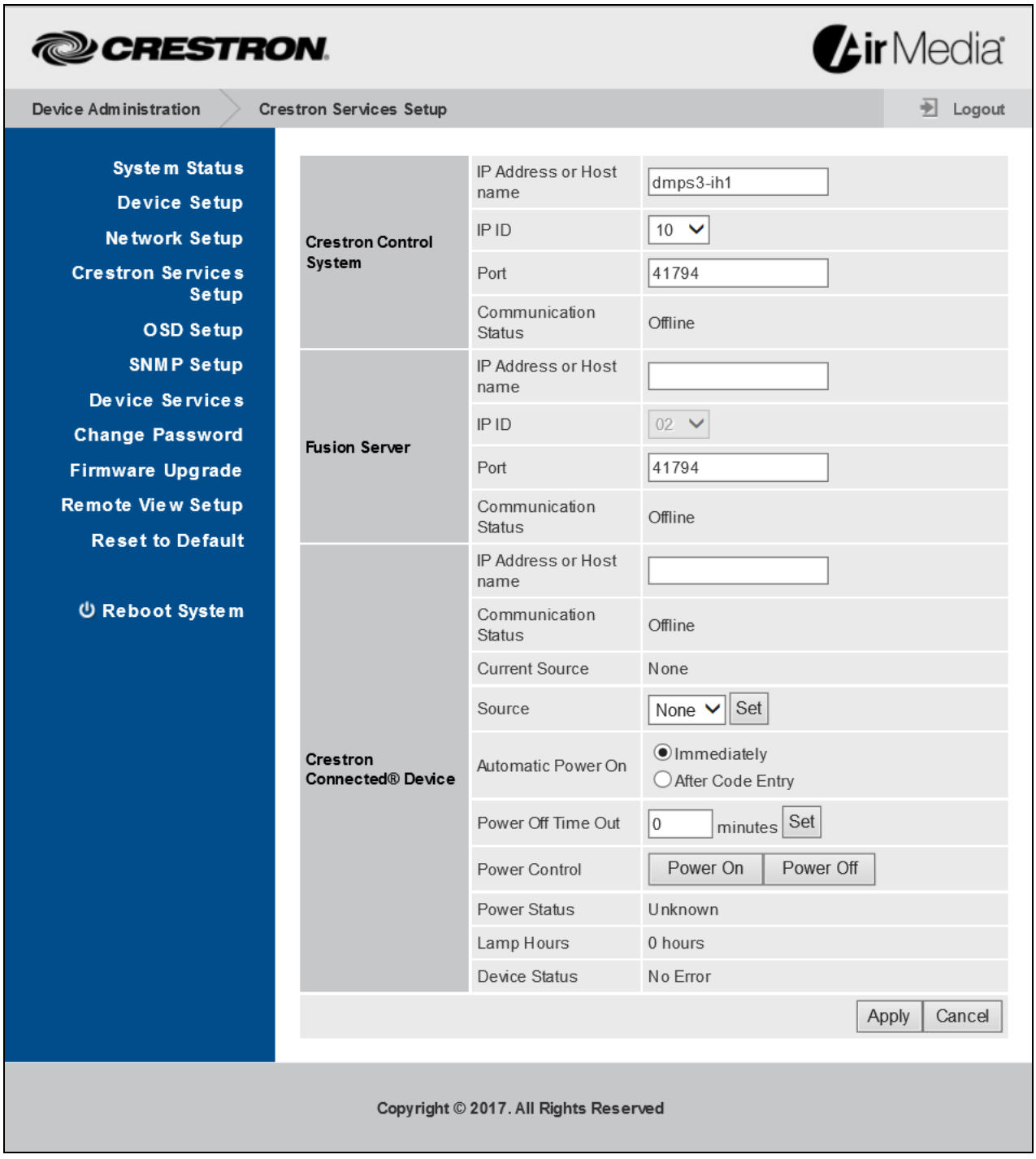
Connect a Crestron AM-100 or AM-101 AirMedia presentation gateway to the .AV Framework system to present wireless content on a display output.

To connect an AM-100 or AM-101:

1. Use a web browser to connect to the AirMedia device IP address.
2. Select **Device Administration** to display the login page.

3. Log in to the configuration utility. The default password is "admin."
4. Select **Crestron Services Setup** from the column on the left side of the page.

Device Administration - Crestron Services Setup



5. Enter the IP address of the DMPS3 device in the **Crestron Control System** section.
6. Set an IP ID used to connect to the DMPS3 device device.
7. Set the Port to 41794.

8. Select **Apply**.

TT-100

Connect a TT-100 Crestron Connect It™ cable caddy to the .AV Framework system to add additional BYOD capabilities to the system with one-touch control.

Each Crestron TT-100 cable caddy connects to a USB input on the DMPS3 device. A cable caddy can be configured on any USB input port. For more information, refer to the TT-100 Series DO Guide.

NOTE: If the DMPS3 device does not have a USB input, the cable caddy device can be connected to the DMPS3 device via the Cresnet® network, or it can be connected to a DigitalMedia transmitter with USB inputs that has been added to .AV Framework.

Device configuration is performed with the web-based setup screens described in Manage Devices on page 54.

MPC3/MP-B10/MP-B20

Connect a Crestron MPC3 device or MP-B10/MP-B20 media presentation button panel to the .AV Framework system in place of a touch screen for device routing and source control.

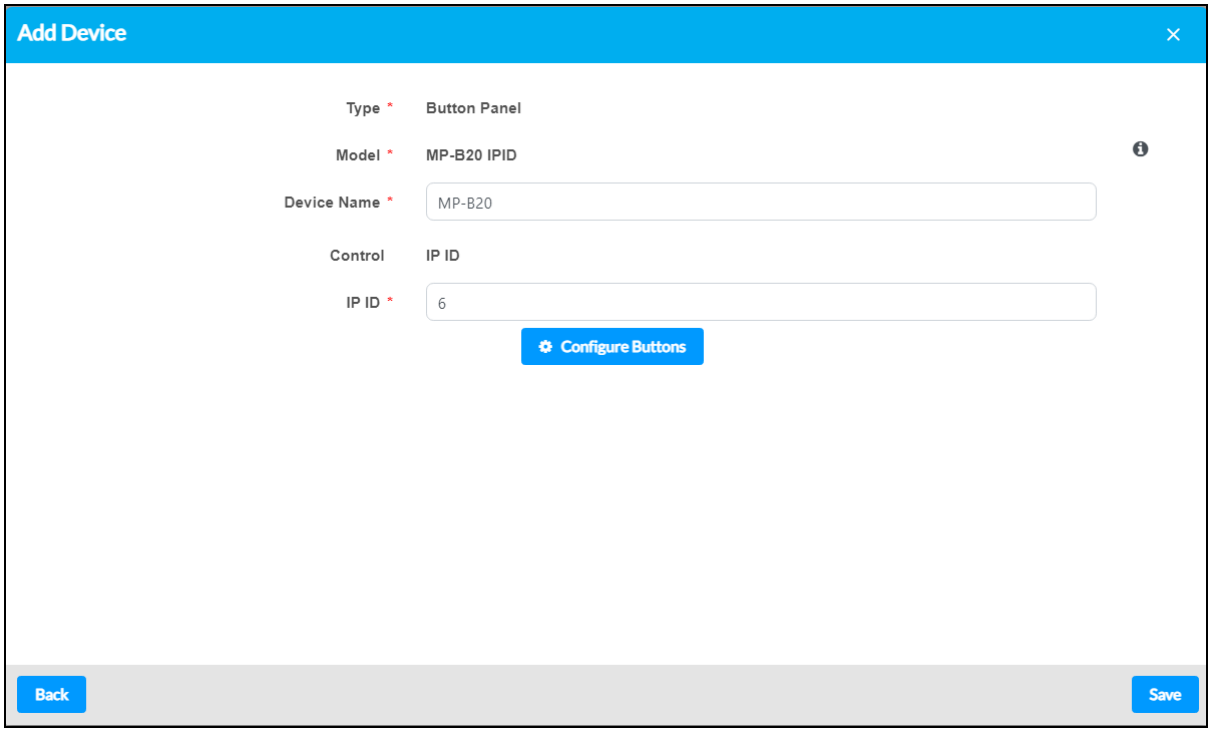
A button panel can also be connected directly to the switcher device via a Cresnet network connection.

NOTE: Observe the following points when connecting a button panel:

- No more than two button panels can be added to the same configuration.
- The button panels control inputs routed to display output 1. For DMPS3 devices with multiple outputs, paired outputs can be configured. For more information, refer to Appendix C: Advanced Routing Behavior and Use Cases on page 130.
- If .AV Framework is powered off from the button panel, power on functionality is turned off until after a 30-second period has elapsed.
- If .AV Framework is controlled using a button panel and a connected display device requires a warm-up or cool-down period, button panel functions are turned off until the warm-up or cool-down period has completed.

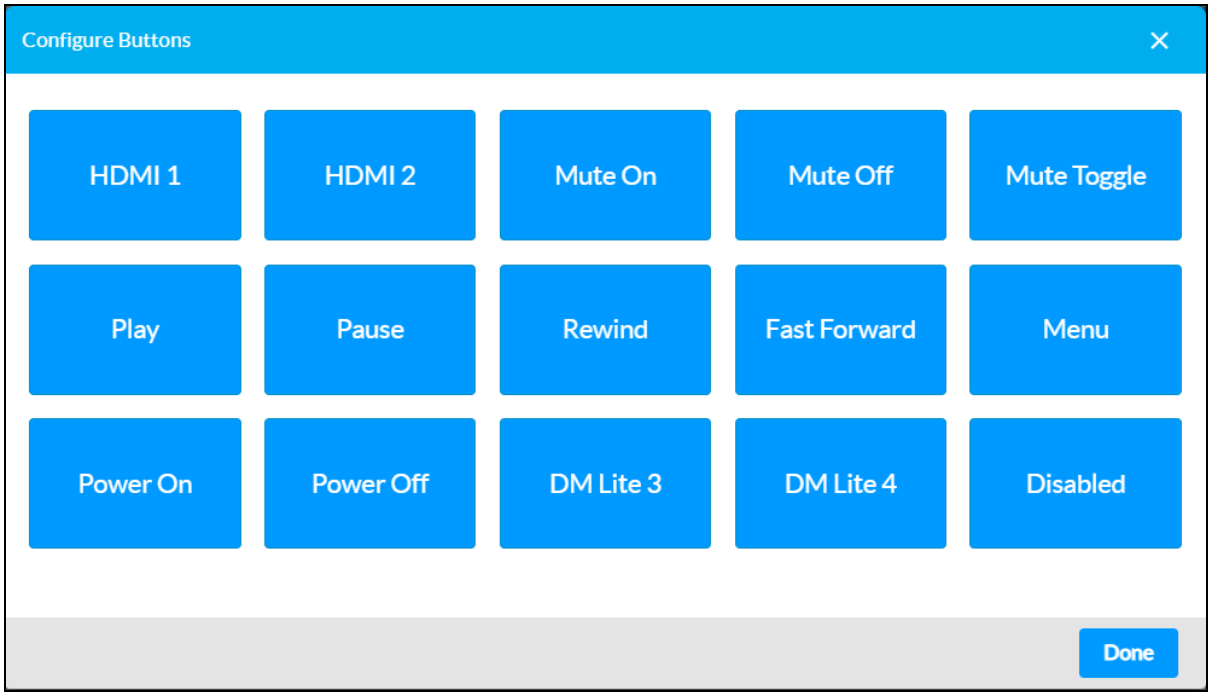
The .AV Framework configuration utility also provides screens that can be used to configure each button individually. When adding or editing a button panel, select **Configure Buttons**.

Add New Device - Button Panel



The **Configure Buttons** dialog box is displayed.

Configure Buttons Dialog Box - MP-B20



Each button on the button panel can be configured by selecting its respective button in the **Configure Buttons** dialog box. A drop-down menu is displayed when a button is selected.

> **NOTE:** Button mapping support is also provided for the permanent capacitive buttons on the MPC3 devices (Volume, Mute, and Power). However, these button functions cannot be modified.

Select one of the switcher device input channels from the drop-down menu to map that input to the button, or select one of the provided functions to map that function to the button. Media presets and lighting scenes can also be selected and mapped to buttons. For more information, refer to Media Presets on page 67 and Lighting on page 70.

> **NOTE:** When using the MP-B20 for source control, the device's 5-way navigation pad is only functional when an appropriate source device input, such as a Blu-ray Disc player or a media server, is selected. Each button on the navigation pad is mapped to the appropriate function on the selected device's menu.

The default input names for the switcher device inputs can be customized in the configuration utility. For more information, refer to Configuration on page 15.

Select **Done** to save any changes and to exit the **Configure Buttons** dialog box.

GLS-ODT-C-CN/GLS-OIR-C-CN

The Crestron GLS-ODT-C-CN and CLS-OIR-C-CN occupancy sensors connect to .AV Framework over a direct Cresnet connection . Use an occupancy sensor for additional system automation in a single-display room.

Device configuration is performed with the web-based setup screens described in the Manage Devices on page 54.

Crestron Fusion

Connect to Crestron Fusion software to monitor and control basic room data, system power, source selection, and room scheduling.

Connect to Crestron Fusion

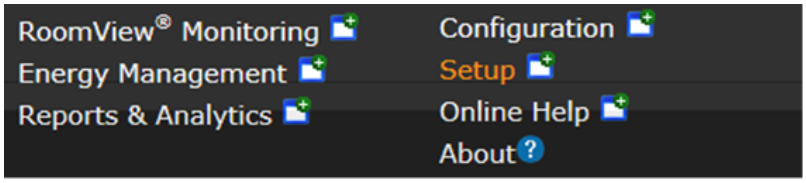
To connect with Crestron Fusion:

1. Log in to the Crestron Fusion server.
2. From the Crestron Fusion header tab, select **Open**.

   Crestron Fusion Cloud Header Tab

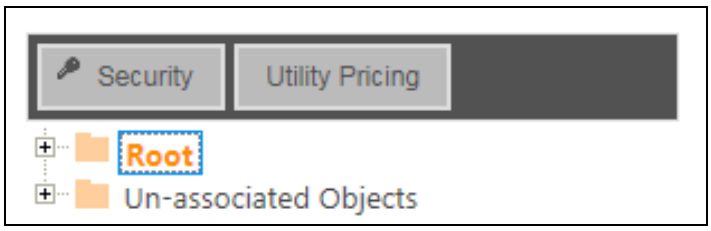
3. From the pull-down tab, select **Setup**.

Pull-Down Tab



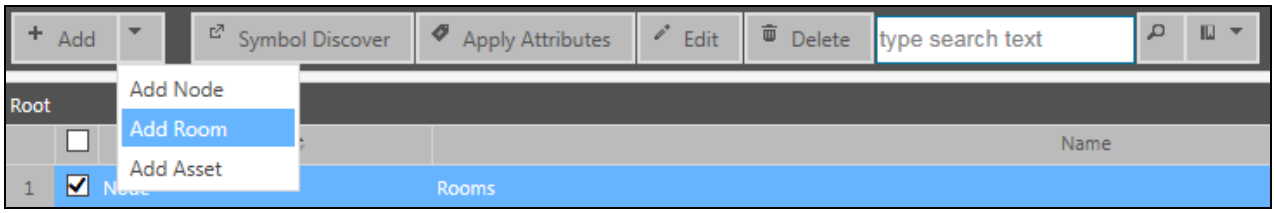
4. Select the plus (**+**) symbol next to **Root** node to expand the tree. Select the **Rooms** node to select the node.

Root Node



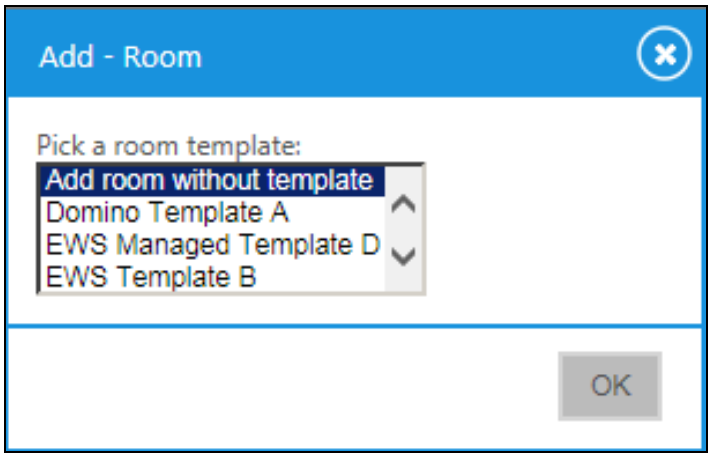
5. Select **Add**. From the drop-down list, select **Add Room**.

Add Drop-Down List



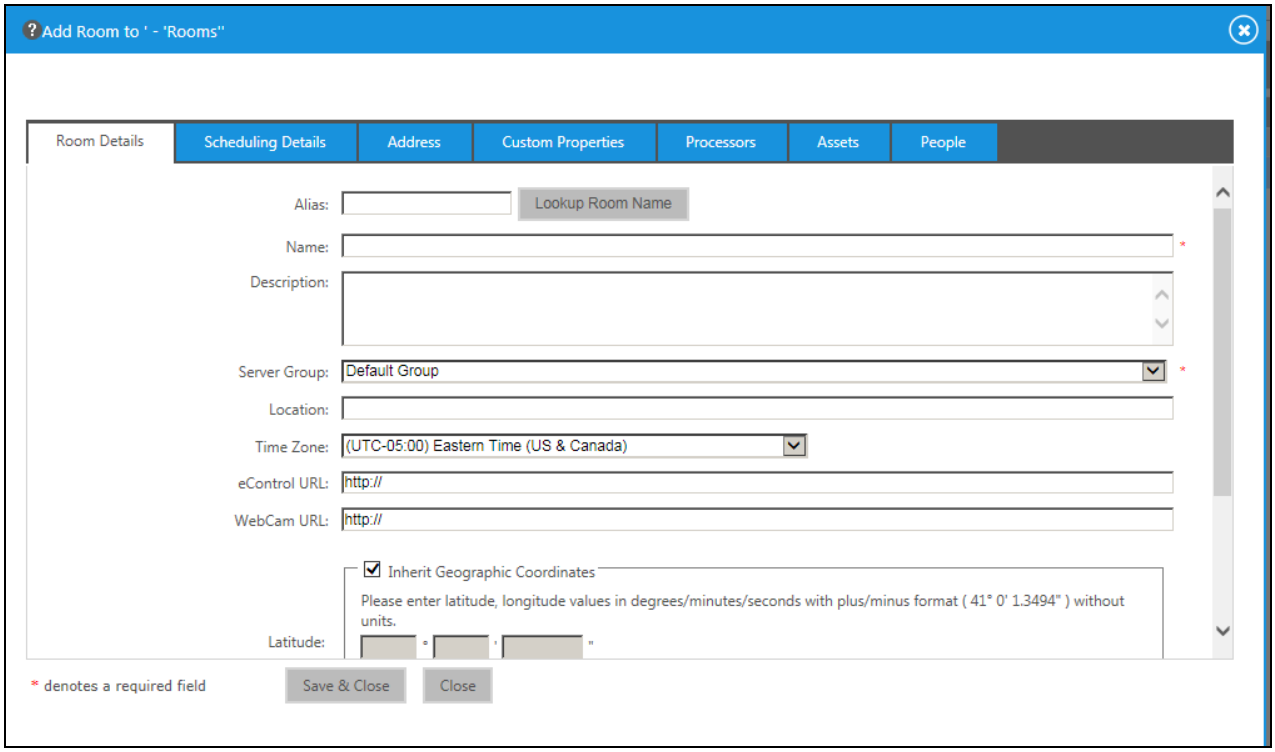
The **Add - Room** dialog box opens.

Add - Room Dialog Box



6. From the drop-down list, make a selection and then select **OK**. The **Add Room to 'Rooms'** dialog box opens with the **Room Details** tab selected.

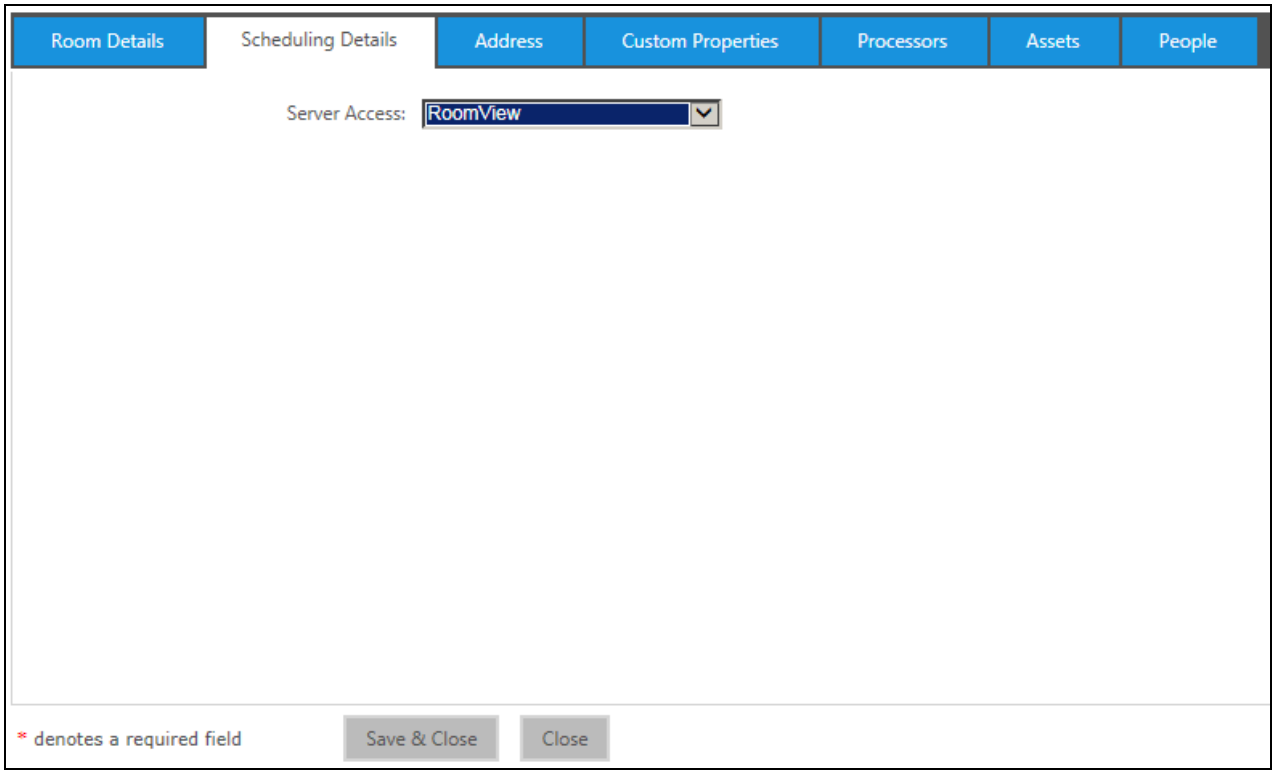
Room Details Tab



7. Enter information into the required fields as indicated by the red asterisks. Enter optional information as desired.

8. Select the **Scheduling Details** tab.

Scheduling Details Tab

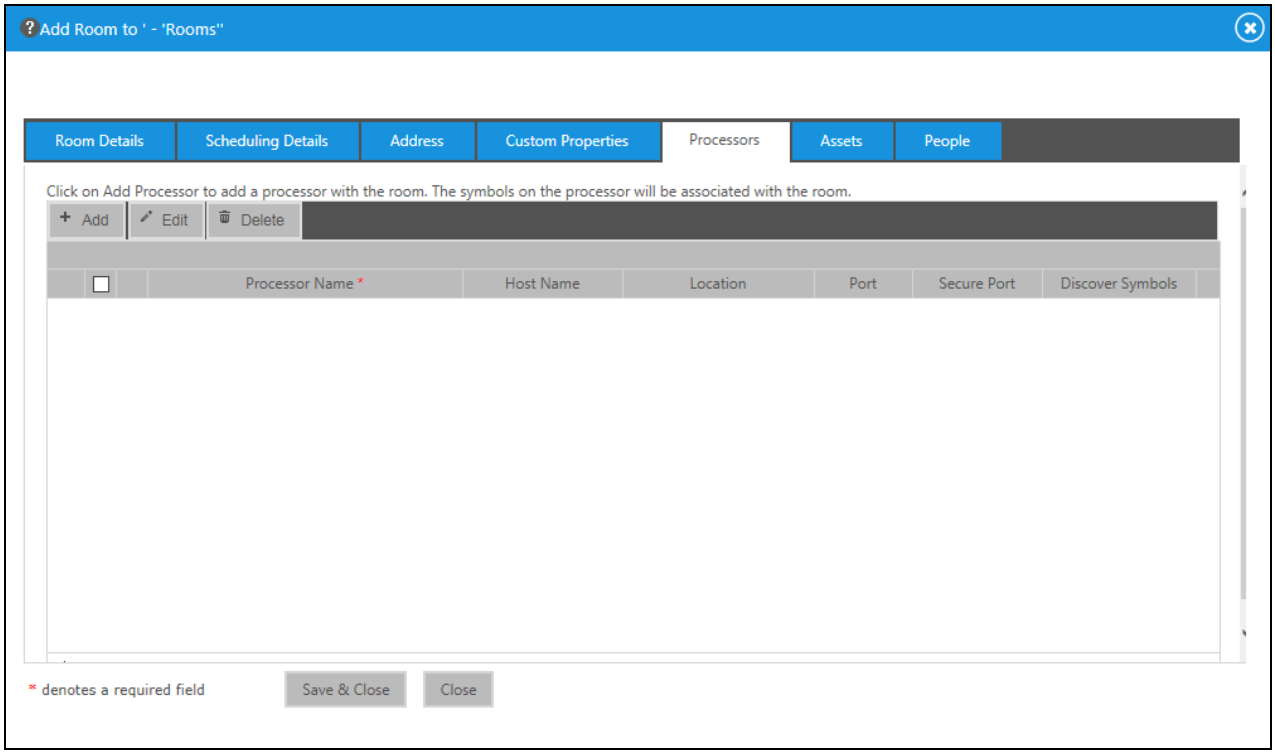


9. In the **Server Access** field, select the RoomView® scheduling application.

> **NOTE:** The user may change to another scheduling calendar later.

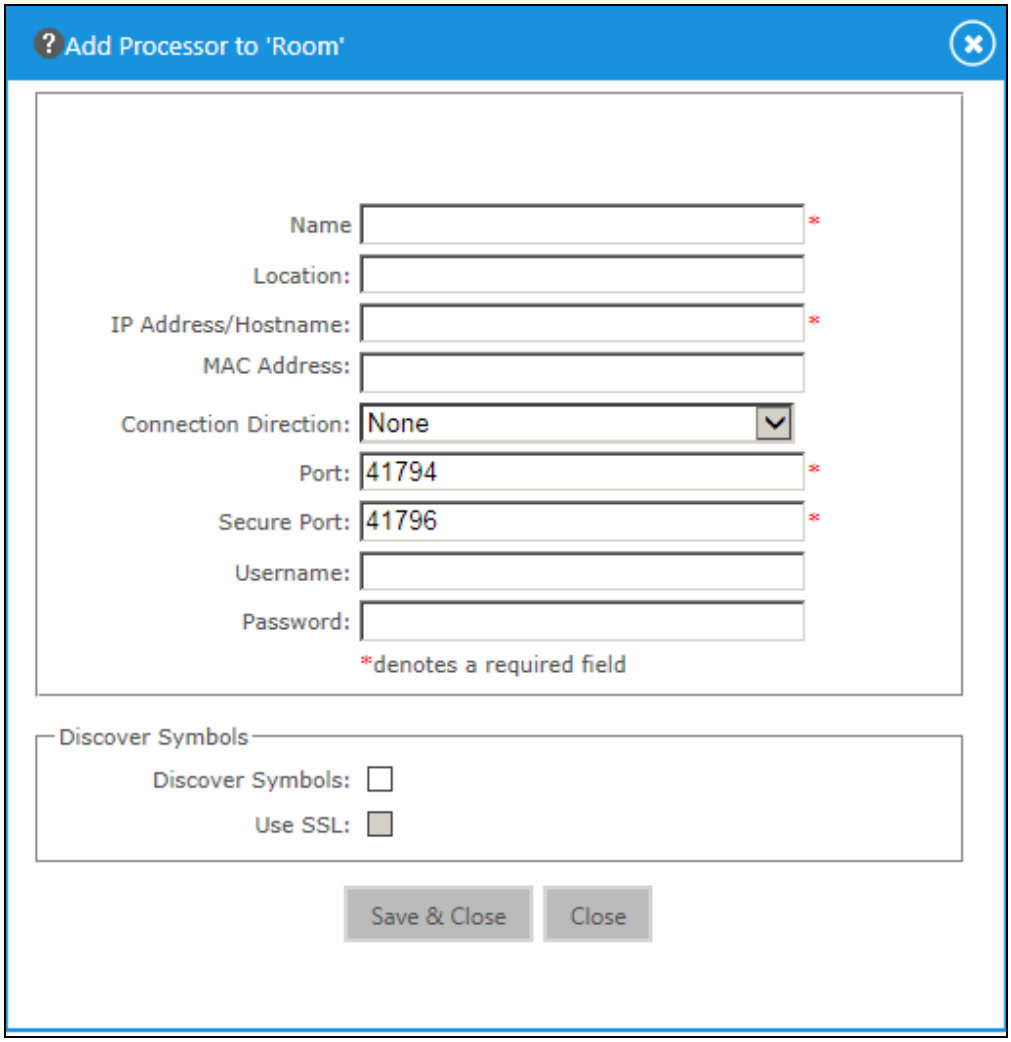
10. Select the **Processors** tab, and then select **Add**.

Processors Tab



The **Add Processor to 'Room'** dialog box opens.

Add Processor to 'Room' Dialog Box



11. Enter the processor information into the required fields as indicated by the red asterisks. Enter optional information as desired.
12. Select the **Discover Symbols** check box.

    NOTE: If the **Discover Symbols** check box is selected in the **Add Processor to 'Room'** dialog box and the control program symbol being used is version 7.2 or higher, the Symbol Discover feature automatically imports the symbol information into the Crestron Fusion database.

13. Select the **Use SSL** check box if **Discover Symbols** was selected and if the processor is configured for Secure CTP Toolbox connections only.

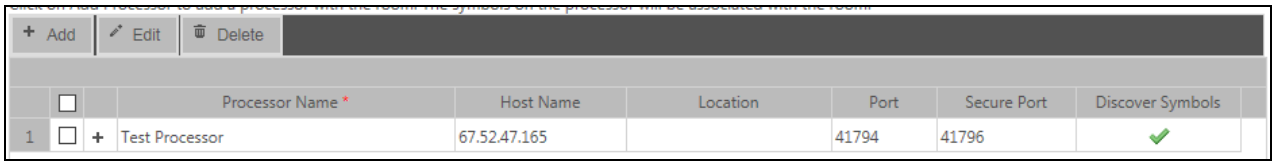
    NOTE: In the Crestron SystemBuilder™ and D3 Pro® platforms, the Symbol Discover feature is not supported on symbols below version 7.2.

14. Select **Save & Close**.

NOTE: Steps 15 through 21 are not necessary if the **Discover Symbols** check box is selected in the **Add Processor to 'Room'** dialog box.

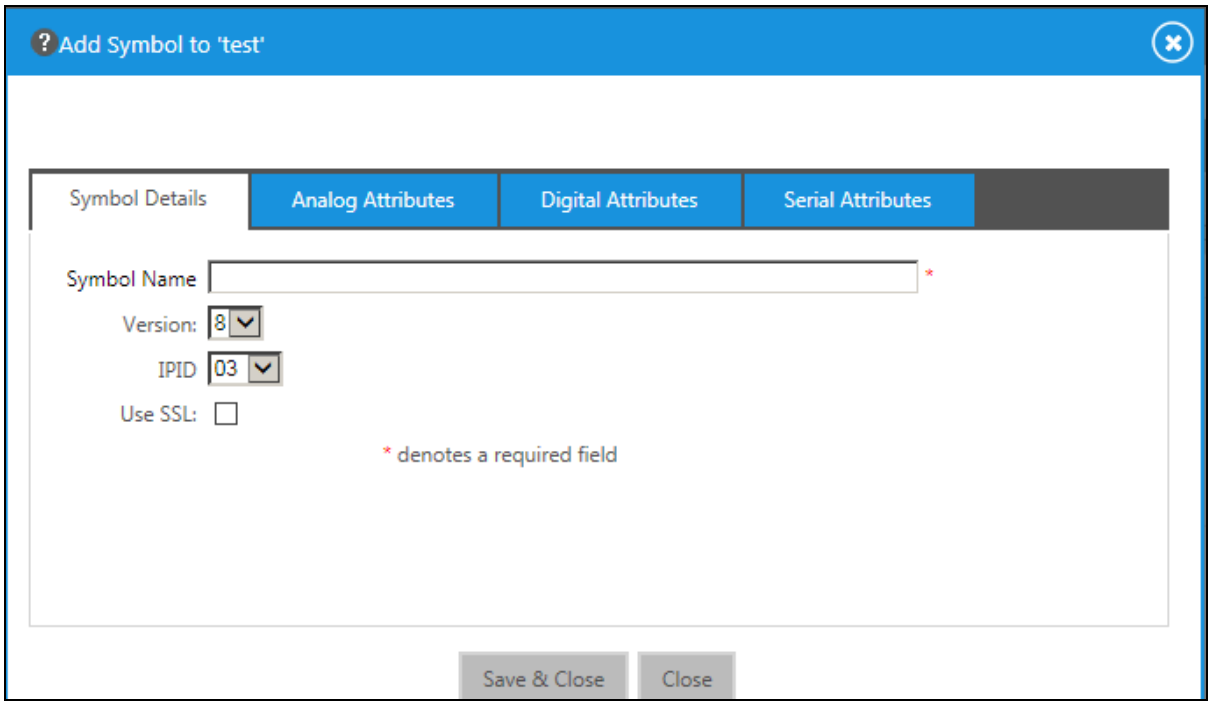
15. Select the plus (**+**) symbol next to the processor name to add, edit, or delete a symbol.

Add, Edit, or Delete Symbol



16. Select **Add**. The **Add Symbol to 'New Processor'** dialog box opens with the **Symbol Details** tab selected.

Symbol Details Tab



17. In the **Symbol Name** field, enter a name. Enter optional information as desired.
18. Set the **Version** and the **IPID** to match the Crestron Fusion symbol in the program.

NOTE: The version 8 symbol is the same as the Crestron Fusion Room symbol in SIMPL. If using SystemBuilder or D3 Pro, select the version 6 symbol.

19. Select the **Use SSL** check box if the processor is configured for Secure CIP connections only.
20. Select **Save & Close** to save the symbol; select **Save & Close** again to save the room.

NOTE: To associate the room with a node other than the selected **Rooms** node, select and drag the new room to that node.

Room Control and Monitoring

Room monitoring and control in Crestron Fusion use the following attributes.

System Monitors (Read Only)

Type	Function
Serial	Crestron Fusion Error Message
Serial	Crestron Fusion Log Text
Serial	Crestron Fusion Device Usage

Controller (Read Only)

Type	Function
Serial	Name
Serial	Hostname
Serial	IP Address
Serial	Subnet Mask
Serial	Default Router
Digital	Connected

Environment (Read Only)

Type	Function
Analog	System Volume

Environment (Read/Write)

Type	Function
Digital	System Power
Digital	System Mute

Switch (Read Only)

Type	Function
Serial	Display Name
Serial	Model
Serial	Input Channels Enabled
Serial	Output Channels Enabled

Type	Function
Serial	Input 1 Name
Serial	Input 2 Name
Serial	Input 3 Name
Serial	Input 4 Name
Serial	Input 5 Name
Serial	Input 6 Name
Serial	Input 7 Name
Serial	Input 8 Name
Serial	Input 9 Name
Serial	Input 10 Name
Serial	Output 1 Name
Serial	Output 2 Name
Serial	Output 3 Name
Digital	Connected

Monitor the assets connected to the room with the following attributes:

DM Transmitter (Read Only)

Type	Function
Digital	Connected

DM Receiver (Read Only)

Type	Function
Digital	Connected

TSW-752/TSW-1052 (Read Only)

Type	Function
Digital	Connected

TSW-760/TSW-1060 (Read Only)

Type	Function
Digital	Connected

Flat Panel Display (Read Only)

Type	Function
Digital	Connected

Blu-ray Disc Player (Read Only)

Type	Function
Digital	Connected

AM-100/AM-101 (Read Only)

Type	Function
Digital	Connected

AM-200/AM-300 (Read Only)

Type	Function
Digital	Connected

MP-B10/MP-B20 (Read Only)

Type	Function
Digital	Connected

C2N-IO (Read Only)

Type	Function
Digital	Connected

SSC/SSW/SIW (Read Only)

Type	Function
Digital	Connected

Cable TV Receiver (Read Only)

Type	Function
Digital	Connected

Projector (Read Only)

Type	Function
Digital	Connected

Video Server (Read Only)

Type	Function
Digital	Connected

Occupancy Sensor (Read Only)

Type	Function
Analog	Online Status
Digital	OccSensorEnabled
Analog	OccSensorTimeout
Serial	Room Occupancy Information
Digital	Room Occupied
Digital	Room Unoccupied

Appendix B: Device Configuration

Each device that is compatible with .AV Framework for the DMPS3 device has specific fields that must be configured when the device is added to the system. The tables below provide information about the various configuration fields associated with each device class.

> **NOTE:** As of .AV Framework version 6.31, the **Model** field is populated automatically when adding the device from the **Add Device** dialog box. The **Model** supported values in the tables below are provided as a reference to show all possible models per device class (where applicable).

AirMedia

Add New Device Fields - AirMedia

Field	Description	Supported Values
Display Name	The user defined AirMedia device name	
Model	The AirMedia device model name	**AM-100**, **AM-101**, **AM-200**, **AM-300**, **AM-3100**, **AM-3200**
Control	The transport method used for device control	**IP ID**
IP ID	The IP ID of the AirMedia device	

Audio Mixer

Add New Device Fields - Audio Mixer

Field	Description	Supported Values
Display Name	The user defined audio mixer name	
Model	The audio mixer model name	[Any supported audio mixer]
IP	The audio mixer IP address on the network	
Input Channels	The name and mute behavior for supported audio mixer input channels	
Output Channels[1]	The name and primary audio behavior for supported audio mixer output channels	

[1] A maximum of two output channels can be selected for control. Once two output channels are selected, the **Primary Audio Enabled** toggle for all other output channels is grayed out and cannot be selected until an active channel is deselected.

Blu-ray™ Player

Add New Device Fields - Blu-ray™ Player

Field	Description	Supported Values
Display Name	The user defined Blu-ray player name	
Model	The Blu-ray player model name	[Any supported Blu-ray player]
Control	The transport method used for device control	**Serial**, **IP**, **IR**
Communications Port	The device port that controls the Blu-ray player	[Any unused communication port for the selected transport method in the system]
IP[1]	The Blu-ray player IP address on the network	
Port[1]	The Blu-ray player web port	

[1] This field is provided when an IP-controlled Blu-ray player is selected for **Model**.

Button Panel

Add New Device Fields - Button Panel

Field	Description	Supported Values
Display Name	The user defined button panel name	
Model	The button panel model name	**MP-B10 Cresnet**, **MP-B10 Cresnet Bus**[1], **MP-B10 IPID**, **MP-B20 Cresnet**, **MP-B20 Cresnet Bus**[1], **MP-B20 IPID** , **MPC3-101 Button Mode**[2], **MPC3-102 Button Mode**[2], **MPC3-201 Button Mode**[2], **MPC3-302 Button Mode**[2]
Control	The transport method used for device control	**Cresnet**, **IP ID**, **Cresnet Bus**
Cresnet ID[3]	The Cresnet ID of the button panel	
IP ID[4]	The IP ID used to connect the button panel to the server	
Gateway Bus[5]	The bus that the button panel is connected to on the Cresnet gateway	

[1] This value is provided only when a Cresnet gateway has been added to the system.
[2] Transport settings are configured on the MPC3 device when placed in button-only mode.
[3] This field is provided when **MP-B10 Cresnet** or **MP-B20 Cresnet** is selected for **Model**.
[4] This field is provided when **MP-B10 IPID**, **MP-B20 IPID**, **MPC3-101 Button Mode**, **MPC3-102 Button Mode**, **MPC3-201 Button Mode**, or **MPC3-302 Button Mode** is selected for **Model**.
[5] This field is provided when **MP-B10 Cresnet Bus** or **MP-B20 Cresnet Bus** is selected for **Model**.

NOTE: The **Add New Device** dialog box also provides a **Configure Buttons** selection when **Button Panel** is selected as the device type, which can be used to configure individual buttons on the button panel. For more information, refer to MPC3/MP-B10/MP-B20 on page 104.

Cable Caddy

Add New Device Fields - Cable Caddy

Field	Description	Supported Values
Display Name	The user defined cable caddy name	
Model	The cable caddy model name	**TT-100 Cresnet**, **TT-100 Cresnet Bus**[1], **TT-100 USB**
Control	The transport method used for device control	**Cresnet**, **USB**, **Cresnet Bus**
Default Source[2]	The default DMPS3 device input channel used by the cable caddy	[Any unused DMPS3 device input channel]
Secondary Source[2]	The secondary DMPS3 device input channel used by the cable caddy	[Any unused DMPS3 device input channel]
Cresnet ID[3]	The Cresnet ID of the cable caddy	
Communications Port[4]	The device port used to control the cable caddy	[Any unused communication port for the selected transport method in the system][5]
Gateway Bus[6]	The bus that the cable caddy is connected to on the Cresnet gateway	

[1] This value is provided only when a Cresnet gateway has been added to the system.
[2] The cable caddy attempts to create a route from the default source first. If the cable caddy cannot create a route from the default source, it automatically switches to the secondary source.
[3] This field is provided when **TT-100 Cresnet** is selected for **Model**.
[4] This field is provided when **TT-100 USB** is selected for **Model**.
[5] The DMPS3 device must support USB routing to have its ports display on this list. If a DMPS3-4K-250-C or DMPS3-4K-350-C is used, a device that supports USB routing (such as the DM-TX-401-C) must be added to the .AV Framework system.
[6] This field is provided when **TT-100 Cresnet Bus** is selected for **Model**.

Cable TV

Add New Device Fields - Cable TV

Field	Description	Supported Values
Display Name	The user defined cable TV receiver name	
Model	The cable TV receiver model name	[Any supported cable TV receiver]
Control	The transport method used for device control	**IP**, **IR**

Field	Description	Supported Values
Communications Port[1]	The device port that controls the cable TV receiver	[Any unused communication port for the selected transport method in the system]
IP[2]	The cable TV receiver IP address on the network	
Port[2]	The cable TV receiver web port	

[1] This field is provided when an IR-controlled cable TV receiver is selected for **Model**.
[2] This field is provided when an IP-controlled cable TV receiver is selected for **Model**.

Cresnet Gateway

Add New Device Fields - Cresnet Gateway

Field	Description	Supported Values
Display Name	The user defined Cresnet gateway name	
Model	The Cresnet gateway model name	**DIN-CENCN-2**
Control	The transport method used for device control	**IP ID**
IP ID	The IP ID of the Cresnet gateway	

Crestron IO

Add New Device Fields - Crestron IO

Field	Description	Supported Values
Display Name	The user defined Crestron I/O device name	
Model	The Crestron I/O device model name	**C2N-IO**, **C2N-IO Bus**[1], **CEN-IO-COM-102**, **CEN-IO-IR-104**,**CEN-IO-IR-204**, **CEN-IO-RY-104**, **CEN-IO-RY-204**, **HD-CTL-101**
Control	The transport method used for device control	**Cresnet**, **IP ID**, **Cresnet Bus**
Cresnet ID[2]	The Cresnet ID of the Crestron I/O device	
IP ID[3]	The IP ID used to connect the Crestron I/O device to the server	
Gateway Bus[4]	The bus that the Crestron I/O device is connected to on the Cresnet gateway	

[1] This value is provided only when a Cresnet gateway has been added to the system.
[2] This field is provided when **C2N-IO** is selected for **Model**.
[3] This field is provided when **CEN-IO-COM-102**, **CEN-IO-IR-104**, **CEN-IO-IR-204**, **CEN-IO-RY-104**, **CEN-IO-RY-204**, or **HD-CTL-101** is selected for **Model**.
[4] This field is provided when **C2N-IO Bus** is selected for **Model**.

Custom Conference Control

Add New Device Fields - Custom Conference Control

Field	Description	Supported Values
Display Name	The user defined custom conference controller name	
Model	The custom conference controller type	**Cisco Webex Room Kit Mini**, **Microsoft Teams Conferencing**, **Zoom Room Controls**, **Google Meet**

Digital Graphics Engine

Add New Device Fields - Digital Graphics Engine

Field	Description	Supported Values
Display Name	The user defined digital graphics engine name	
Model	The digital graphics engine model name	**DM-DGE-200C**
Control	The transport method used for device control	**IP ID**
IP ID	The IP ID of the digital graphics engine	

DigitalMedia Receiver

Add New Device Fields - DigitalMedia Receiver

Field	Description	Supported Values
Display Name	The user defined DigitalMedia receiver name	
Model	The DigitalMedia receiver model name	**DM-RMC-4K-100-C**, **DM-RMC-4K-100-C-1G**, **DM-RMC-4KZ-100-C**
Control[1]	The transport method used for device control	**IP ID**
Digital Media	Sets whether the DigitalMedia receiver is connected to the DMPS3 device via DM	**Yes**, **No**
IP ID[1]	The IP ID of the DigitalMedia receiver	

[1] These fields are provided when **No** is selected for **Digital Media**.

DigitalMedia Scaling Receiver

Add New Device Fields - DigitalMedia Scaling Receiver

Field	Description	Supported Values
Display Name	The user defined DigitalMedia scaling receiver name	
Model	The DigitalMedia scaling receiver model name	**DM-RMC-200-C**, **DM-RMC-4K-SCALER-C**, **DM-RMC-4KZ-SCALER-C**, **DM-RMC-SCALER-C**
Control[1]	The transport method used for device control	**IP ID**
Digital Media	Sets whether the DigitalMedia scaling receiver is connected to the DMPS3 device via DM	**Yes**, **No**
IP ID[1]	The IP ID of the DigitalMedia scaling receiver	

Field	Description	Supported Values
Resolution	The desired scaling resolution output of the DigitalMedia scaling receiver	**EDID Preferred**, **640x480 60Hz PC**, **720x480p 60Hz NTSC**, **720x576i 25Hz PAL**, **720x576p 50Hz PAL**, **800x600 60Hz PC**, **848x480 60Hz PC**, **1024x768 60Hz PC**, **1280x720p 50Hz PAL**, **1280x720p 60Hz NTSC**, **1280x768 60Hz PC**, **1280x768 60Hz PC RB**, **1280x800 60Hz PC**, **1280x800 60Hz PC RB**, **1280x960 60Hz PC**, **1280x1024 60Hz PC**, **1360x768 60Hz PC**, **1366x768 60Hz PC**, **1366x768 60Hz PC RB**, **1400x1050 60Hz PC**, **1400x1050 60Hz PC RB**, **1440x900 60Hz PC**, **1440x900 60Hz PC RB**, **1600x900 60Hz PC RB** **1600x1200 60Hz PC**, **1680x1050 60Hz PC**, **1680x1050 60Hz PC RB**, **1920x1080i 25Hz PAL**, **1920x1080i 30Hz NTSC**, **1920x1080p 50Hz PAL**, **1920x1080p 60Hz NTSC**, **1920x1200 60Hz PC RB**, **2048x1152 60Hz PC RB**, **2048x1080 At 60Hz**[2], **1792x1344 PC**[2], **1856x1392 PC**[2], **1920x1440 PC**[2], **2048x1536 PC**[2], **2560x1080 PC**[2], **2560x1440 PC**[2], **2560x1600 PC RB**[2], **3840x2160p At 24Hz**[2], **3840x2160p At 25Hz**[2], **3840x2160p At 30Hz**[2], **4096x2160p At 24Hz**[2], **4096x2160p At 25Hz**[2], **4096x2160p At 30Hz**[2], **3840x2160p At 50Hz**[2],

Field	Description	Supported Values
		3840x2160p At 60Hz[2], **4096x2160p At 50Hz**[2], **4096x2160p At 60Hz**[2], **4096x2160p At 60Hz PC VESA RB V2**[2], **1680x720 At 24Hz**[2], **1680x720 At 25Hz**[2], **1680x720 At 30Hz**[2], **1680x720 At 50Hz**[2], **1680x720 At 60Hz**[2], **2560x1080 At 24Hz**[2], **2560x1080 At 25Hz**[2], **2560x1080 At 30Hz**[2], **2560x1080 At 50Hz**[2], **2560x1080 At 60Hz**[2],
Display Mode	The desired display mode of the DigitalMedia scaling receiver	**Maintain**, **Stretch**, **Zoom**

[1] These fields are provided when **No** is selected for **Digital Media**.
[2] These output resolutions are available only when the **DM-RMC-4K-SCALER-C** is used.

DigitalMedia Transmitter

Add New Device Fields - DigitalMedia Transmitter

Field	Description	Supported Values
Display Name	The user defined DigitalMedia transmitter name	
Model	The DigitalMedia transmitter model name	**DM-TX-200-C-2G**, **DM-TX-201-C**, **DM-TX-401-C**, **DM-TX-4K-100-C-1G**, **DM-TX-4KZ-100-C-1G**, **DM-TX-4K-202-C**, **DM-TX-4K-302-C**, **DM-TX-4KZ-202-C**, **DM-TX-4KZ-302-C**, **HD-TX-101-C-1G-E**, **HD-TX-301-C-E**
Control[1]	The transport method used for device control	**IP ID**
Digital Media	Sets whether the DigitalMedia transmitter is connected to the DMPS3 device via DM	**Yes**, **No**
IP ID[1]	The IP ID of the DigitalMedia transmitter	

[1] These fields are provided when **No** is selected for **Digital Media**.

Flat Panel Display

Add New Device Fields - Flat Panel Display

Field	Description	Supported Values
Display Name	The user defined flat panel display name	
Model	The flat panel display model name	[Any supported display]
Control	The transport method used for device control	**CEC**, **IP ID**, **IP**, **Serial**, **IR**
Default Input[1]	The default input of the flat panel display in the system	[Any available input of the appropriate type in the system]
Communications Port[2,5,6]	The device port that controls the flat panel display	[Any unused communication port for the selected transport method in the system]
IP ID[3]	The IP ID of the flat panel display	
IP/Hostname[4]	The flat panel display IP address or hostname	
Port[4]	The flat panel display web port	
Channel[4,5]	The display Wi-Fi® network channel	
Warm Up Time[7,8]	The duration that a "warming up" message is displayed on the .AV Framework UI after the display is powered on, in seconds	[Minimum value is the default defined by the device driver; maximum value is 300 seconds]
Cool Down Time[7,8]	The duration that a "cooling down" message is displayed on the .AV Framework UI after the display is powered off, in seconds	[Minimum value is the default defined by the device driver; maximum value is 300 seconds]
User Name[9]	The username (required or optional) for initiating device control communications	
Password[9]	The password (required or optional) for initiating device control communications	

[1] This field is provided when a display that uses a transport method for device control is selected.
[2] This field is provided when a CEC-controlled display is selected for **Model**.
[3] This field is provided when a Crestron Connected controlled display is selected for **Model**.
[4] Some or all these fields are provided when an IP-controlled display is selected for **Model** and **IP/Hostname** is selected for **Control**.
[5] Some or all these fields are provided when a serial-controlled display is selected for **Model** and **Serial** is selected for **Control**.
[6] Some or all these fields are provided when a serial-controlled display is selected for **Model** and **IR** is selected for Control.
[7] All controls on the user interface are temporarily locked out until the message times out.
[8] These fields are provided only if the display driver supports this functionality.
[9] These fields are provided when a device driver for a display requires a username and password to initiate control communications.

Occupancy Sensor

Add New Device Fields - Occupancy Sensor

Field	Description	Supported Values
Display Name	The user defined occupancy sensor name	
Model	The occupancy sensor model name	**CEN-ODT-C-POE**, **GLS-ODT-C-CN**, **GLS-ODT-C-CN Bus**[1], **GLS-OIR-C-CN**, **GLS-OIR-C-CN Bus**[1]
Control	The transport method used for device control	**Cresnet**, **Cresnet Bus**, **IP ID**
Cresnet ID[2]	The Cresnet ID of the occupancy sensor	[Any available input of the appropriate type in the system]
Gateway Bus[3]	The bus that the occupancy sensor is connected to on the Cresnet gateway	
IP ID[4]	The IP ID of the occupancy sensor	
Use Sensor Timeout	Sets whether system timeout is determined by the occupancy sensor device (For example, if **Yes** is selected, the system times out if no occupancy is detected in a room)	**Yes**, **No**
Timeout Minutes[5]	The duration in minutes that it takes for the system to time out if sensor timeout is not used	**Yes**, **No**
Turn System On	Sets whether the .AV Framework system turns on if motion is detected by the occupancy sensor device	**Yes**, **No**
Turn System Off	Sets whether the .AV Framework system turns off if no occupancy is detected by the occupancy sensor device	**Yes**, **No**
Route Default Video	Sets whether default video is routed when the occupancy sensor turns on the .AV Framework system.	**Yes**, **No**

[1] This value is provided only when a Cresnet gateway has been added to the system.
[2] This field is provided when **GLS-ODT-C-CN** or **GLS-OIR-C-CN** is selected for **Model**.
[3] This field is provided when **GLS-ODT-C-CN Bus** or **GLS-OIR-C-CN Bus** is selected for **Model**.
[4] This field is provided when **CEN-ODT-C-POE** is selected for **Model**.
[5] This field is provided when **No** is selected for **Use Sensor Timeout**.

Projector

Add New Device Fields - Projector

Field	Description	Supported Values
Display Name	The user defined projector name	
Model	The projector model name	[Any supported projector]
Control	The transport method used for device control	**IP**, **Serial**, **IP ID**
Default Input	The default input of the projector in the system	[Any available input of the appropriate type in the system]
IP/Hostname[1]	The projector IP address or hostname	
Port[1]	The projector web port	
Communications Port[2]	The device port that controls the projector	[Any unused communication port for the selected transport method in the system]
IP ID[3]	The IP ID of the projector	
Warm Up Time[4,5]	The duration that a "warming up" message is displayed on the .AV Framework user interface after the projector is powered on, in seconds	[Minimum value is the default defined by the device driver; maximum value is 300 seconds]
Cool Down Time[4,5]	The duration that a "cooling down" message is displayed on the .AV Framework user interface after the projector is powered off, in seconds	[Minimum value is the default defined by the device driver; maximum value is 300 seconds]
User Name[6]	The username (required or optional) for initiating device control communications	
Password[6]	The password (required or optional) for initiating device control communications	

[1] These fields are provided when **IP/Hostname** is selected for **Control**.
[2] This field is provided when **Serial** is selected for **Control**.
[3] This field is provided when **IP ID** is selected for **Control**.
[4] All controls on the user interface are temporarily locked out until the message times out.
[5] These fields are provided only if the display driver supports this functionality.
[6] These fields are provided when a device driver for a projector requires a username and password to initiate control communications.

> **NOTE:** If the selected projector driver supports video mute, a blank projector screen is outputted to the projector when video mute is turned on.

Room Availability Hallway Sign

Add New Device Fields - Room Availability Hallway Sign

Field	Description	Supported Values
Display Name	The user defined room availability hallway sign name	
Model	The room availability hallway sign model name	**SSW/SSC/SIW**, **SSW/SCC/SIW Bus**[1]
Control	The transport method used for device control	**Cresnet**, **Cresnet Bus**
Cresnet ID[2]	The Cresnet ID of the room availability hallway sign	
Gateway Bus[3]	The bus that the room availability hallway signe is connected to on the Cresnet gateway	

[1] This value is provided only when a Cresnet gateway has been added to the system.
[2] This field is provided when **SSW/SSC/SIW** is selected for **Model**.
[3] This field is provided when **SSW/SSC/SIW Bus** is selected for **Model**.

Touch Screen

Add New Device Fields - Touch Screen

Field	Description	Supported Values
Display Name	The user defined touch screen name	
Model	The touch screen model name	**TS/TSW-1070**, **TS/TSW-770**, **TST-1080**, **TSW-1052**, **TSW-1060**, **TSW-752**, **TSW-760**, **Webx**
Control	The transport method used for device control	**IP ID**
IP ID	The IP ID of the touch screen	

NOTE: Select Webx using the Model drop-down menu when configuring a virtual touch screen project with the .AV Framework program's built-in XPanel interface. For more information, refer to XPanel on page 100.

Video Server

Add New Device Fields - Video Server

Field	Description	Supported Values
Display Name	The user defined video server name	

Field	Description	Supported Values
Model	The video server model name	[Any supported video sever]
Control	The transport method used for device control	**IP**, **IR**, **CEC**
Communications Port[1]	The device port that controls the video server	[Any unused communication port for the selected transport method in the system]
IP[2]	The video server IP address on the network	
Port[2]	The video server web port	

[1] This field is provided when **IR** or **CEC** is selected for **Control**.
[2] These fields are provided when **IP** is selected for **Control**.

Appendix C: Advanced Routing Behavior and Use Cases

.AV Framework supports advanced routing on the DMPS3 device to support a wide variety of commercial and educational applications.

This appendix explains the different advanced routing behaviors and provides sample use cases to show how these advanced routes function within different .AV Framework systems. For more information on configuring advanced routing behavior using the web configuration utility, refer to Configuration on page 15.

> **NOTE:** Output 1 on the DMPS3 device supports manual routes only. Fixed routes and follows routes are only supported on other video output channels.

Interactive Classroom (Fixed Routing)

When **Fixed** video routing is selected for a DMPS3 output channel, the output channel receives a video source from a chosen input channel only after the first manual route is created on the system.

For example, if Output 2 is configured to receive a fixed video route from Input 6, this route remains constant regardless of any manual routes that are created on the system.

The following use case describes an interactive classroom that uses fixed routing.

System components:

DMPS3 Device: DMPS3-4K-350-C

- Device inputs
    - Input 1: Instructor PC
    - Input 2: Laptop
    - Input 3: Document camera
    - Input 4: AM-3100 AirMedia device
    - Input 5: Blu-ray Disc player
- Device outputs
    - Output 1: Not used
    - Output 2: Display monitor (configured for fixed routing to Input 1)
    - Output 3: Projector (configured for manual routing)
- LAN connection
    - TSW-1070 touch screen

- Cresnet connection
    - GLS-ODT-C-CN occupancy sensor

In this use case, the classroom display monitor (Output 2) is configured to have a fixed route to the instructor PC (Input 1). This fixed route remains constant even if one of the other inputs, such as the Laptop (Input 2), is routed manually to the projector (Output 3) through the .AV Framework touch screen project.

Town Hall Meeting Space (Follows Routing)

When Follows video routing is selected for a DMPS3 output channel, the output channel receives a video source from another chosen output channel that is configured for manual routing.

For example, if a user manually routes video from Input 1 to Output 1, and Output 2 is set to follow Output 1, video from Input 1 is also shown on Output 2.

The following use case describes a town hall meeting space that uses follows routing.

System components:

DMPS3 Device: DMPS3-4K-250-C

- Device inputs
    - Input 1: DM-TX-100-C-1G DigitalMedia transmitter
    - Input 2: AM-3100 AirMedia device
    - Input 3: Blu-ray Disc player
    - Input 4: Digital signage player
- Device outputs
    - Output 1: Display monitor for speaker (manual routing)
    - Output 3: DM-RMC-4KZ-SCALER-C connected to large display monitor for audience (configured for follows routing to output 1)
- LAN connection
    - TSW-1070 touch screen

In this use case, the large display monitor for the audience (Output 3) is configured to follow any manual route created between an input and the speaker's display monitor (Output 1) through the touch screen project.

For example, if a manual route is created between a laptop that is presenting wirelessly via AirMedia (Input 2) and the speaker's display monitor (Output 1), the video source routed from the laptop is also routed to the large display monitor (Output 3).

Appendix D: Delete or Restore the .AV Framework Program

If necessary, the .AV Framework program can be deleted or restored from the DMPS3 device.

Delete the .AV Framework Program

To delete the .AV Framework program:

1. Connect to the DMPS3 device in Crestron Toolbox.
2. Select **View** > **System Info**. The **System Info** dialog box is displayed.
3. Locate the **Program** section on the top right of the **System Info** dialog box, and then select the play button. A new dialog box opens.
4. Select the .AV Framework program.
5. Select **Erase**.
6. In the new dialog box that is displayed, select **Erase All Program Files**.
7. When the confirmation dialog box opens, select **Yes**.

> **NOTE:** A custom user program can also overwrite the .AV Framework program.

Restore the .AV Framework Program

To return the .AV Framework configuration to its default settings, the .AV Framework program can be restored by issuing the `avfrestore restore` console command via the **Text Console** tool in Crestron Toolbox software.

> **CAUTION:** Issuing the command above will clear the existing .AV Framework configuration and any custom settings.

Appendix E: External Systems Integration

The external trigger system and paging integration allows for external digital events to trigger certain configured behavior within .AV Framework, such as system power off, audio mute, and paging via an external audio source.

The external events are triggered by mapping external triggers and paging source to a digital I/O input port of the DMPS3 device. The state of the circuitry, normally opened or normally closed, should be considered to determine if the event should be triggered. The I/O port, I/O input state, and behavior are configurable for both external events and paging sources, while the Aux input and fixed volume can also be configured for paging sources.

> **NOTE:** Crestron highly recommends thorough testing and configuration of the external systems integrations to ensure proper systems operation. The installation and the use of this product within a specific installation must be approved by applicable local, state, or federal Authority Having Jurisdiction (AHJ). All installations must be performed by a qualified personnel according to applicable local and regional codes and standards. Requirements vary between jurisdictions.

Compatibility

Refer to the following table to determine compatibility between the DMPS3 device and external systems integration.

External Systems Compatibility Matrix

Model	Switcher Type	Supports I/O	Supports Paging with Audio Behavior	Built-In Scaler
DMPS3-4K-50	Control System	No	No	Yes
DMPS3-4K-100-C	Control System	No	No	Yes
DMPS3-4K-150-C	Control System	Yes	Yes	Yes
DMPS3-4K-200-C	Control System	Yes	Yes	Yes
DMPS3-4K-250-C	Control System	Yes	Yes	Yes
DMPS3-4K-300-C	Control System	Yes	Yes	Yes
DMPS3-4K-350-C	Control System	Yes	Yes	Yes
DMPS3-200-C	Control System	Yes	AMP only	No
DMPS3-300-C	Control System	Yes	AMP only	No
DMPS3-300-AEC-C	Control System	Yes	AMP only	No

[1] Requires using a switcher with scaling that supports analog inputs.

Configuration Requirements

The following configuration requirements are present for external systems and paging integration:

- When external systems integration is not supported, all controls are turned off and grayed out.
- If the DMPS3 device does not have I/O ports, the configuration will be turned off.
- Turning off either trigger will remove the dependency on the I/O port and analog input port.
- When a required device or port is removed or deleted that is used by this external systems integration, the feature will be turned off.
- If the user changes the audio routing from **Yes** to any other setting, the system will need to be restarted.
- Selecting **Mute Audio** requires using an AMP or flat panel display/projector that supports being muted.
- Selecting **Mute Audio except for Paging** requires an output audio source that supports setting the volume with feedback and a switcher that supports analog inputs.
- Using a flat panel device or projector as the audio output source requires that the switcher supports routing an analog input to an output, that the display/projector device supports setting a volume; and that the routing configuration of **Yes with Volume Control** is set.

Trigger Behavior

The following trigger behavior is present for external systems and paging integration:

- External system triggers have a higher priority than paging triggers if both are configured. Paging will stop if an external system trigger occurs during the paging trigger.
- The trigger event is latched (opened) based on normally open or normally closed logic.
- On system restart or application restart, the trigger state will be reevaluated and trigger will be reapplied if necessary.
- Audio mute has the same behavior as a mute button:
    - The primary audio source (for example, the Program Audio or Display Volume source) will only be muted.
    - The other routed audio (for example, Aux 1, Aux 2, and secondary displays) sources will not be muted.
    - During the trigger event, the mute state will be held and the system will not allow it to be unmuted. When the muted trigger is completed, the system will remain muted.
- System off turns on the "Always off" power mode during the duration of the trigger.
- Mute with paging stops all current routes within the system and routes the analog input to a configured audio source.
- After a system off trigger, the system will power on based on the configured power settings:
    - If set to use business hours, the system will power on during the configured time range.
    - If set to use occupancy, the system will power on if occupancy is detected in the room.
    - If set to use sync-based, the system will not power on and must be powered on manually.

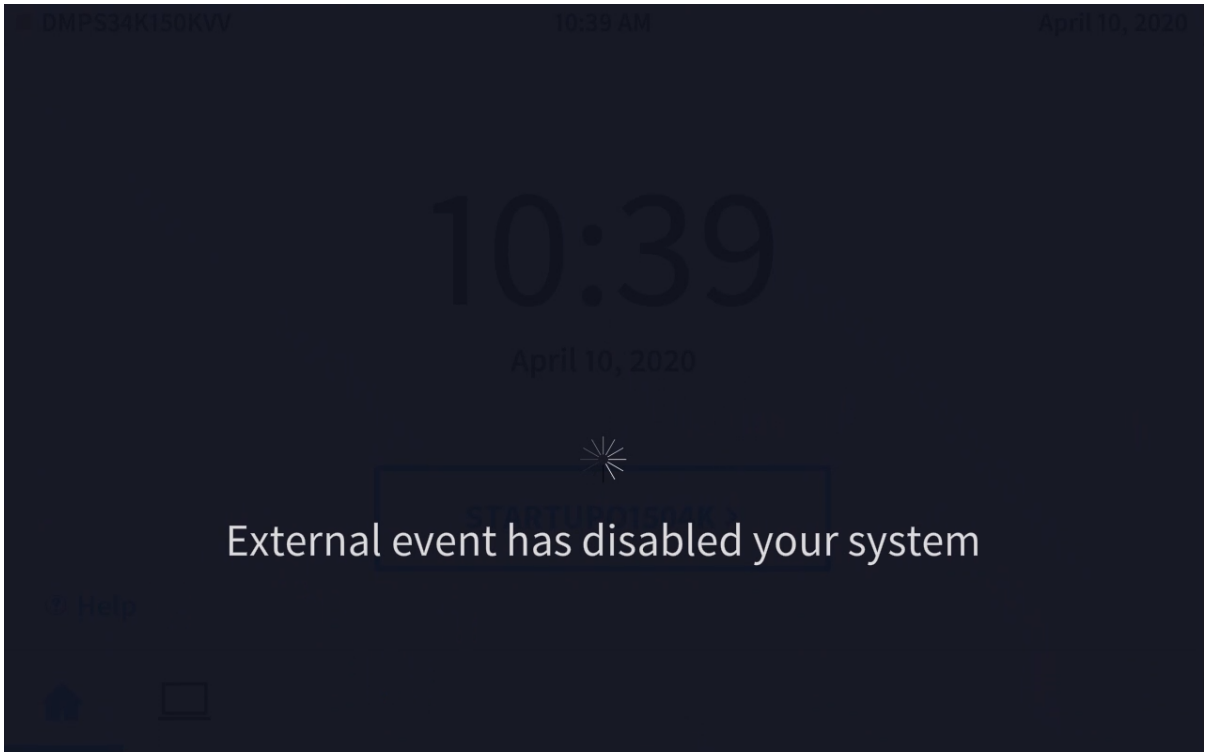
External System Considerations

The following considerations should be taken when setting up external system triggers within .AV Framework:

- The DMPS3 device must have an available I/O port that can be wired to the trigger.
- Normally open or normally closed logic should be chosen based on the system and the desired trigger behavior.

When an external system trigger is initiated, an "External event has disabled your system" message is displayed on the system control interface. No user actions can occur during this message and all routes are stopped.

External event has disabled your system Message



The message is displayed until the circuit logic is inverted.

Paging Considerations

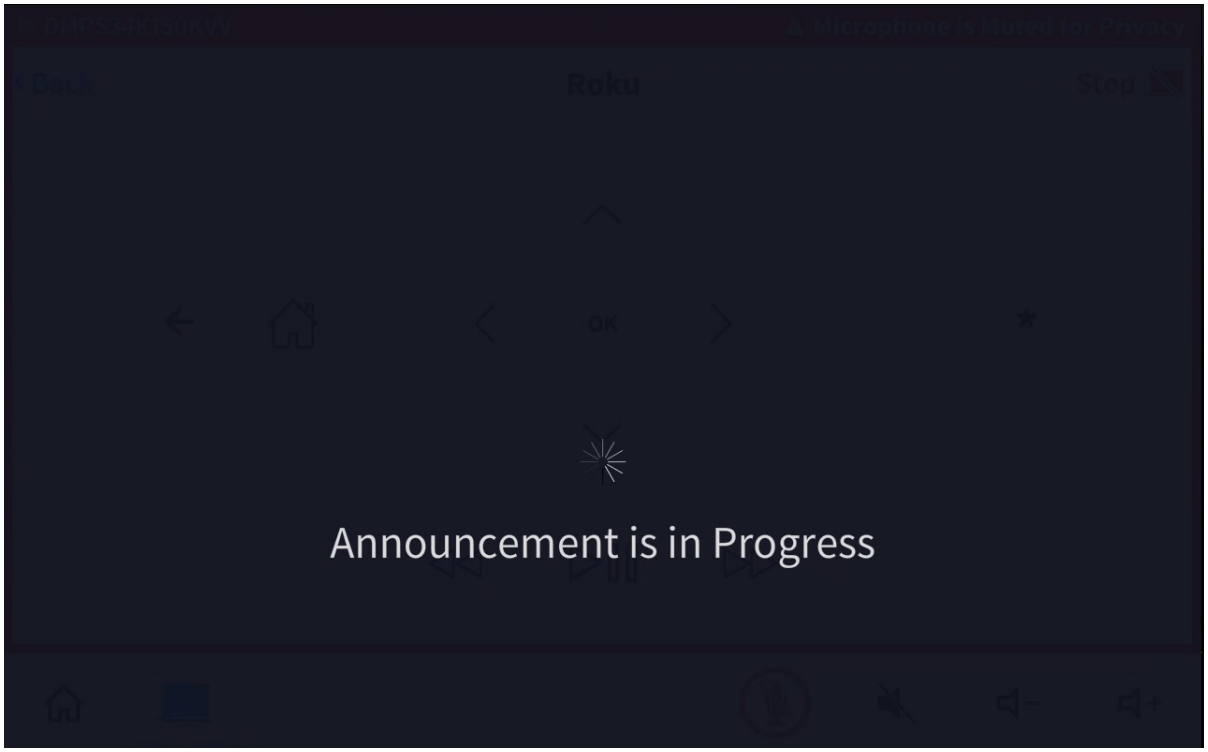
The following considerations should be taken when setting up paging triggers within .AV Framework:

- The DMPS3 device must support analog Aux inputs.
- The system must have an internal or external amplifier that is active.
- If the system does not support an external amplifier, the A/V display or projector that is the output speaker source must support the setting volume feature, and audio routing must be set to **Yes with volume control**.

- The DMPS3 device must have an available I/O port that can be wired to the trigger and an available audio output that can be routed to the paging source.
- Paging only works with the HDMI outputs on the DMPS3 device that have a scaler. Connections to DM endpoints are not supported. For devices with HDMI/DM ports, the HDMI channel will support paging and not the DM. If only the DM port of a HDMI/DM output is used, the system will allow it to be configured, but paging will not work.
- Normally open or normally closed logic should be chosen based on the system and the desired trigger behavior.

When a paging trigger is initiated, an "Announcement is in Progress" message is displayed on the system control interface. No user actions can occur during this message and all routes are stopped.

Announcement is in Progress Message



The message is displayed until the circuit logic is inverted.

Appendix F: Configure a Zoom Rooms Controller

.AV Framework provides functionality that allows for custom control buttons to be added to a Zoom Rooms controller application. These buttons are based on the inputs assigned within the .AV Framework system. .AV Framework will generate a JSON output based on the selected inputs. The output is then loaded into the Zoom Rooms controller application to create custom control buttons.

The following procedure describes how to add custom buttons to a Zoom Rooms controller using .AV Framework.

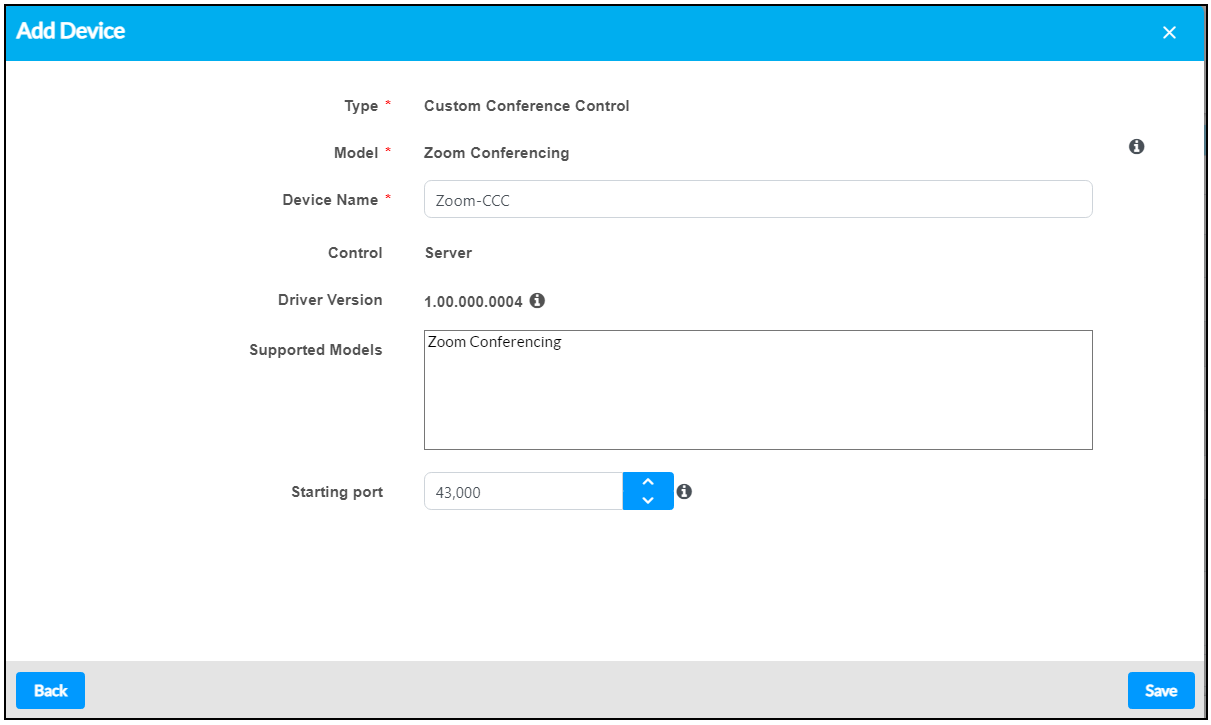
> **NOTE:** A Zoom® software account is required to use this functionality. Refer to your IT administrator for assistance.

.AV Framework Configuration

1. Navigate to **Settings** > **Manage Devices** within the .AV Framework web configuration interface.
2. Select **Add Device**. The **Add Device** dialog box is displayed.
3. Navigate to and select the appropriate Zoom Rooms device driver in the provided table. For more information on adding devices, refer to Manage Devices on page 54.
4. Enter a descriptive name for the device in the **Device Name** text field.
5. Select **Next**. Additional information and settings for the device are displayed.

   > **NOTE:** The Zoom Rooms device driver is imported from the cloud and installed into the .AV Framework system automatically.

Add Device Dialog Box - Custom Conference Control

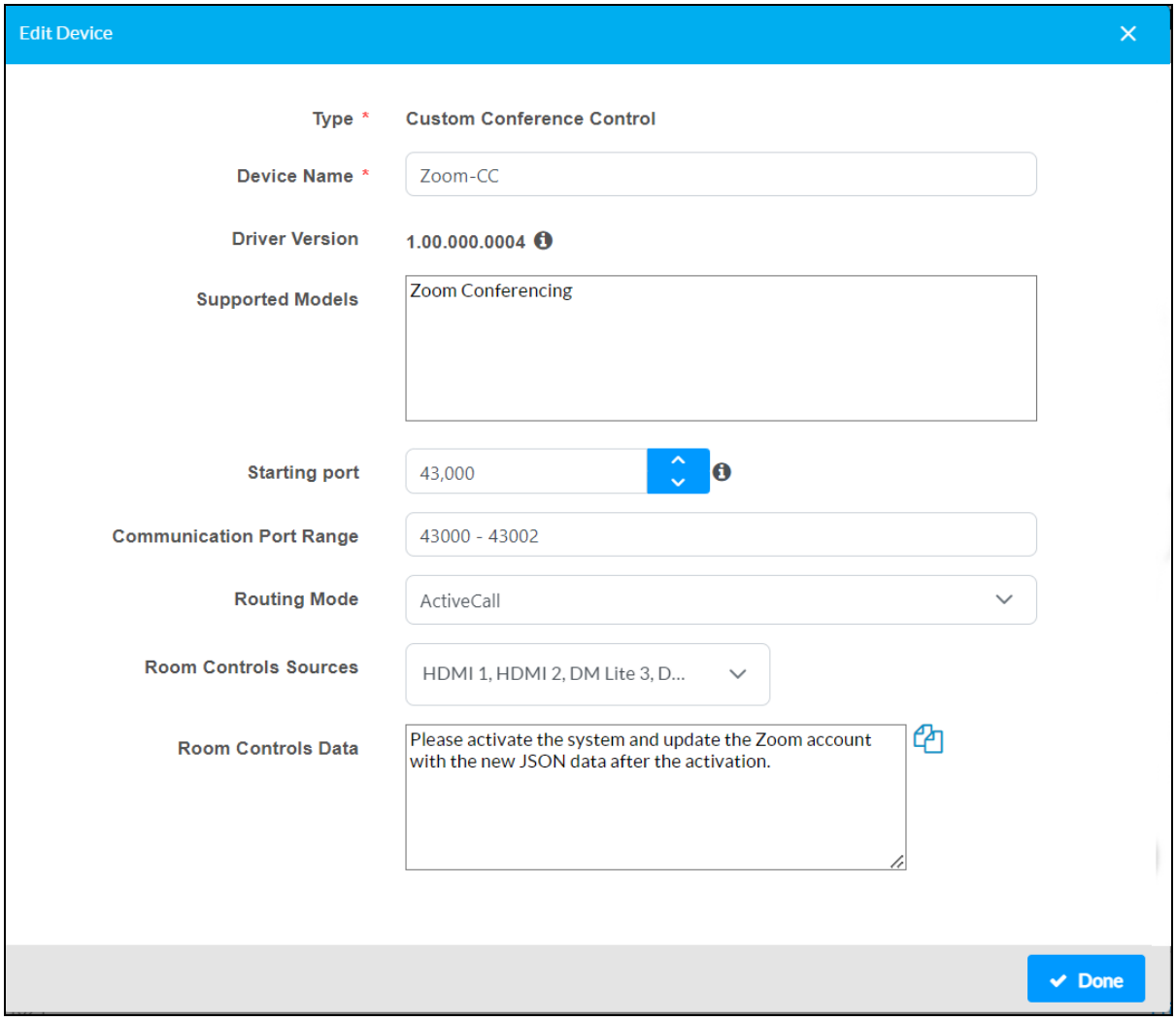


6. If required, enter a custom starting port into the **Starting port** text field. This port is used to set the port range for the Zoom Rooms controller.
7. Select **Save**. The Zoom Rooms controller is added to the device list for the .AV Framework system.

> **NOTE:** The .AV Framework system must be activated after adding the Zoom Rooms controller. The Zoom Rooms controller should also be added after adding and configuring all other input devices in the system, as the configuration options for the controller reflect the current input configuration for the system. For more information on configuring inputs, refer to Configuration on page 15.

8. Select the edit button next to the Zoom Rooms controller in the **Manage Devices** accordion. The **Edit Device** dialog box is displayed for the Zoom Rooms controller.

Edit Devices Dialog Box - Zoom Rooms Controller



9. Use the **Routing Mode** drop-down menu to select the routing behavior for the Zoom Rooms controller when an active Zoom call is detected.
    - **Manual**: The Zoom output source must be routed to any displays manually.
    - **ActiveCall**: The Zoom output source will be routed to all displays automatically.

    > **NOTE:** Observe the following points for active call routing:
    >
    > - No routing changes occur after the Zoom call is disconnected. Any routing that was in use prior to the Zoom call must be manually reset.
    > - If a switcher output (other than the **Zoom Capture** output) has a fixed route to a display, the Zoom call will not be routed to that output.
    > - If a switcher output (other than the **Zoom Capture** output) has a follows route to a display, the Zoom call will also be routed to that output.

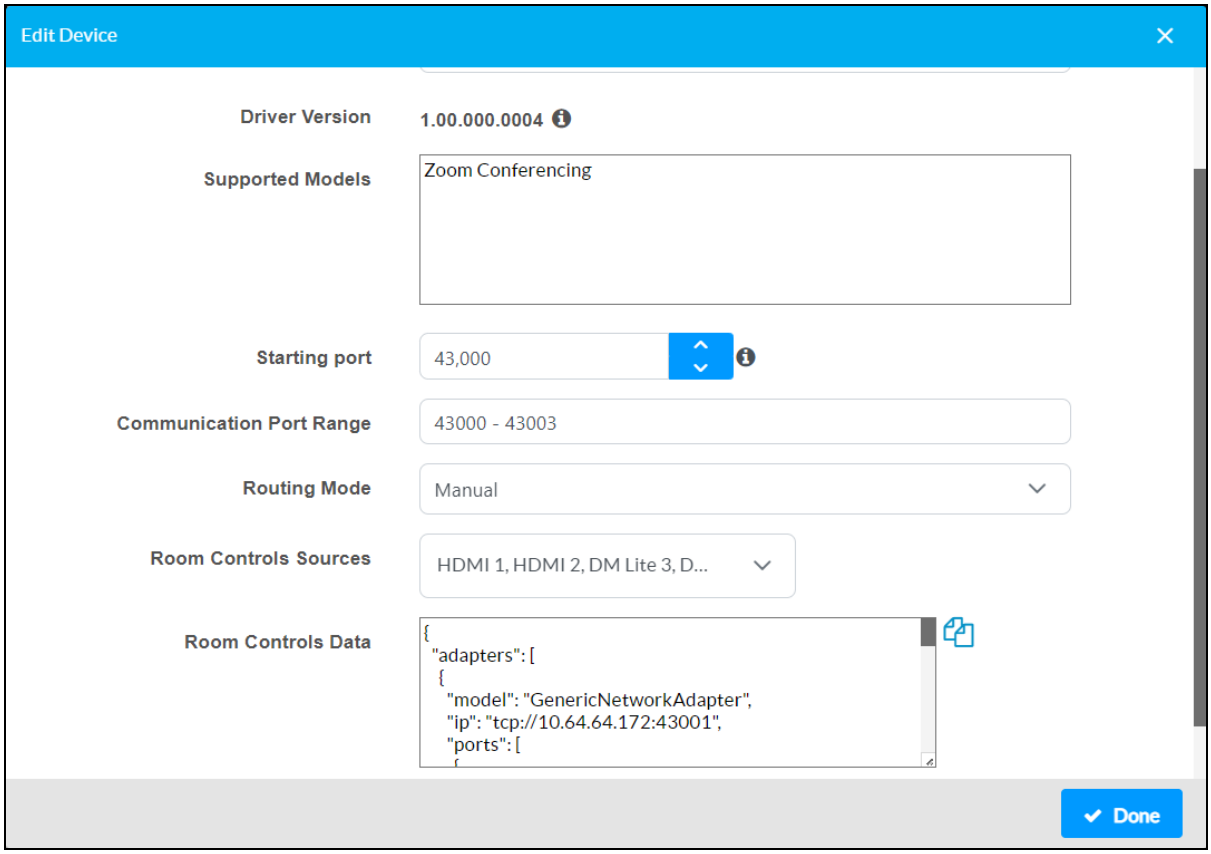
10. Use the **Room Controls Sources** drop-down menu to fill the check boxes next to the input devices that should have control buttons in the Zoom Rooms controller application. Any unchecked input device will not be shown.

    > **NOTE:** Switching between **Manual** and **ActiveCall** routing modes does not require a restart to the .AV Framework configuration. However, a restart is required if changes are made to the input devices in the **Edit Device** dialog box or to the input devices in the **AV Routing** settings accordion.

11. Select **Done**, then activate the .AV Framework system.
12. Reopen the **Edit Device** dialog box for the Zoom Rooms controller.
13. Select the copy button next to the **Room Controls Data** text field to copy the generated JSON output to the clipboard. This output will be required for configuration within the Zoom Rooms controller application.

    > **NOTE:** Any time that the input device list changes, a new JSON output must be generated and loaded into the Zoom Rooms controller application.

Edit Devices Dialog Box - Zoom Rooms Controller (Room Controls Data)



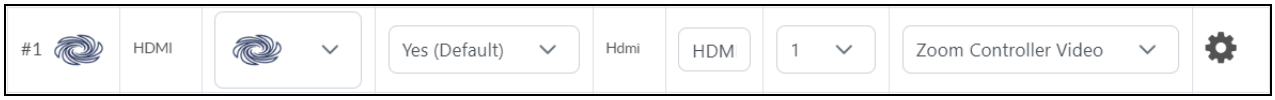
Configuration for a UC-ENGINE Device

If you are using a Crestron UC-ENGINE device and the output is connected to your .AV Framework switcher device, the following additional configuration is recommended:

> **NOTE:** The Zoom Rooms controller device must first be added to the .AV Framework system as described in .AV Framework Configuration on page 137. Adding the Zoom Rooms controller will expose a **Video** device type for the switcher input and a **Capture** device type for the switcher output. The user-defined name created for the Zoom Rooms controller device is added to the beginning of these selection names.

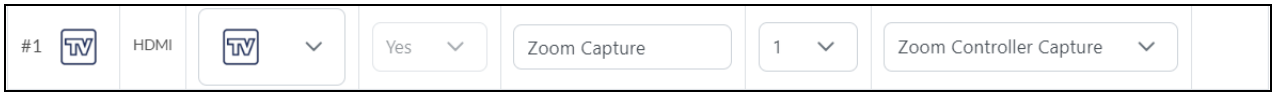
1. Navigate to **Settings** > **AV Routing** within the .AV Framework web configuration interface.
2. Select the **[Zoom Controller] Video** device type on the switcher input that is connected to the UC-ENGINE.

   AV Routing Accordion - Video Switcher Input



3. Select the **[Zoom Controller] Capture** device type on the switcher output that is connected to the UC-ENGINE input.

   AV Routing Accordion - Capture Switcher Output



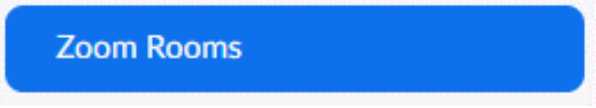
> **NOTE:** The **[Zoom Controller] Capture** output cannot be set to use fixed or follows routing. If **Zoom Capture** is selected for an output that previously was set to use fixed or follows routing, the routing setting will be cleared.

4. Activate the .AV Framework system.

Zoom Rooms Configuration

1. Log into your Zoom Rooms account at https://zoom.us/signin.
2. Select the **Zoom Rooms** menu button.

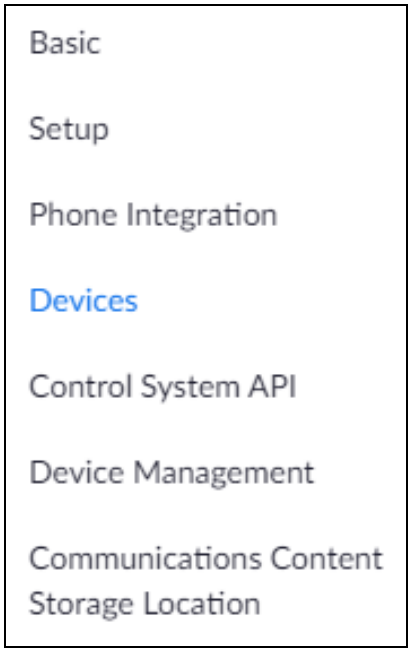
   Zoom Rooms Menu Button



3. Select the room from the **Zoom Rooms** menu tree where the .AV Framework configuration should be applied.
4. Select the **Edit** button.

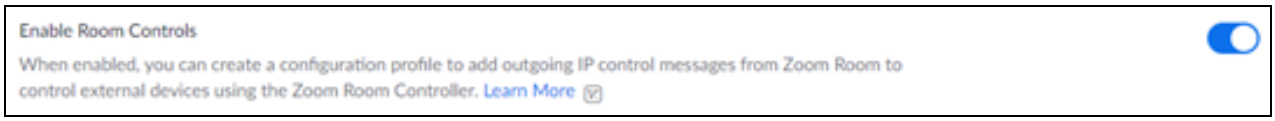
5. Select **Devices** from the editing menu.

Editing Menu - Devices Selection



6. Turn on the **Enable Room Controls** toggle near the bottom of the **Devices** page.

Devices Page - Enable Room Controls Toggle



7. Select **Edit Profile** on the **Devices** page.

Edit Profile Button

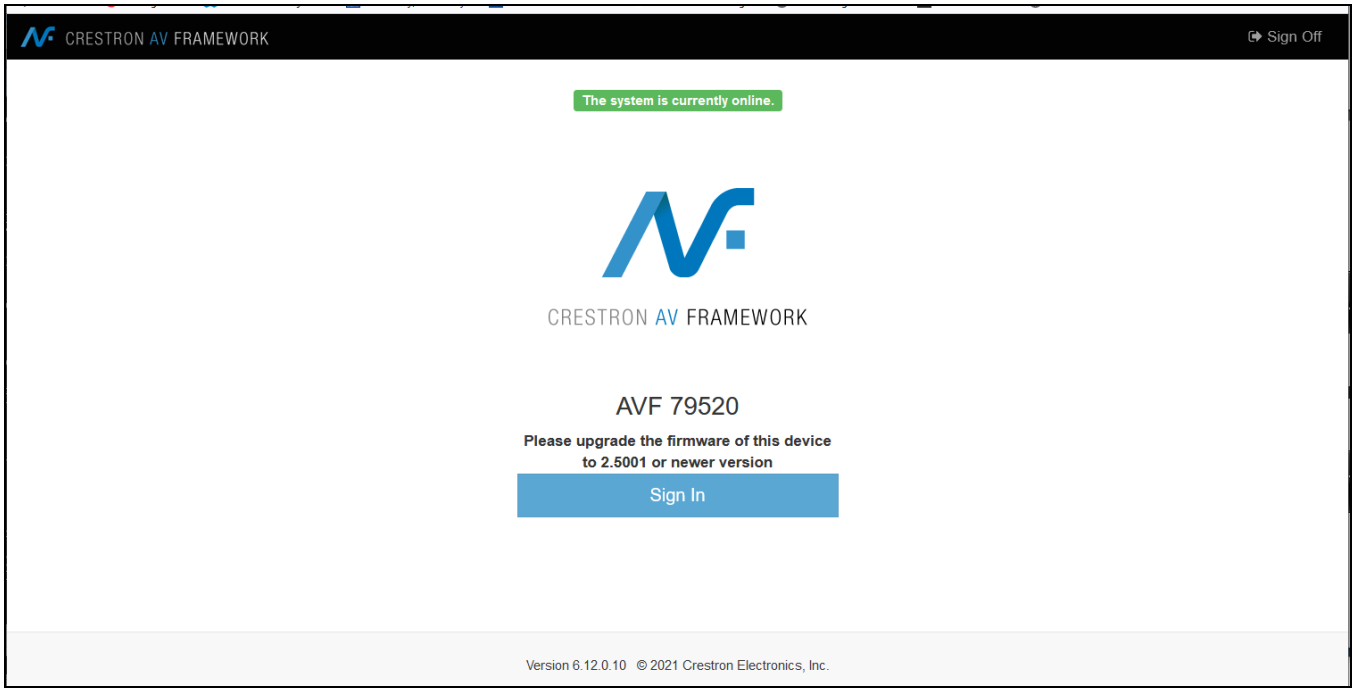
8. Copy the JSON output that was created in step 8 of .AV Framework Configuration on page 137 and paste it into the JSON profile for the room.

> **NOTE:** Ensure that any data that was previously entered for the JSON profile is deleted prior to adding the new profile from .AV Framework.

9. Select **Save**. It may take up to 2 minutes for the new controls to show on the Zoom Rooms controller application.

Appendix G: Upgrade to .AV Framework 6.12 with Older Firmware

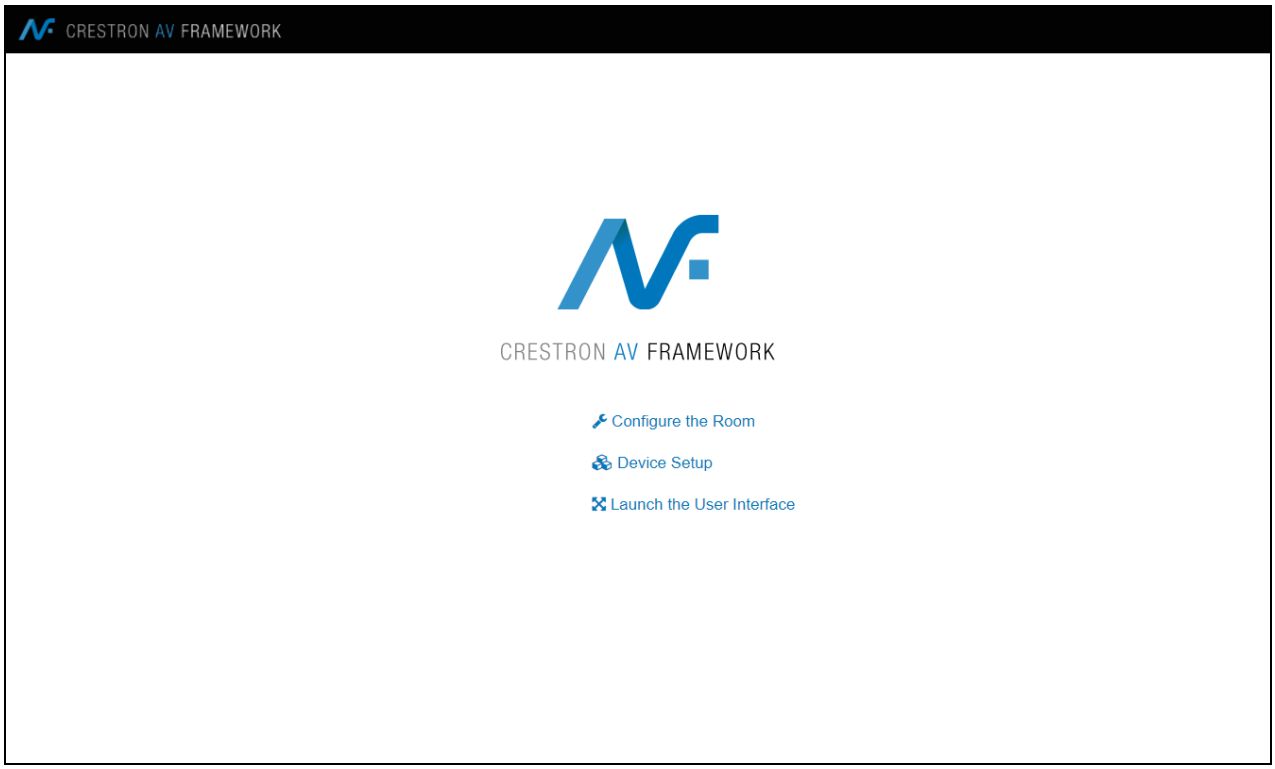
When upgrading .AV Framework to version 6.12 from an earlier version, the software checks whether the device firmware is above a minimum version that supports forced authentication. If the device firmware is below the minimum version, a message is displayed stating that the firmware must be upgraded before .AV Framework can be used.



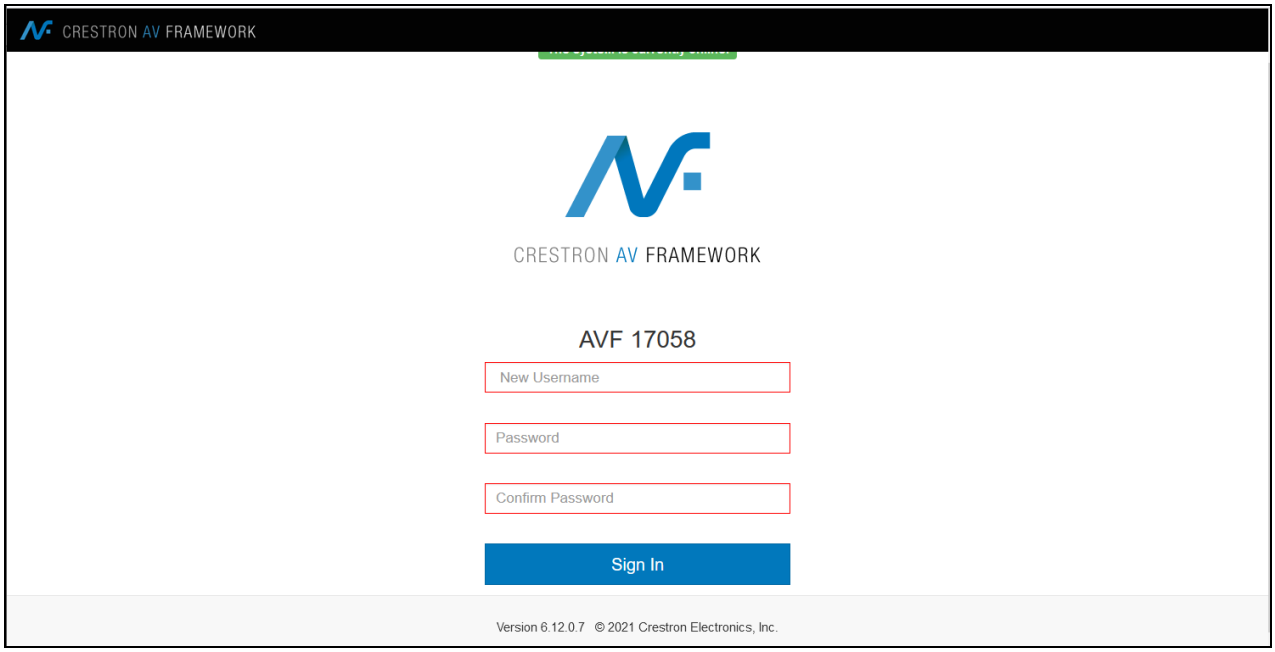
To upgrade to .AV Framework 6.12 from an older firmware version:

1. Download the latest device firmware package update file (PUF or ZIP file) from the device product pages or from the Crestron Resource Library at www.crestron.com/Support/Resource-Library.
2. Load the firmware package update file to the device in Crestron Toolbox™ software or using the web configuration interface.
3. Once the firmware upgrade has finished, open a supported web browser.

4. Enter https://[hostname/ipaddress]/AVF/index.html in the browser URL field, where [hostname/ipaddress] is the host name or IP address of the DMPS3 device. The .AV Framework splash page is displayed.

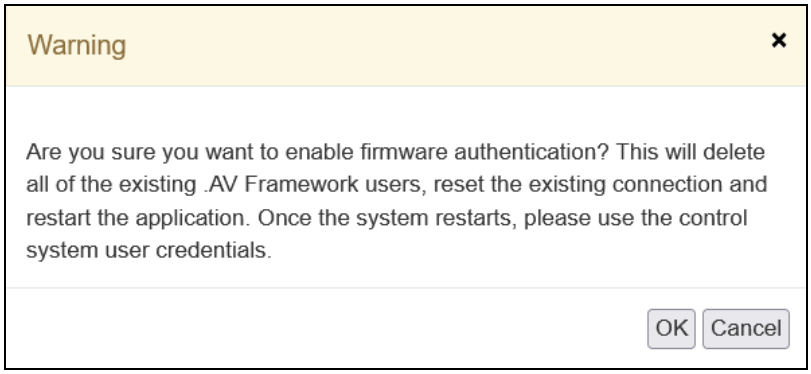


5. Select **Configure the Room**. A sign in page is displayed with a prompt to create a new admin user name and password for the device.



NOTE: If the firmware was upgraded in Crestron Toolbox, a similar prompt is displayed when attempting to connect to the device in Crestron Toolbox. If an admin user name and password are created within Crestron Toolbox, .AV Framework skips this step and instead prompts the user to enter the admin credentials. If user page authentication has not been turned on for the device, a dialog box is then displayed asking whether user page authentication should be turned on. Select **OK** to reboot the device with user page authentication turned on.

6. Enter the new user name and password, then select **Sign In**. A dialog box is displayed asking whether firmware authentication should be turned on.



7. Select **OK**. The device restarts with firmware authentication turned on.
8. Navigate back to **Configure the Room** in the web UI and enter the admin credentials created in step 6. Upon successful login, the **AV Framework Dashboard** page is displayed.

Appendix H: Configure HTML Web XPanel for .AV Framework

HTML5 Web XPanel is a feature that transforms any compatible HTML5 web browser into a virtual Crestron touch screen, which is supported on Windows®, macOS®, and Android™ operating systems. HTML Web XPanel works on any computer platform and any screen size, and only requires a touch screen display and a mouse (or other pointing device) to operate. Screen reader accessibility support can also be built into the HTML Web XPanel project using standard accessibility web development methodologies.

HTML5 Web XPanel is compatible with .AV Framework software and can be used in place of the standard Web XPanel interface provided with the software. This appendix describes how to configure HTML5 Web XPanel for .AV Framework software.

Load the HTML5 Web XPanel Project

HTML Web XPanel projects are created using the same scripts and components as Crestron HTML5 User Interface (CH5) projects with the addition of the required HTML Web XPanel library and configuration. For more information on creating and deploying a HTML5 Web XPanel project to the .AV Framework controller, refer to the Crestron HTML5 User Interface Developer Microsite.

Access the HTML5 Web XPanel Interface

To access the HTML5 Web XPanel interface, navigate to the HTML5 Web XPanel project using the following URL schema, where [port] is a secure web port for the HTML5 Web XPanel project.

> **NOTE:** Crestron recommends using fully-qualified domain names (FQDNs) in place of IP addresses when opening the HTML5 Web XPanel project, as this is required to prevent a certificate security warning from displaying in the web browser.

https://[hostname]:[port]/[projectname]/index.html

> **NOTE:** Crestron recommends setting a secure web port for the HTML5 Web XPanel project on the control system. For more information on setting a secure web port, refer to the Crestron HTML5 User Interface Developer Microsite.

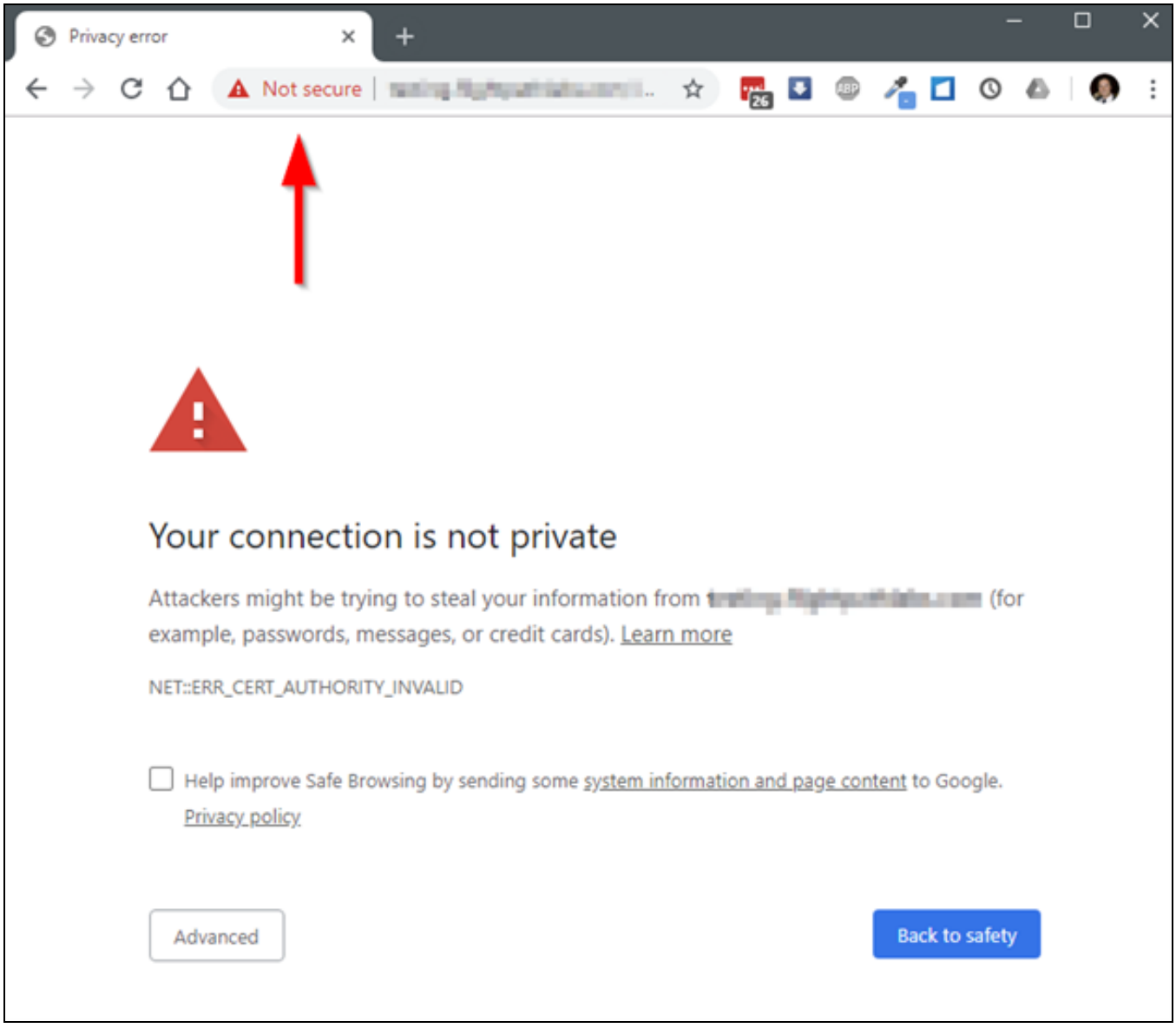
The default IP ID for the Web XPanel interface is 4. If the IP ID has been changed to a different value, append "?ipid=[ip_id]" to the end of the the CH5 project URL on the control system, where [ip_id] is the chosen IP ID value.

Refer to the following example URL:

https://[hostname]:[port]/[projectname]/index.html?ipid=3

All browsers supported by HTML5 Web XPanel will provide warning messages upon connecting to the browser if the .AV Framework controller uses a self-signed certificate.

An example from the Chrome® browser is shown below:



This behavior is expected. There are three solutions that can be used to address this.

- Use a CA-signed certificate for the .AV Framework controller and associated web server (preferred method).
- Your IT Administrator extracts the self-signed certificates from your .AV Framework controller and web server and then installs them onto your workstation as trusted certificates.
- The end user accepts the self-signed certificate for that browser on their workstation to prevent the message from showing again.

Appendix I: Configuring Modern Authentication for EWS

This appendix provides the procedures required to configure Modern Authentication (OAuth 2) support for .AV Framework software in the Microsoft® EWS (Exchange Web Services) service.

The Modern Authentication authorization model is provided by the Azure® Active Directory® service to integrate managed API applications with the same authentication model used by the Office 365® software REST APIs. Once Modern Authentication is configured in EWS, .AV Framework uses this access method to provide heightened user authentication.

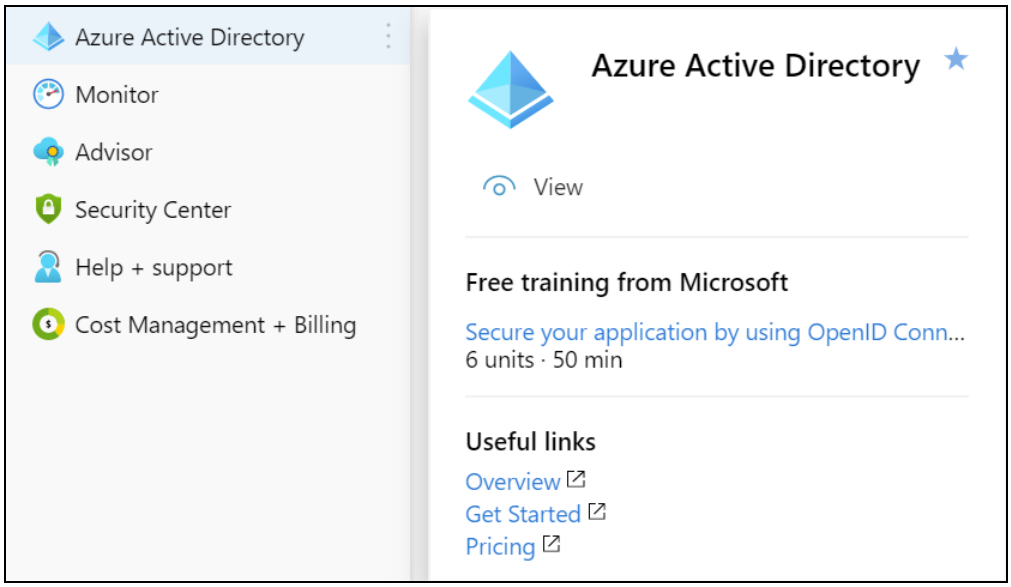
Configure the .AV Framework EWS App

Use the following procedures to define a new application in Azure Active Directory that will be used to configure Modern Authentication for use with .AV Framework.

Create the .AV Framework App

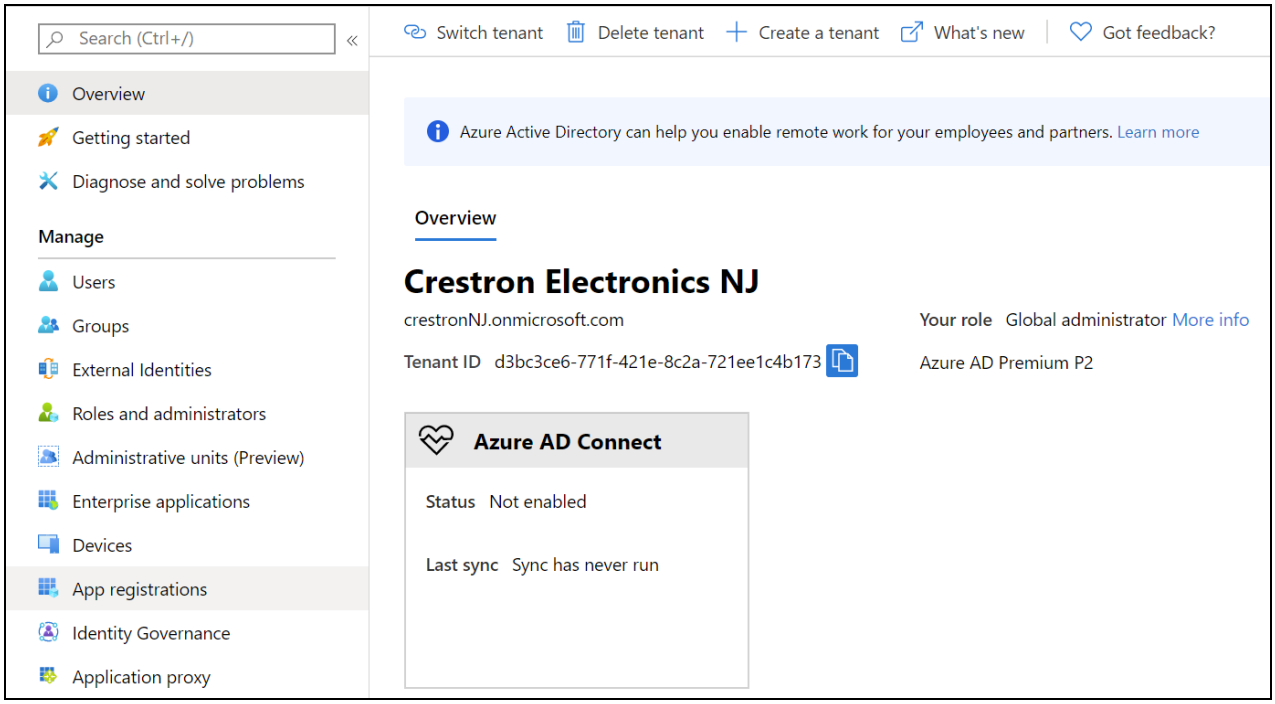
1. Sign into the Azure portal with a user ID with sufficient permissions to create an app.
2. Select **Azure Active Directory** from the left navigation menu. The **Azure Active Directory** page is displayed.

   Azure Active Directory Page



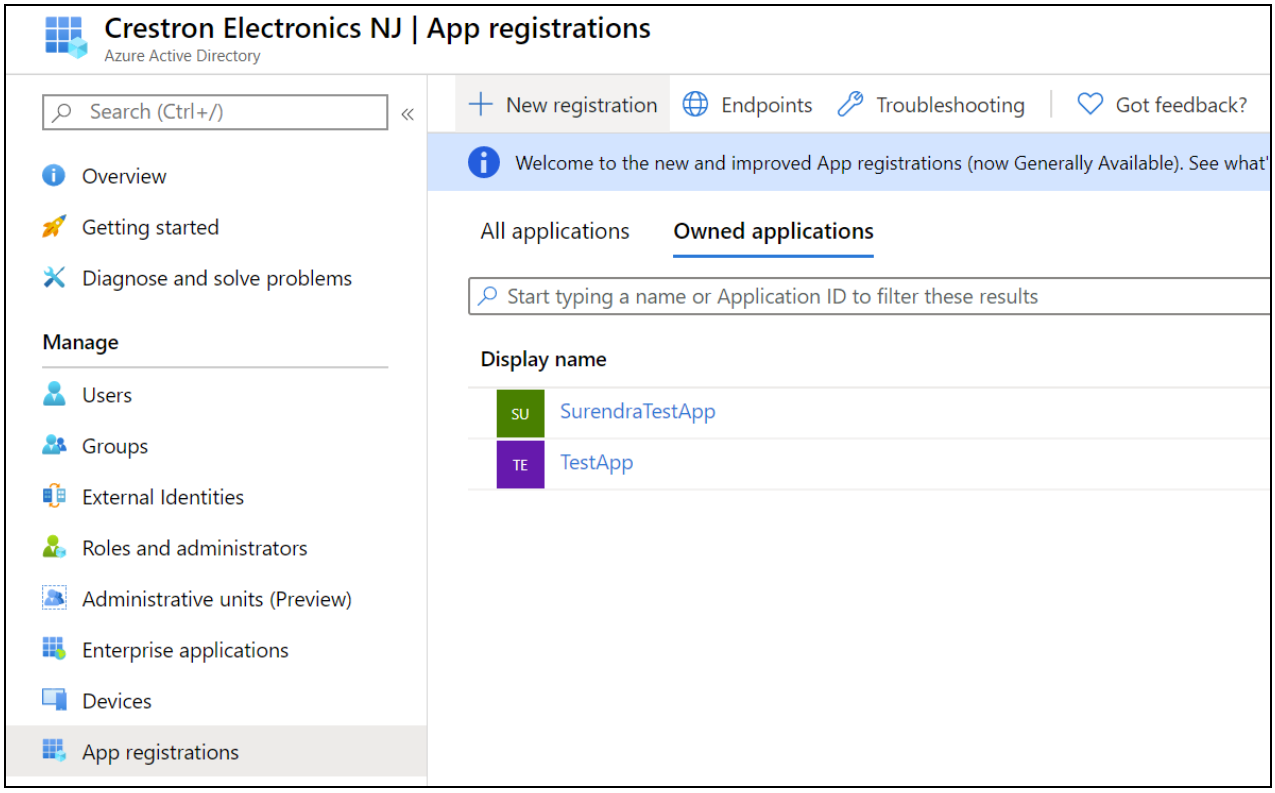
3. Select **App registrations** from the Azure widget menu. The **App registrations** page is displayed.

App registrations Selection



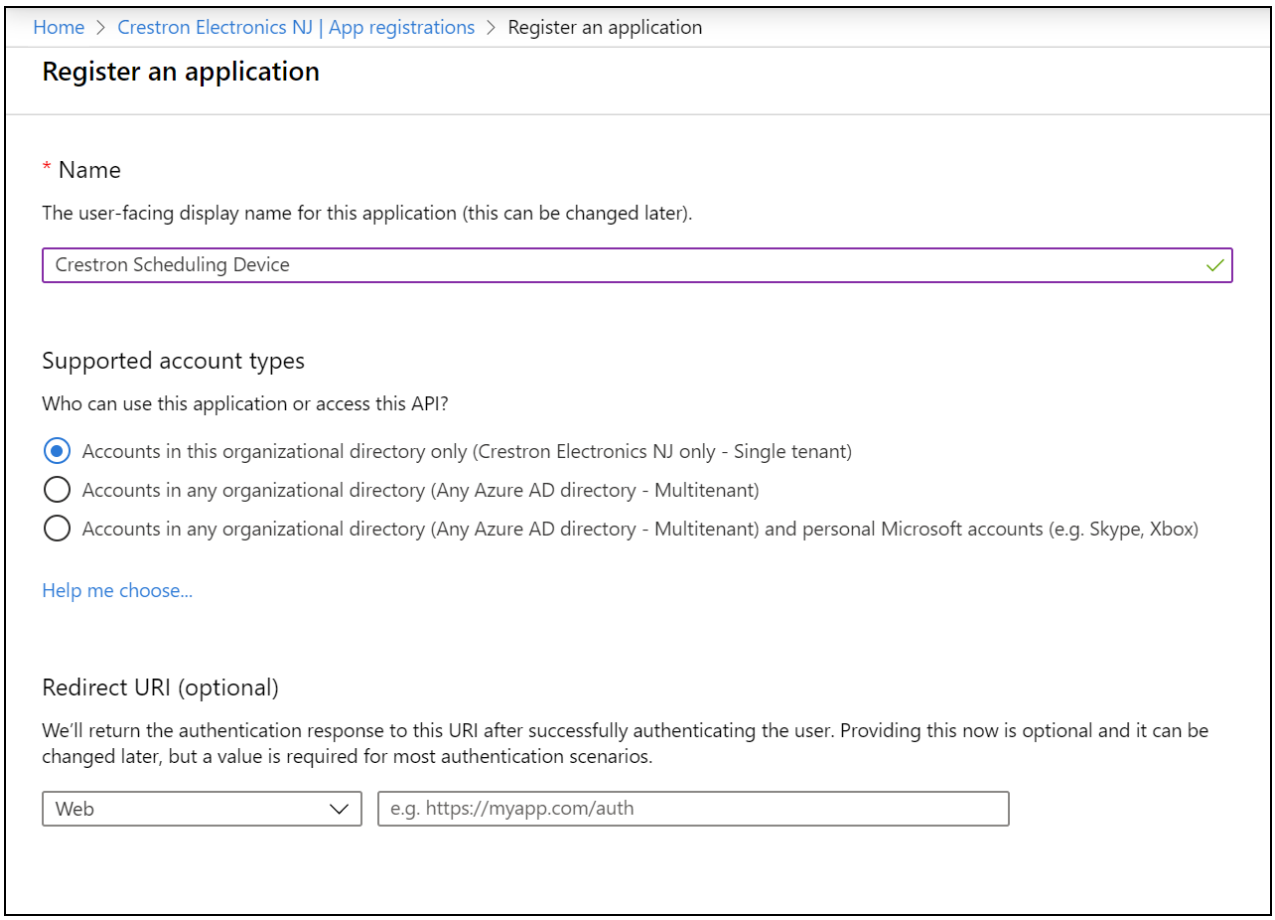
4. Select **+ New registration**.

App registrations - New registration Screen



A dialog box for creating the app is displayed.

Register an application Dialog Box



5. Enter the following information:
   - **Name:** Enter a user-facing name of the application (in the Azure environment). This can be any string 120 characters or less. It is possible to have more than one application registered with the same display name.
   - **Supported account types:** Select the supported account type. Only the **Accounts in this organizational directory only** option is supported by .AV Framework at this time.

   NOTE: The **Redirect URI (optional)** settings are not configured for this application.

6. Select **Register** to register the application with Azure Active Directory.

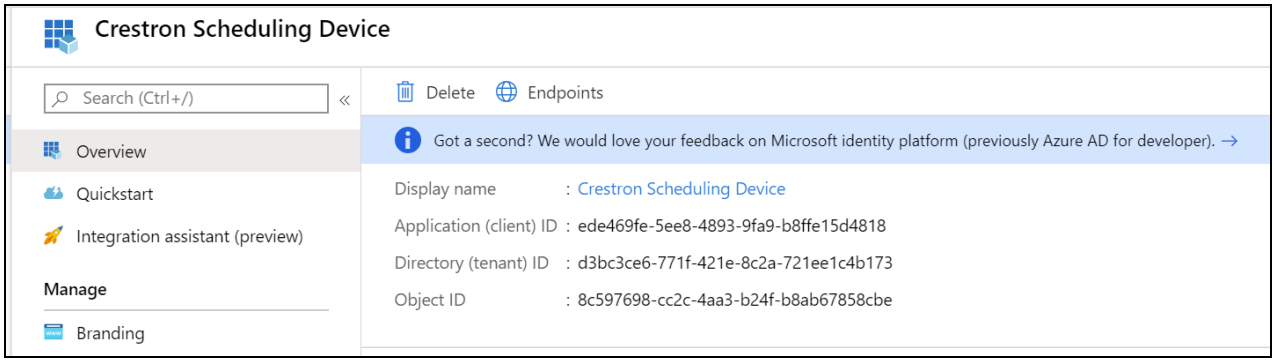
Obtain Authentication IDs

Once the application is registered, the application and directory IDs must be obtained to connect .AV Framework to the Azure AD app.

1. Select **App registrations** from the Azure widget menu.
2. Select the application created for the .AV Framework app. An application dialog box is displayed.

3. Select **Overview** from the navigation menu. Information about the Azure app is provided.

Application Overview Screen



4. Copy the following fields from the **Overview** pane to an accessible location. Use the **Copy to Clipboard** button that appears when hovering over each field to ensure accuracy.
    - **Application (client) ID**: The unique identification string for the Azure app.
    - **Directory (tenant) ID**: The unique identification string for the Azure directory.

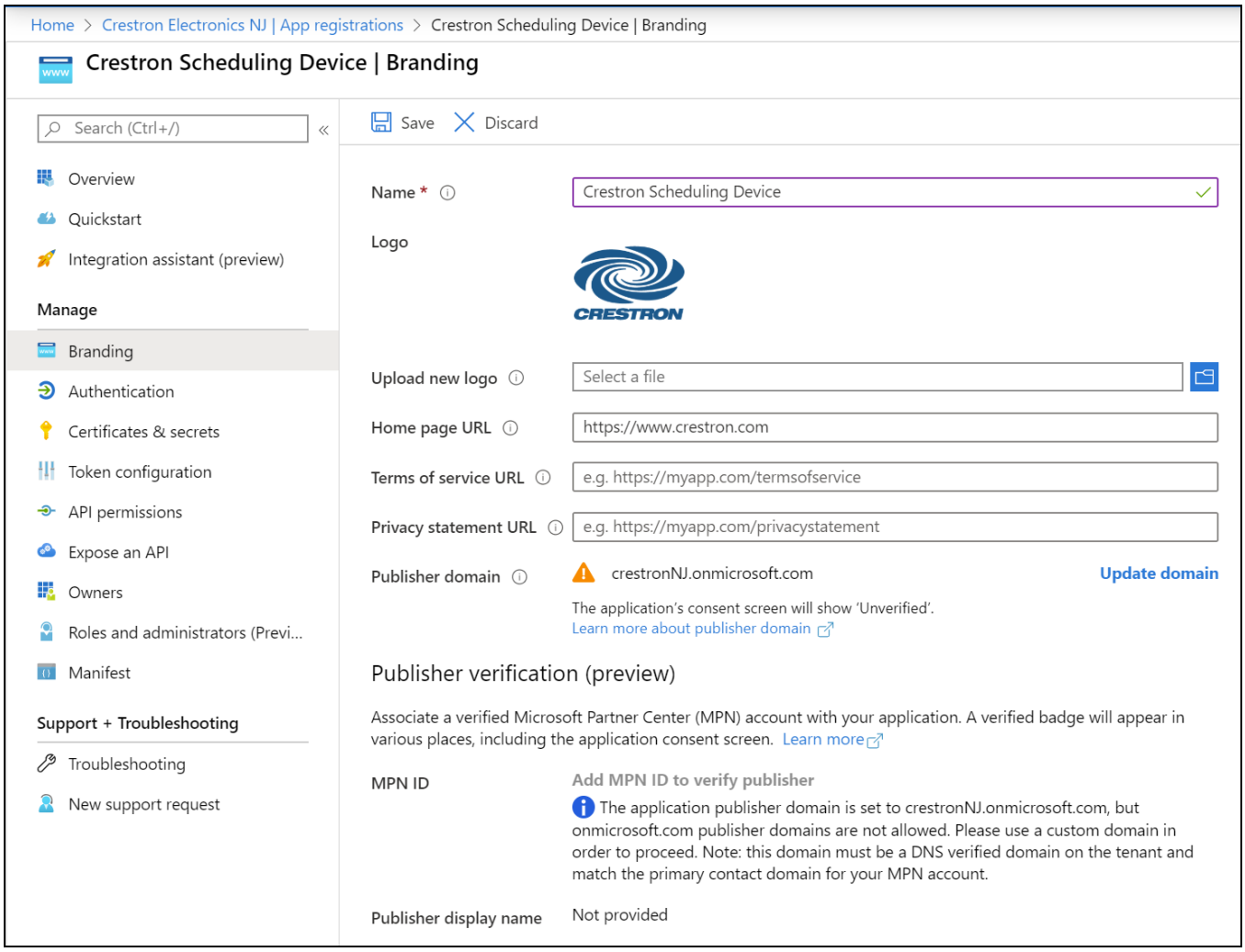
Configure Additional Settings

The following additional settings can be configured for the Azure app. These settings define the user consent experience, authentication details, and API access scopes available to the application.

Branding

Select **Branding** under the **Manage** section of the application navigation menu to configure branding settings for the app.

Application Branding Screen



The following branding settings can be configured for .AV Framework:

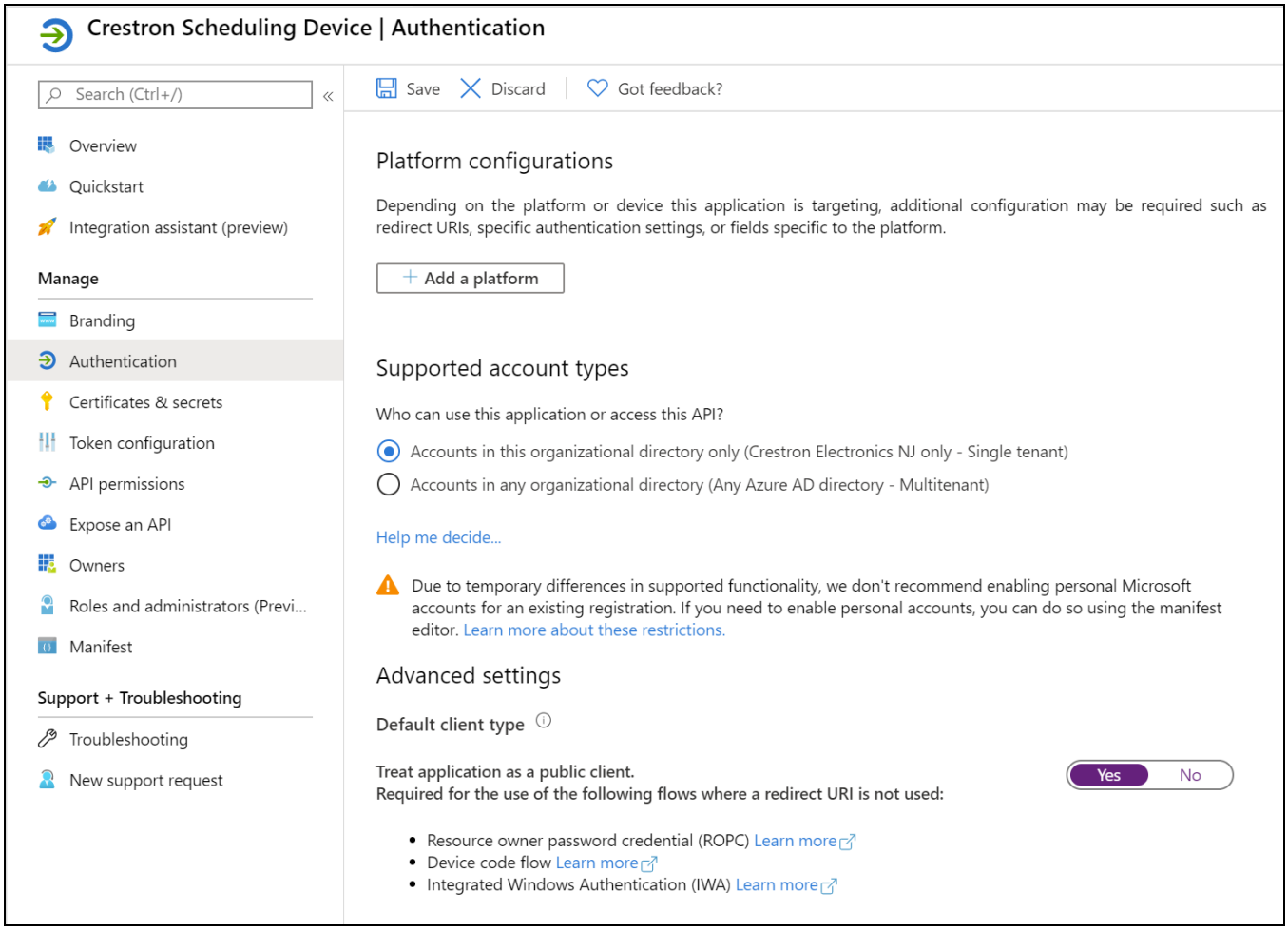
- **Name**: **Required.** Set the user-friendly name of the application. This is the same name that was defined when registering the application, but it can be changed here.
- **Upload New Logo**: Set a user-facing logo for this application that appears on the consent screen. The image file for the logo must meet the following requirements:
  - Image dimensions of 215 x 215 pixels
  - Central image dimensions of 94 x 94 pixels
  - Uses the file type .bmp, .jpg, or .png
  - File size less than 100 KB
- **Privacy statement URL**: Provides a link to the application privacy statement in the consent screen.

- **Publisher domain**: Sets the process that must be completed to verify ownership of the domain. Most users will probably already have a verified domain. If the domain is not verified, the application will work, but the consent screen will warn the user they are consenting to an unverified application.

Authentication

Select **Authentication** under the **Manage** section of the application navigation menu to configure authentication settings for the app.

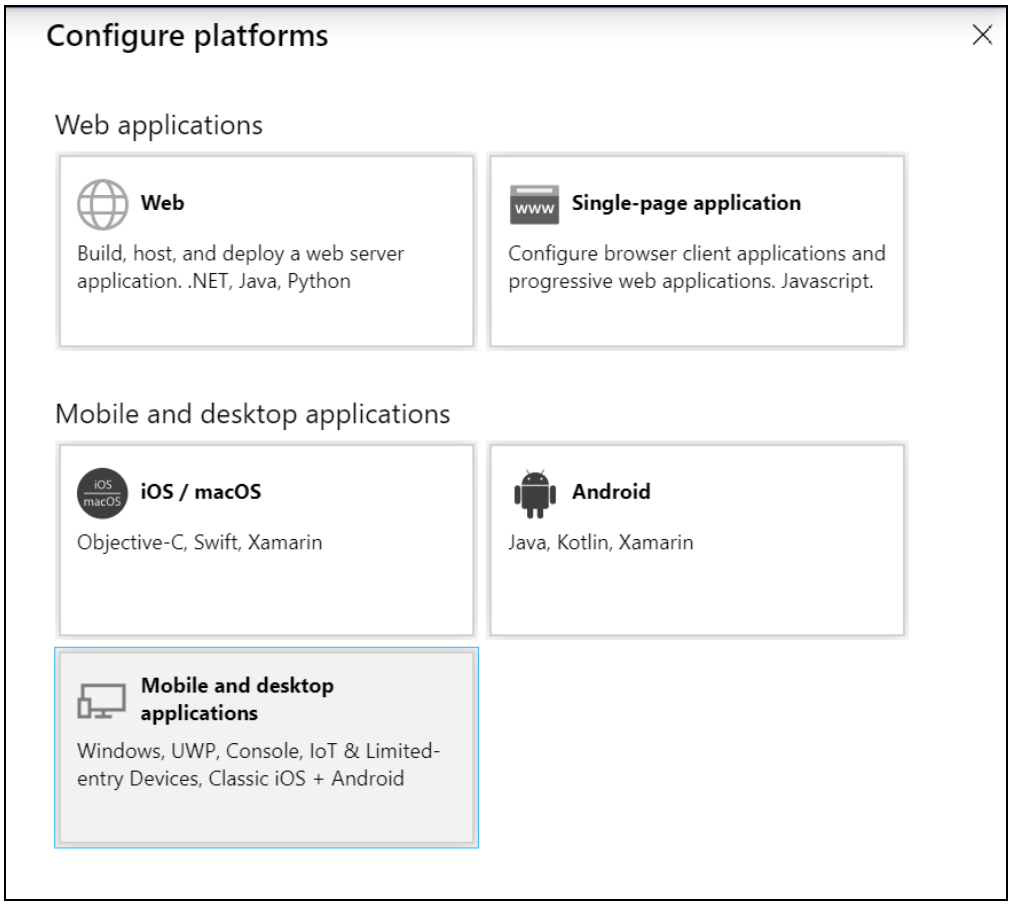
Application Authentication Screen



The following authentication settings can be configured for .AV Framework:

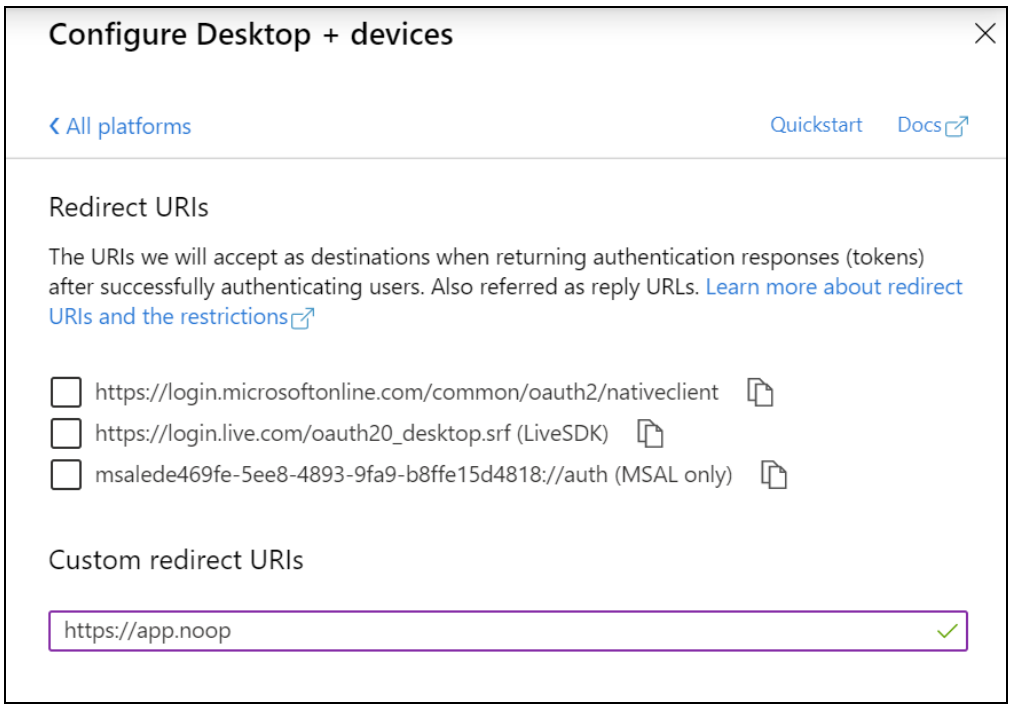
- **Add a Platform**: Select this button to create a platform for app authentication. The **Configure platforms** pane is displayed on the right side of the screen.

  Configure platforms Pane



Select **Mobile and desktop applications** to display settings for configuring this platform.

Configure Desktop + devices Pane



Azure AD requires the use of a redirect URI, but .AV Framework does not. Enter a valid URI address and select **Configure**.

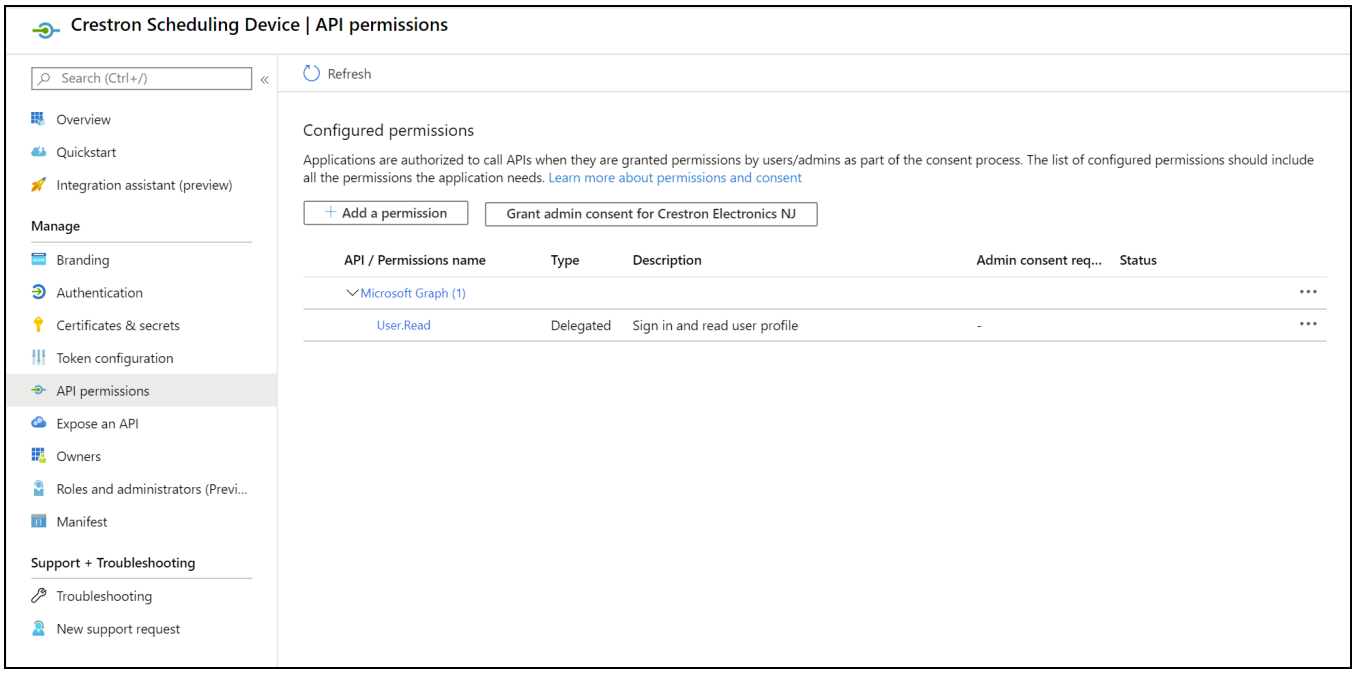
> **NOTE:** Certain sites require selecting the third check box **(MSAL only)** within this pane in order for authentication to work properly.

- **Supported account types**: Select an account type for the app. This setting is the same as the one set when registering the app and should not change from **Accounts in this organizational directory only**.
- **Default Client Type**: The **Treat application as a public client** toggle must be turned on.

API Permissions

Select **API Permissions** under the **Manage** section of the application navigation menu to configure API permissions for the app.

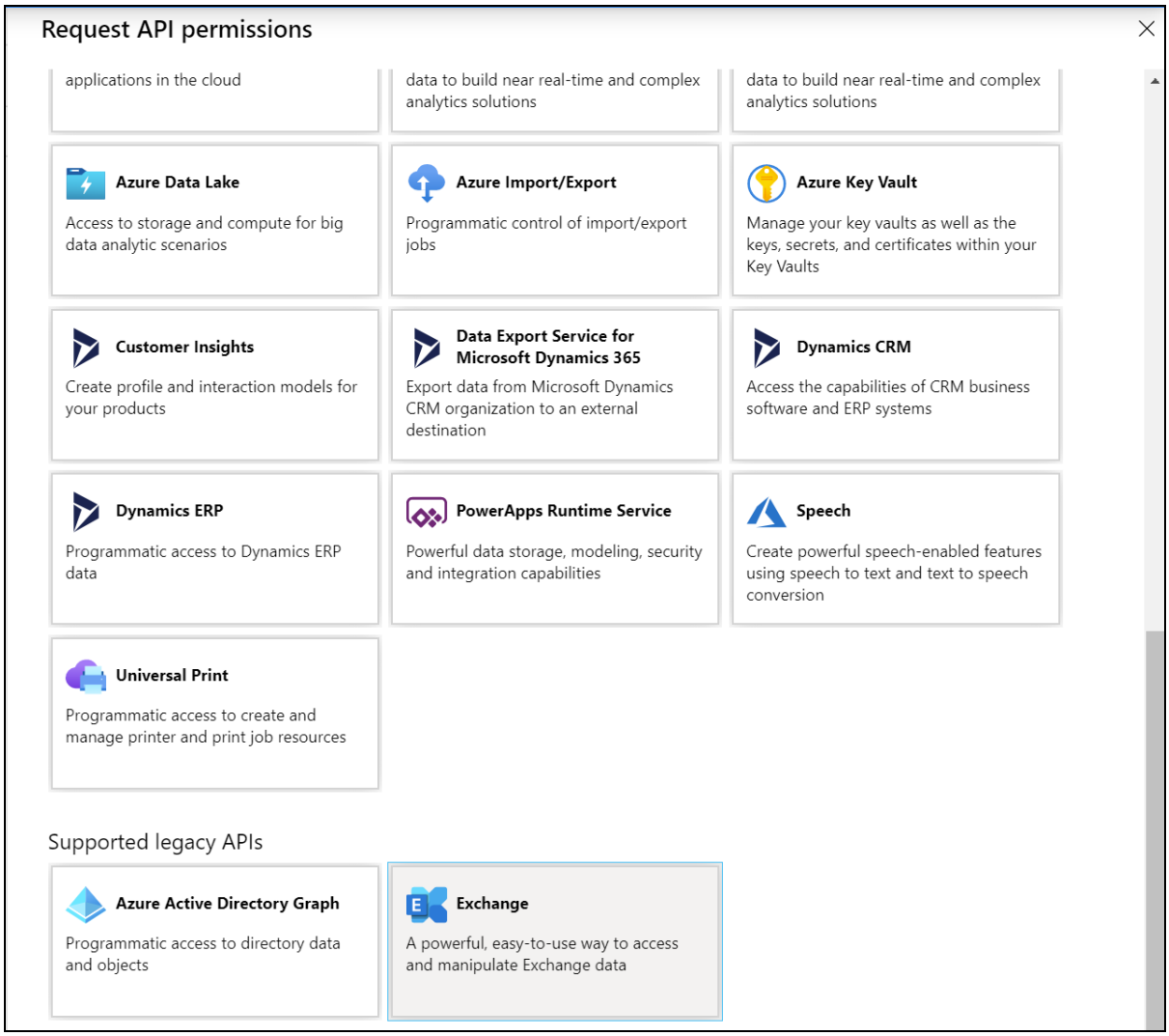
API Permissions Screen



The following API permissions settings can be configured for .AV Framework:

Select **Add a Permission** to create a new API permission for the app. The **Request API permissions** pane is displayed on the right side of the screen.

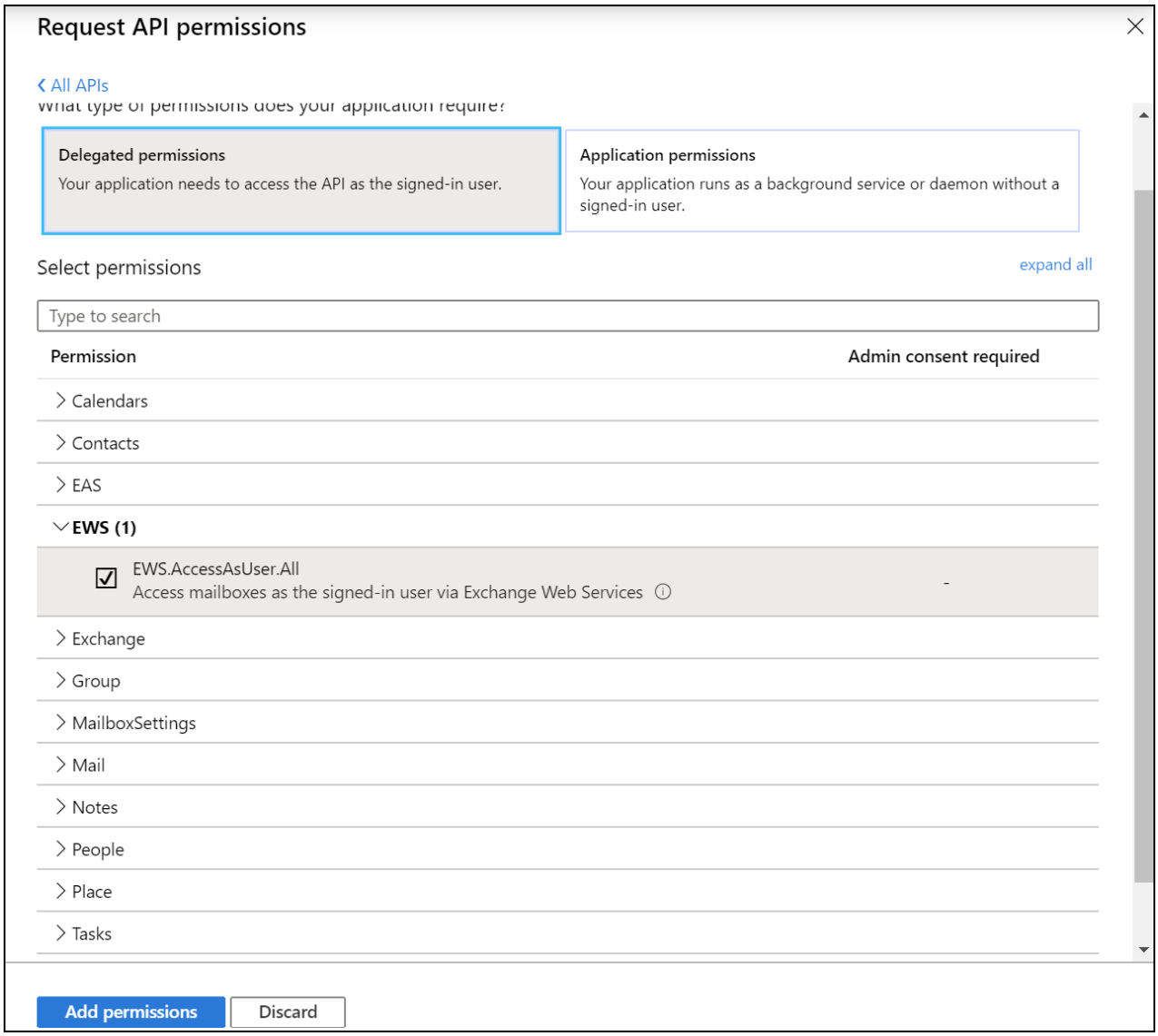
Request API permissions Pane



To set the API permissions for EWS:

1. Select **Exchange** to display a list of permissions for EWS.

   Request API permissions Pane - Exchange

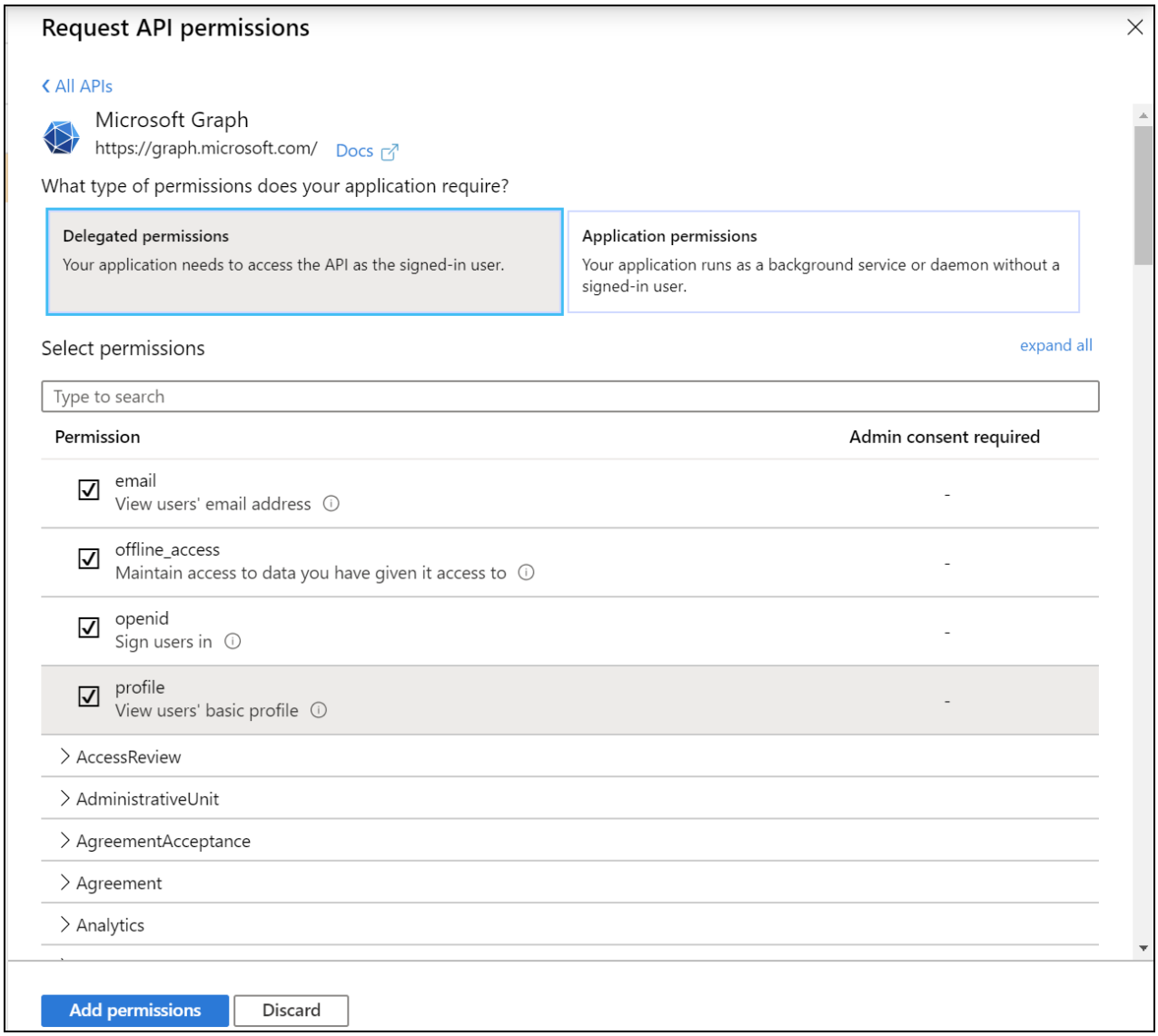


2. Expand the EWS accordion.
3. Fill the checkbox next to **EWS.AccessAsUser.All** to allow the application to make requests to the Exchange Web Services API on behalf of the configured user.

To set the API permissions for the Microsoft® Graph function:

1. Select **Microsoft Graph** to display a list of permissions for Microsoft Graph.

   Request API permissions Pane - Microsoft Graph

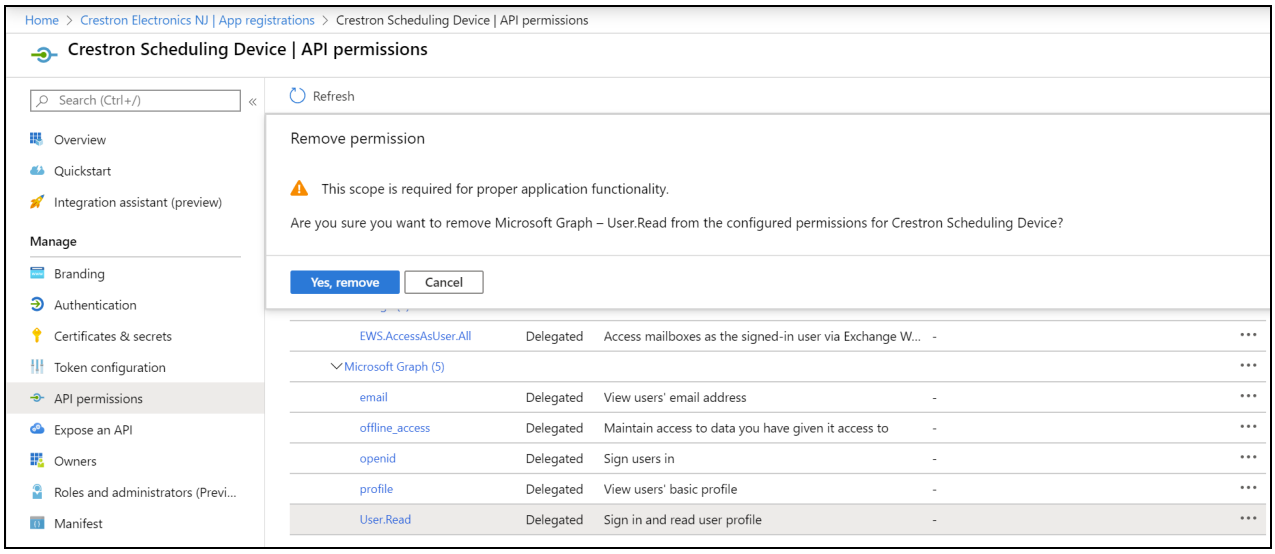


2. Fill the checkboxes next to the following settings to turn on the functionality described below:
   - **offline_access**: Allows the application to receive a Refresh Token, which can be exchanged for a new Access Token, when it expires. This is required for long running applications, so user consent is not required each time an access token expires.
   - **openid**: Allows the application to receive an ID Token, which provides basic profile information about the authenticated user. This scope is required for the next two scopes, as they are delivered in the ID Token.
   - **email**: provides the email address of the authenticated user. The application uses this to get the calendar address if none is entered during device configuration.

- **profile**: Provides basic profile information about the authenticated user, such as the display name and photo URL.

If the Microsoft Graph **User.Read** scope is added automatically, it can be removed. If there is a warning, it can be ignored.

API Permissions Screen - User.Read Scope



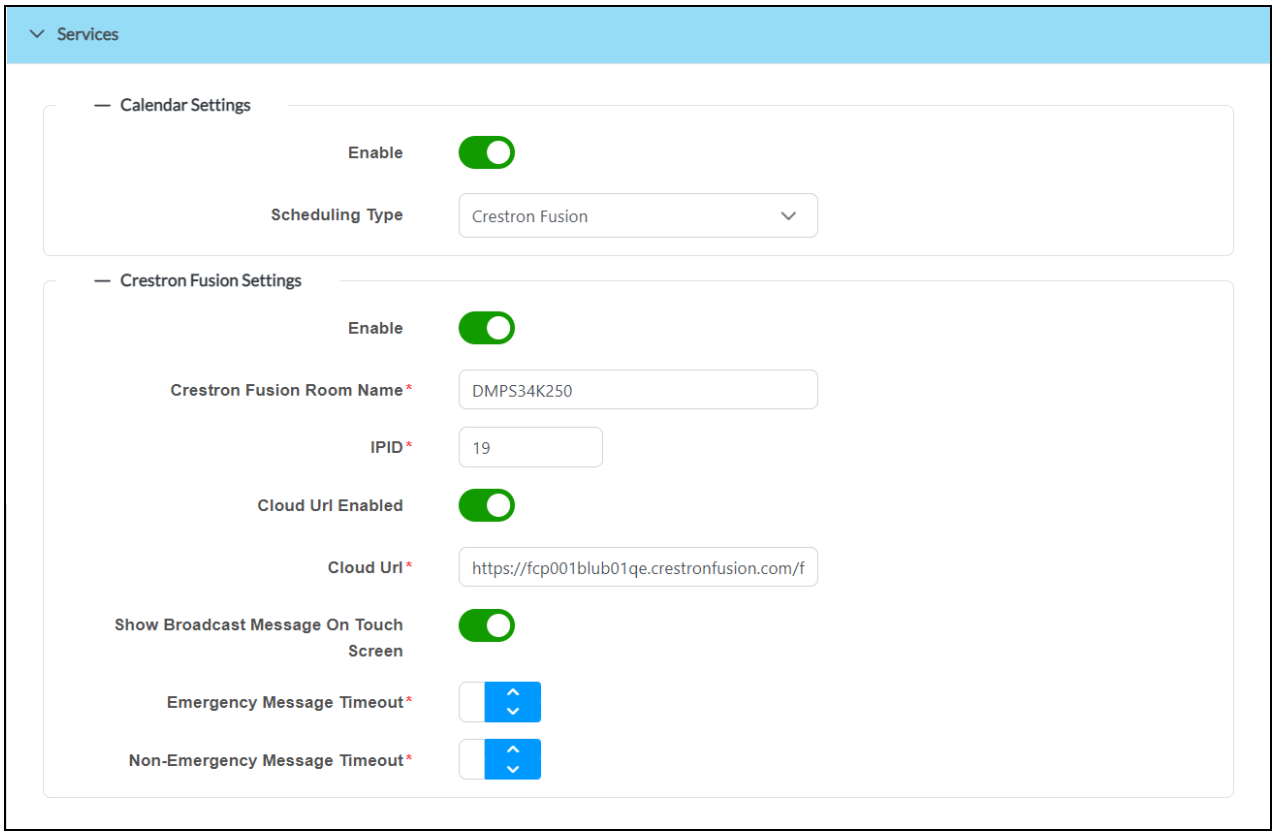
Connect the Scheduling App to EWS

Once an app has been registered in Azure AD, .AV Framework can be connected to EWS from the web configuration interface.

To connect .AV Framework to EWS:

1. In the .AV Framework web configuration interface, navigate to **Settings** > **Services**.

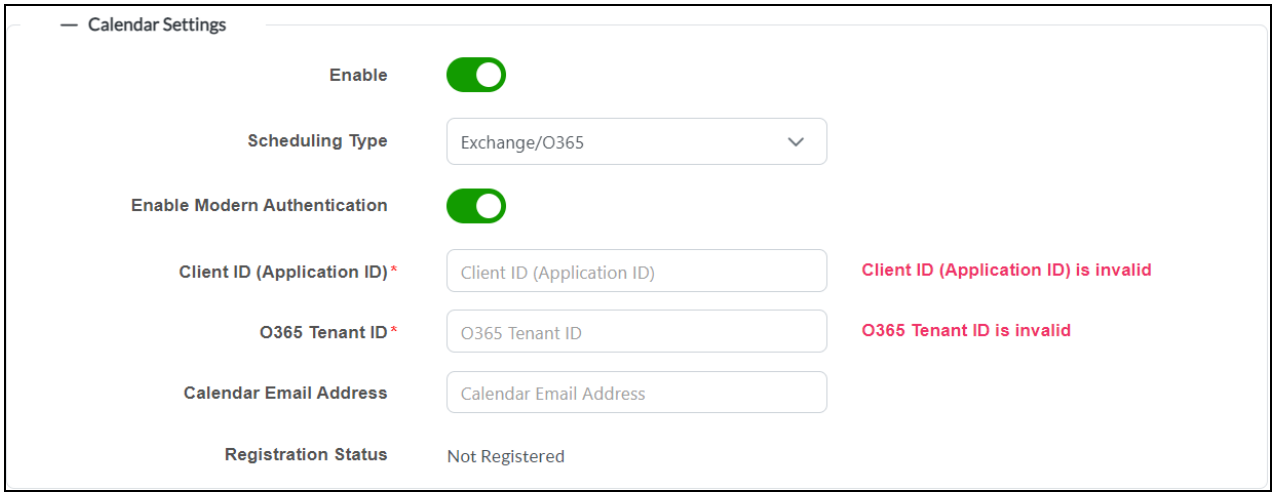
   Services Accordion



2. Select **Enable** in the **Calendar Settings** subsection to turn on a connection to EWS.
3. Select **Exchange/O365** from the **Scheduling Type** drop-down menu.

4. Turn on the **Enable Modern Authentication** toggle.

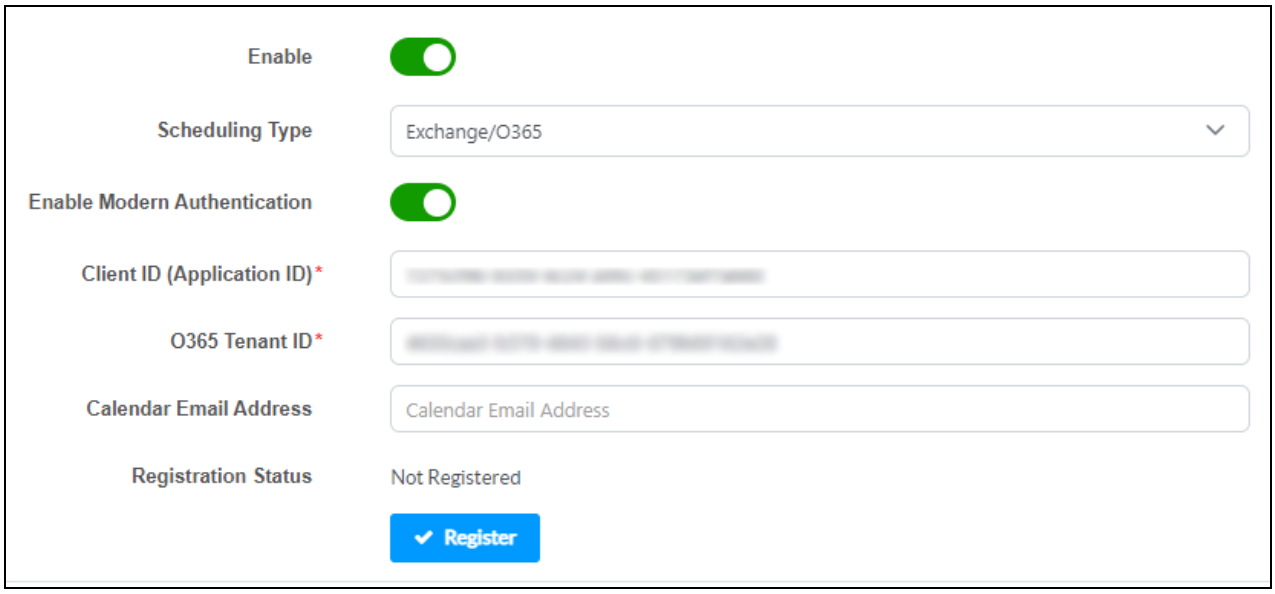
Calendar Settings (Exchange/O365) - With Modern Authentication



5. Enter the following information in the appropriate fields:
   - Copy and paste the application client ID obtained in Obtain Authentication IDs on page 151 into the **Client ID (Application ID)** text field.
   - Copy and paste the directory tenant ID obtained in Obtain Authentication IDs on page 151 into the **O365 Tenant ID** text field.
   - Enter the email address associated with the Microsoft Exchange scheduling calendar in the **Calendar Email Address** text field (optional).
6. Select **Save Changes** from **Actions** menu, then activate the new .AV Framework configuration.

   Once the new configuration is activated, a **Register** button is displayed within the **Calendar Settings** subsection for pairing the Office 365 account with .AV Framework.

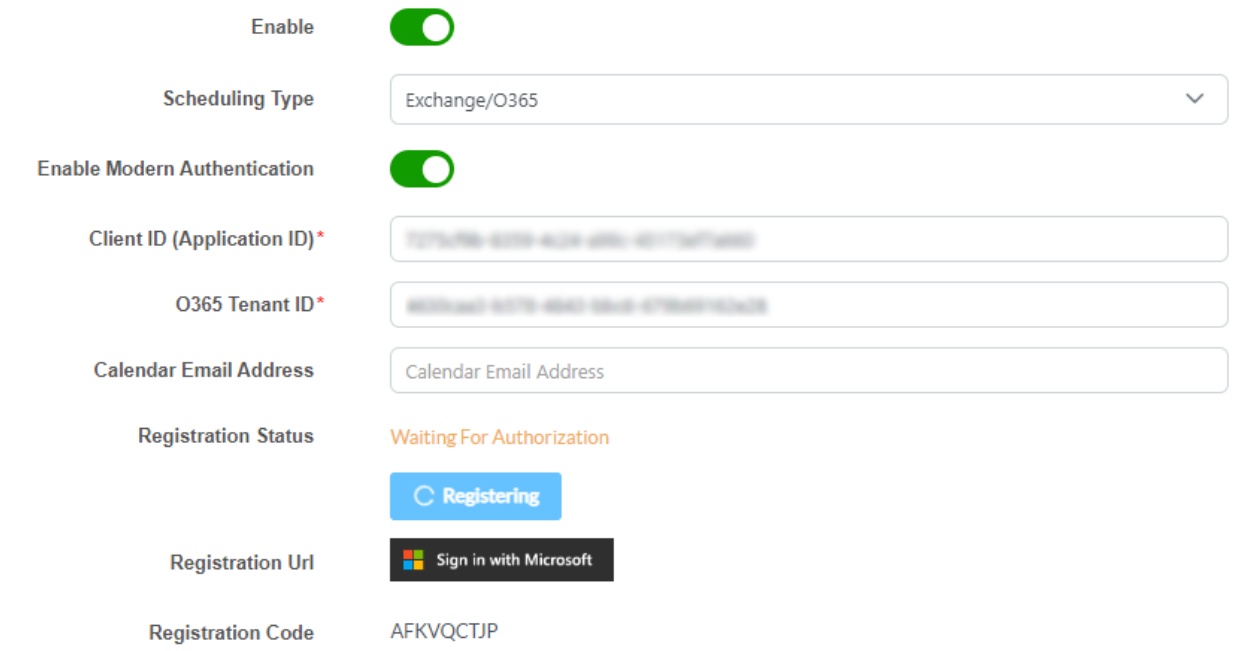
Calendar Settings Subsection - Register Button



7. Select **Register**.

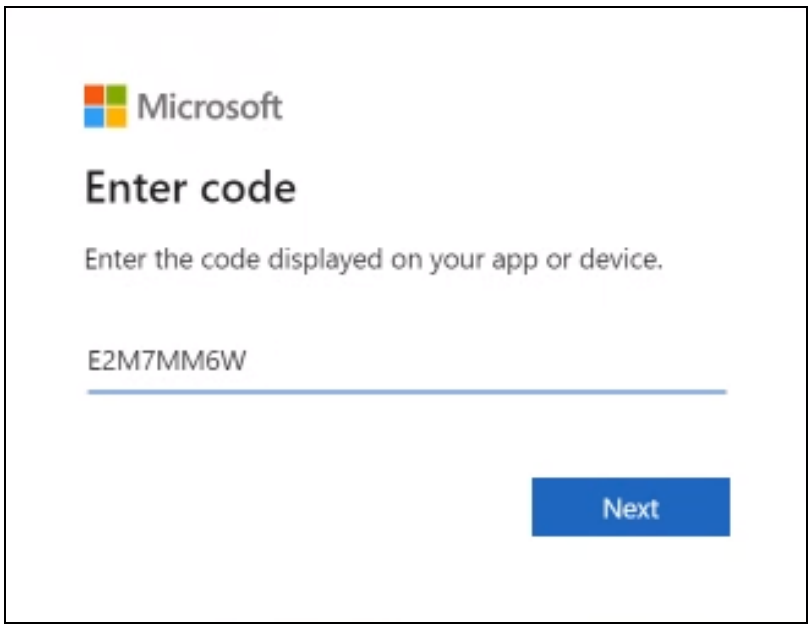
   When the web configuration interface refreshes, the **Calendar Settings** subsection displays a **Sign in with Microsoft** button, a registration code, and a registration status.

   Calendar Settings Subsection - Sign in with Microsoft Button



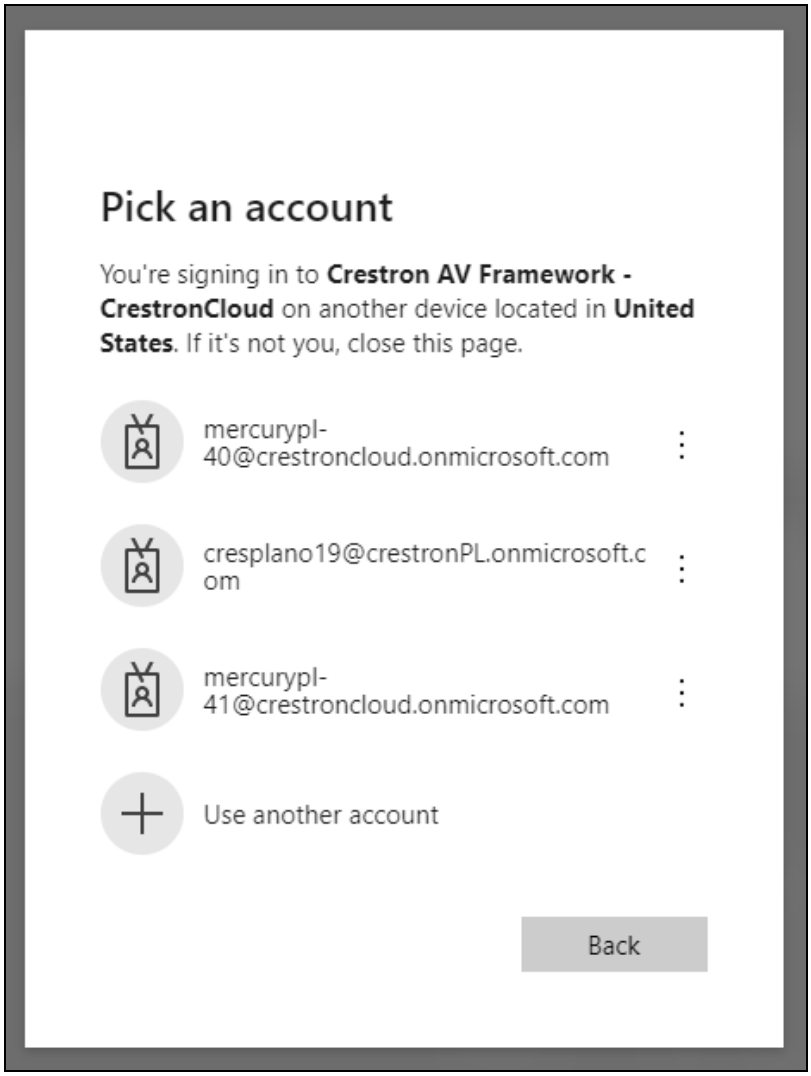
8. Select **Sign in with Microsoft**. An **Enter Code** dialog box is displayed.

   Enter Code Dialog Box



9. Enter the provided Exchange/O365 registration code in the text field and select **Next**. The **Pick an account** dialog box is displayed.

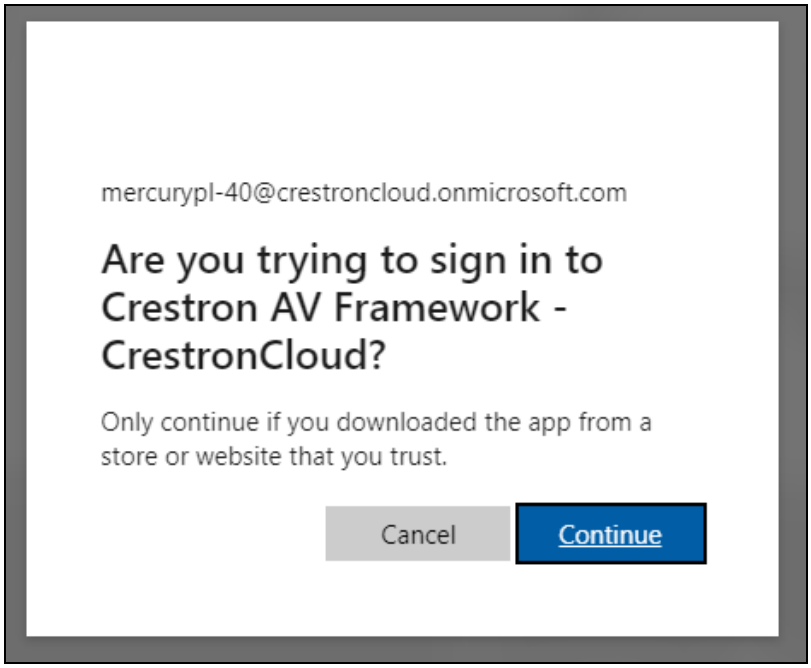
Pick an account Dialog Box



10. Select the EWS account that contains the desired scheduling calendar and enter the account password if prompted.

11. If the account has not yet been verified, a **Permissions requested** dialog box is displayed. Select **Accept** to verify the account. Otherwise, select **Continue** when prompted.

    Permissions requested Dialog Box



When the web configuration interface refreshes, the registration status updates to **Registered**. The Exchange scheduling calendar connects to .AV Framework without requiring a restart.

Appendix J: Configure Cisco Touch 10 Custom Conferencing

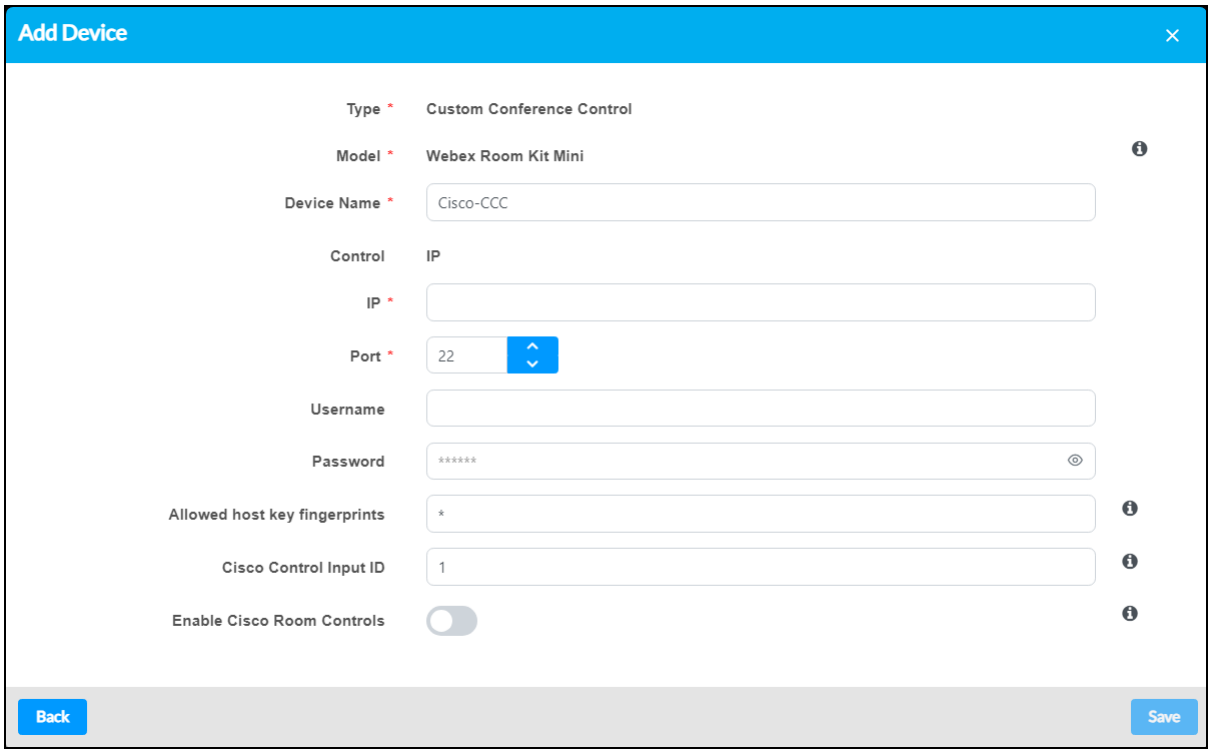
.AV Framework provides functionality that allows for custom control buttons to be added to a Cisco® Touch 10 controller application via a Cisco WebEx® Room Kit. These buttons are based on the inputs assigned within the .AV Framework system.

The following procedure describes how to add custom buttons to a Cisco Touch 10 controller application using .AV Framework.

1. Navigate to **Settings** > **Manage Devices** within the .AV Framework web configuration interface.
2. Select **Add Device**. The **Add Device** dialog box is displayed.
3. Navigate to and select the appropriate Cisco device driver in the provided table. For more information on adding devices, refer to Manage Devices on page 54.
4. Enter a descriptive name for the device in the **Device Name** text field.
5. Select **Next**. Additional information and settings for the device are displayed.

> **NOTE:** The Cisco device driver is imported from the cloud and installed into the .AV Framework system automatically.

Add Device Dialog Box - Custom Conference Control



6. Enter the following information for the Cisco WebEx Room Kit:.
    a. Enter all required communication information for the selected **Control** method (Serial or IP).
    b. Enter the username and password of a Cisco WebEx Room Kit user that has been given administrative privileges in the **Username** and **Password** text fields, respectively. For more information on creating Cisco WebEx Room Kit users, refer to Cisco's documentation.
    c. Enter a comma-delimited list of host key fingerprints for the connection between .AV Framework and Cisco WebEx Room Kit in the **Allowed host key fingerprints** text field. Enter an asterisk (*) to accept all host key fingerprints (the default settings).

        > **NOTE:** The fingerprint attribute is provided the Cisco driver DAT file, and .AV Framework passes it to the driver upon system startup. For SSH login, the fingerprint is a unique key identifier used for authentication. Refer to the following example:"SHA256:8A:9B:10:11:12:13:14:15:16:17:18:19:20:21:22:23".

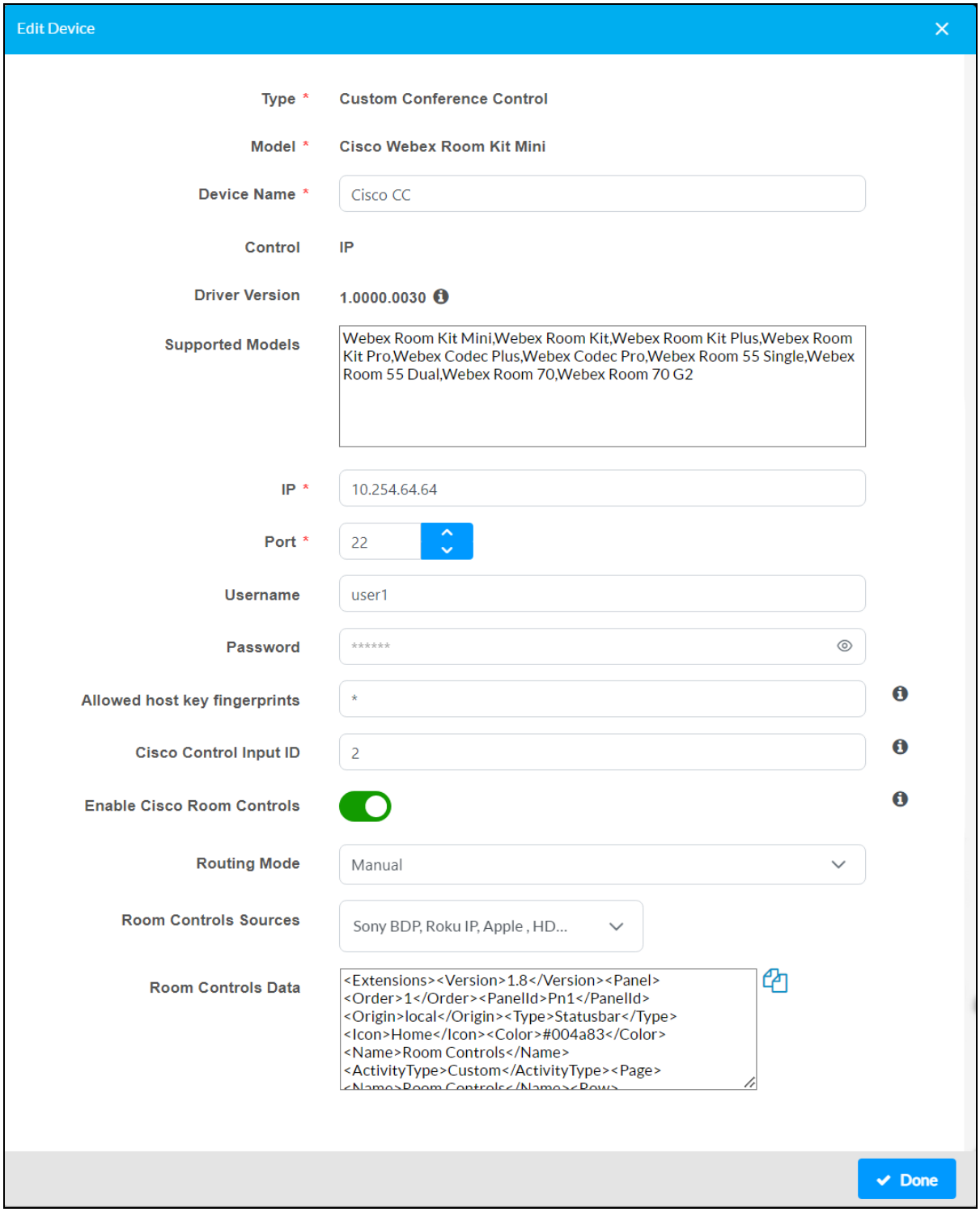
    d. Enter the required Cisco control input ID in the **Cisco Control Input ID** text field. For more information on obtaining the correct Cisco control input ID, refer to Cisco Control Input ID Reference on page 171.
7. Select **Save**. The Cisco WebEx Room Kit is added to the device list for the .AV Framework system.

    > **NOTE:** The .AV Framework system must be activated after adding the Cisco WebEx Room Kit. The Cisco WebEx Room Kit should also be added after adding and configuring all other input devices in the system, as the configuration options for the controller reflect the current input configuration for the system. For more information on configuring inputs, refer to Configuration on page 15.

8. Select the edit button next to the Cisco WebEx Room Kit in the **Manage Devices** accordion. The **Edit Device** dialog box is displayed for the Cisco WebEx Room Kit.

9. Turn on the **Enable Cisco Room Controls** toggle to turn on Cisco Touch 10 room controls within the .AV Framework system, and the select **Next**.

Edit Devices Dialog Box - Cisco Controller



10. Use the **Routing Mode** drop-down menu to select the routing behavior for the Cisco WebEx Room Kit when an active call is detected.
    - **Manual**: The Cisco output source must be routed to any displays manually.
    - **ActiveCall**: The Cisco output source will be routed to all displays automatically.

    > **NOTE:** Observe the following points for active call routing:
    > - No routing changes occur after the call is disconnected. Any routing that was in use prior to the call must be manually reset.
    > - If a switcher output (other than the **[Cisco Controller] Capture** output) has a fixed route to a display, the call will not be routed to that output.
    > - If a switcher output (other than the **[Cisco Controller] Capture** output) has a follows route to a display, the call will also be routed to that output.

11. Use the **Room Controls Sources** drop-down menu to fill the check boxes next to the input devices that should have control buttons in the Cisco Touch 10 controller application. Any unchecked input device will not be shown.

    > **NOTE:** Switching between **Manual** and **ActiveCall** routing modes does not require a restart to the .AV Framework configuration. However, a restart is required if changes are made to the input devices in the **Edit Device** dialog box or to the input devices in the **AV Routing** settings accordion.

12. Select **Done**, then activate the .AV Framework system.

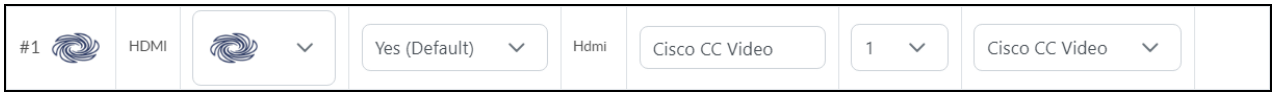
Configuration for a Custom Conferencing Device

If you are using a custom conferencing device and the output is connected to your .AV Framework switcher device, the following additional configuration is recommended:

> **NOTE:** The Cisco WebEx Room Kit must first be added to the .AV Framework system as described in the previous procedure. Adding the Cisco WebEx Room Kit will expose a **Video** device type for the switcher input and a **Capture** device type for the switcher output. The user-defined name created for the Cisco WebEx Room Kit is added to the beginning of these selection names.

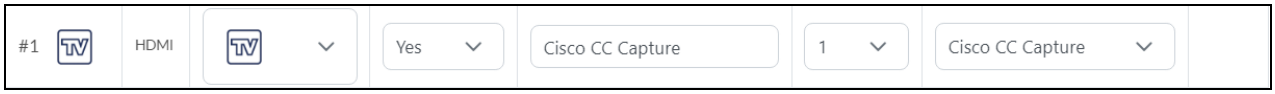
1. Navigate to **Settings** > **AV Routing** within the .AV Framework web configuration interface.
2. Select the **[Cisco Controller] Video** device type on the switcher input that is connected to the custom conferencing device.

   AV Routing Accordion - Video Switcher Input



3. Select the **[Cisco Controller] Capture** device type on the switcher output that is connected to the custom conferencing device input.

   AV Routing Accordion - Capture Switcher Output



> **NOTE:** The **[Cisco Controller] Capture** output cannot be set to use fixed or follows routing. If **[Cisco Controller] Capture** is selected for an output that previously was set to use fixed or follows routing, the routing setting will be cleared.

4. Activate the .AV Framework system.

Cisco Control Input ID Reference

Use the following table to determine the correct Cisco control input ID to use when adding a new Cisco WebEx Room Kit to the .AV Framework system. The input ID is determined based on your Cisco device and the input used for the connection.

Cisco Device	HDMI 1	HDMI 2	HDMI 3	HDMI 4	HDMI 5	DVI 4
WebEx Room Kit	2					
WebEx Room Kit Mini	2					
WebEx Room Kit Plus		2	3			
WebEx Room Kit Pro			3	4	5	
WebEx Codec Plus		2	3			
WebEx Codec Pro			3	4	5	
WebEx Room 55 Single			3			4
WebEx Room 55 Dual			3			4
WebEx Room 70			3	4	5	
WebEx Room 70 G2			3	4	5	
SX80 Codec			3			4

Transfer Room Control Data for Cisco Serial Drivers

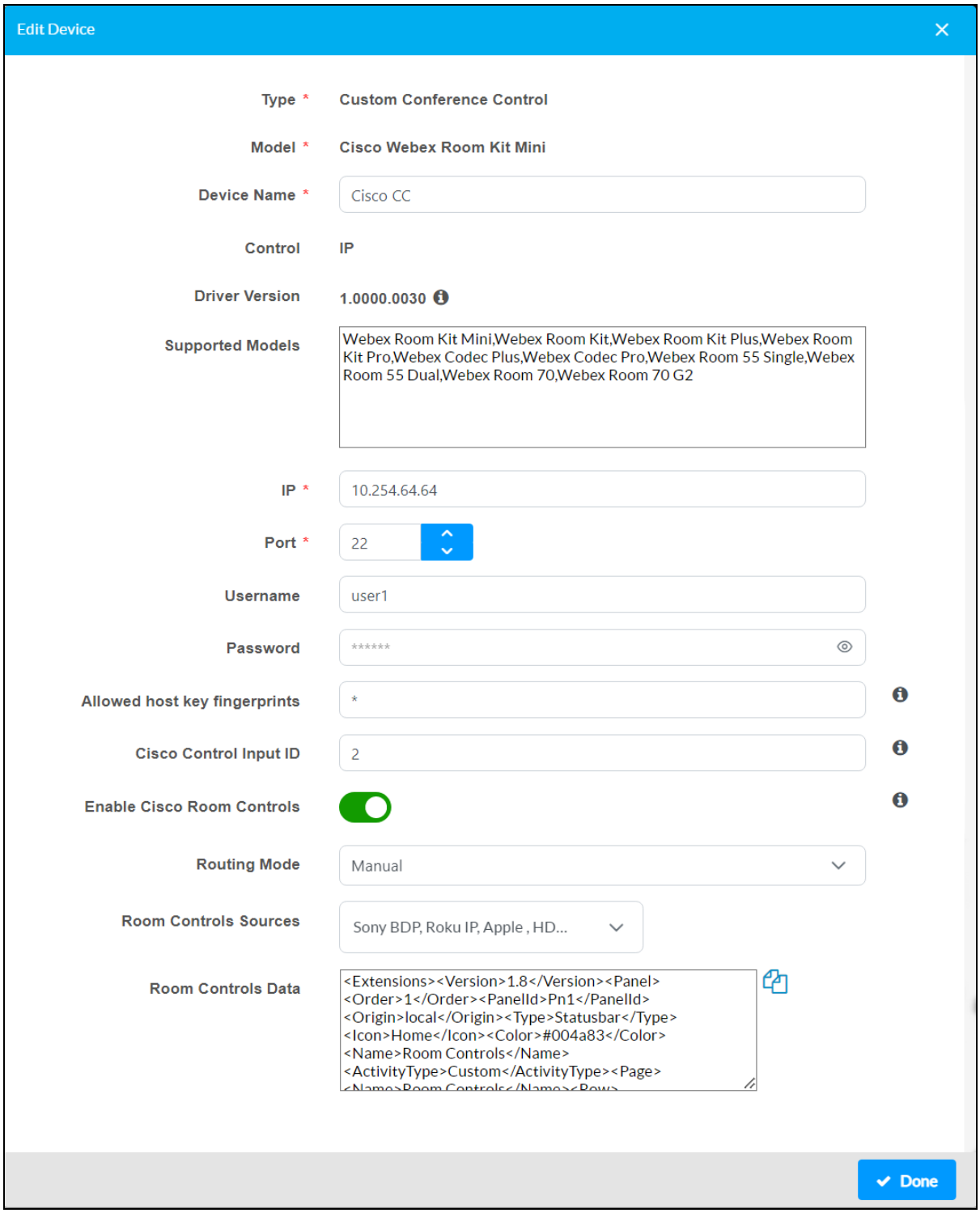
When using a serial Cisco Touch 10 driver, room control data is not transferred automatically from .AV Framework to the Cisco WebEx Room Kit device after changes are made to the driver configuration. The room control data must be saved as an XML file and transferred manually to the Cisco WebEx Room Kit device.

> **NOTE:** The room controls XML file should be transferred to the Cisco WebEx Room Kit device when the .AV Framework system is turned off. The AVF controller has no knowledge that an XML file was uploaded to the Cisco WebEx Room Kit device, so it will not resend current button states.

To transfer room control data manually to the Cisco WebEx Room Kit device:

1. Select the edit button next to the Cisco WebEx Room Kit in the **Manage Devices** accordion. The **Edit Device** dialog box is displayed for the Cisco WebEx Room Kit.

Edit Devices Dialog Box - Cisco Controller



2. Select the copy button next to **Room Controls Data** to copy the provided JSON output to the clipboard of the local computer.
3. Copy the JSON output to Notepad or a similar application, and then save the JSON output as an XML file.

   > **NOTE:** Alternately, the XML file for the room controls data can be obtained by connecting to the .AV Framework controller over an SFTP client, navigating to the **/user/avf/config/** directory, and then downloading the **Cisco-CiscoConfig.xml** file.

4. Log into the web configuration interface for the Cisco WebEx Room Kit device.
5. Select **UI Extensions Editor** in the left navigation menu.
6. If there are existing room controls for the device:
   a. Open the context menu in the top right corner of the page and select **Remove all UI extensions**. A confirmation dialog is displayed.
   b. Select **Yes** to confirm the removal.
   c. Open the context menu in the top right corner of the page and select **Export to video system** to clear the existing room controls.
7. To load the new room controls:
   a. Open the context menu in the top right corner of the page and select **Import from file**.
   b. When prompted, navigate to the room controls XML file that is saved to the local computer and import it to the device.
   c. After the XML file is imported, open the context menu in the top right corner of the page and select **Export to video system** to export the new room controls to the device.

Appendix K: Configure Microsoft Teams Custom Conferencing

.AV Framework provides functionality that allows for custom conferencing via the Microsoft Teams® software application. Once this functionality is configured, the **Present** screen in the .AV Framework system can be accessed from the Microsoft Teams user interface via a UC-ENGINE device.

The following procedure describes how to configure Microsoft Teams custom conferencing for .AV Framework.

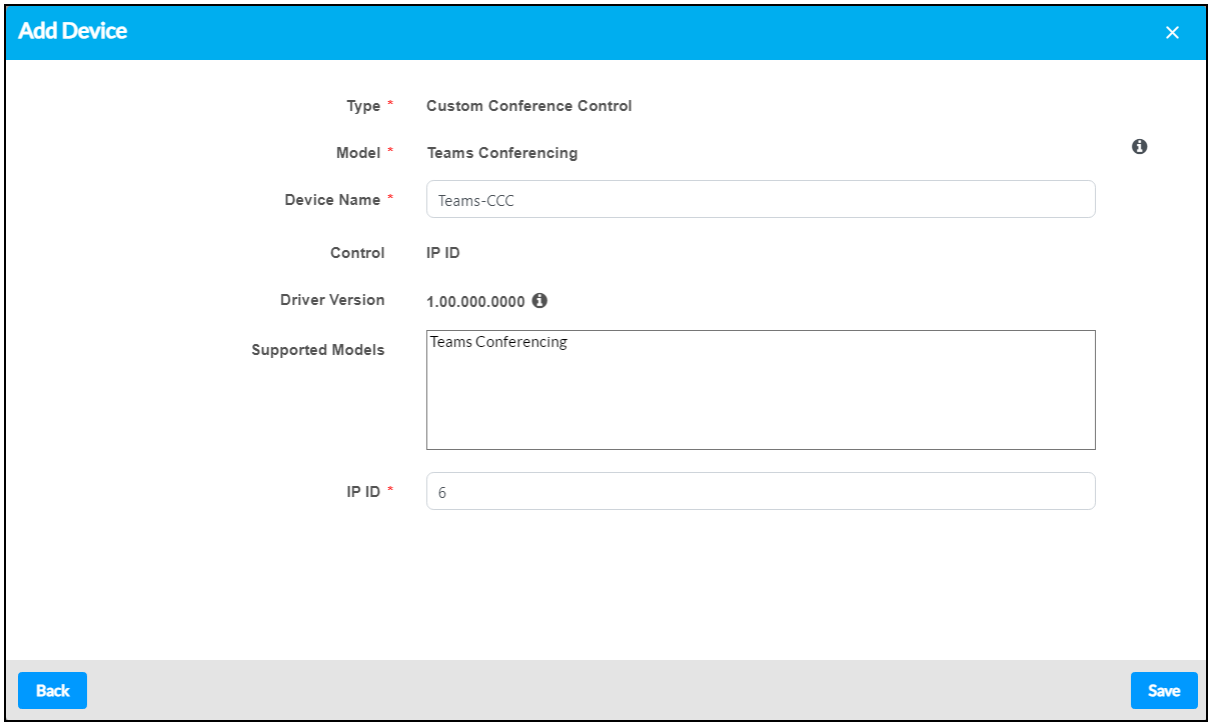
> **NOTE:** A Microsoft Teams software account is required to use this functionality. Refer to your IT administrator for assistance.

.AV Framework Configuration

1. Navigate to **Settings** > **Manage Devices** within the .AV Framework web configuration interface.
2. Select **Add Device**. The **Add Device** dialog box is displayed.
3. Navigate to and select the appropriate Microsoft Teams device driver in the provided table. For more information on adding devices, refer to Manage Devices on page 54.
4. Enter a descriptive name for the device in the **Device Name** text field.
5. Select **Next**. Additional information and settings for the device are displayed.

   > **NOTE:** The Microsoft Teams device driver is imported from the cloud and installed into the .AV Framework system automatically.

Add Device Dialog Box - Custom Conference Control



6. Select **Save**. The Microsoft Teams device is added to the device list for the .AV Framework system.

> **NOTE:** The .AV Framework system must be activated after adding the Microsoft Teams device. The Microsoft Teams device should also be added after adding and configuring all other input devices in the system, as the configuration options for the device reflect the current input configuration for the system. For more information on configuring inputs, refer to Configuration on page 15.

The following additional configuration is also recommended to configure the UC-ENGINE device output that is connected to the .AV Framework switcher device:

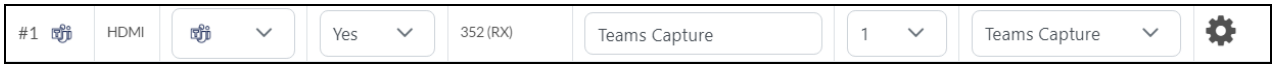
> **NOTE:** The Microsoft Teams device must first be added to the .AV Framework system as described in the procedure above. Adding the Microsoft Teams device will expose a **Video** device type for the switcher input and a **Capture** device type for the switcher output. The user-defined name created for the Microsoft Teams device is added to the beginning of these selection names.

1. Navigate to **Settings** > **AV Routing** within the .AV Framework web configuration interface.
2. Select the **[Microsoft Teams] Video** device type on the switcher input that is connected to the UC-ENGINE.

AV Routing Accordion - Video Switcher Input

3. Select the **[Microsoft Teams] Capture** device type on the switcher output that is connected to the UC-ENGINE input.

   AV Routing Accordion - Capture Switcher Output

   > **NOTE:** The **[Microsoft Teams] Capture** output cannot be set to use fixed or follows routing. If **Microsoft Teams Capture** is selected for an output that previously was set to use fixed or follows routing, the routing setting will be cleared.

4. Activate the .AV Framework system.

UC-ENGINE Device Configuration

Use the following procedure to configure the Microsoft Teams custom conferencing project for the UC-ENGINE device.

1. Open the **Crestron Settings App** on the UC-ENGINE device as described in the Crestron Flex Unified Communications Solution Product Manual.
2. Select **Load Project** from the navigation menu.
3. Load the required .AV Framework UI VTZ project to the UC-ENGINE as described in the Crestron Flex Unified Communications Solution Product Manual.
4. Select **IP Table** from the navigation menu.
5. Create a new IP table entry for the AVF controller that is running Microsoft Teams custom conferencing as described in the Crestron Flex Unified Communications Solution Product Manual.

   > **NOTE:** Do not change the port value from its default setting (41794).

6. Select **Done**, and then restart the UC-ENGINE.

An updated Microsoft Teams UI should be shown on the connected touch screen or XPanel after the UC-ENGINE restarts. A slider control button is shown on the bottom right of the Microsoft UI that, when pressed, performs a page flip to the .AV Framework **Present** screen. Tap the black border around the **Present** screen or wait until the timeout period expires to flip back to the Microsoft Teams UI.

TSW/TS-70 Series Device Configuration (Optional)

A TSW-70 or TS-70 series touch screen can also be configured to display the Microsoft Teams custom conferencing project.

1. Access the device web configuration interface as described in the TSW-70 Series Product Manual.
2. Navigate to **Settings** > **Applications**.

3. Select **Teams Video** from the **Applications** drop-down menu.
4. Select **Save Changes** from the **Action** menu, and then restart the touch screen when prompted.
5. After the touch screen restarts, navigate back to **Settings** > **Applications**.
6. Enter the following additional information for the Teams Video application:
    - **Teams Video PC Address**: Enter the IP address of the UC-ENGINE running the .AV Framework UI VTZ project.
    - **Teams Video PC Port**: Enter the port number UC-ENGINE running the .AV Framework UI VTZ project.
    - **Teams Video Username**: Enter the username for the UC-ENGINE admin account.
    - **Teams Video Password**: Enter the password for the UC-ENGINE admin account.
7. Select **Save Changes** from the **Action** menu. The touch screen attempts to connect to the UC-ENGINE.

If the connection to the UC-ENGINE is successful, the Microsoft Teams UI with the .AV Framework UI page flip is shown on the touch screen.

Appendix L: Configure Google Meet Custom Conferencing

.AV Framework provides functionality that allows for custom conferencing via the Google Meet™ video conferencing system. Once this functionality is configured, the **Present** screen in the .AV Framework system can be accessed from the Google Meet user interface via a compatible third-party controller.

The following procedure describes how to configure Google Meet custom conferencing for .AV Framework.

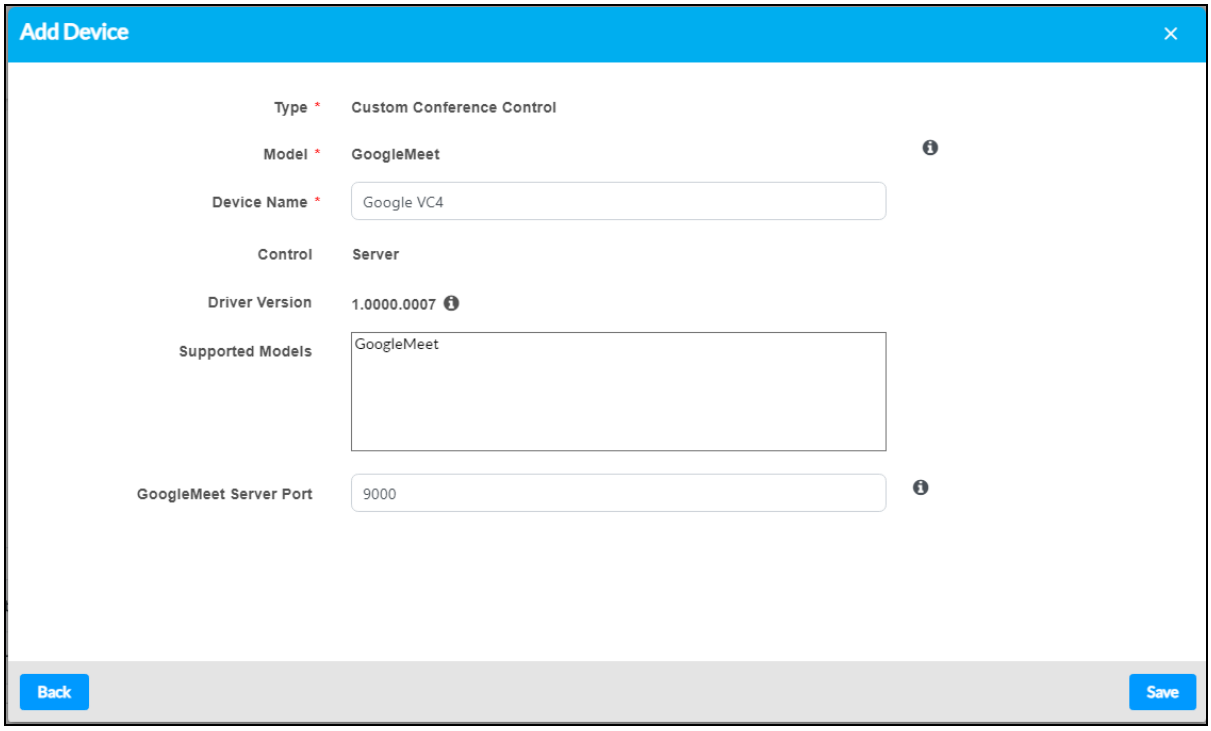
> **NOTE:** A Google Meet account is required to use this functionality. Contact your IT administrator for assistance.

.AV Framework Configuration

1. Navigate to **Settings** > **Manage Devices** within the .AV Framework web configuration interface.
2. Select **Add Device**. The **Add Device** dialog box is displayed.
3. Navigate to and select the appropriate Google Meet device driver in the provided table. For more information on adding devices, refer to Manage Devices on page 54.
4. Enter a descriptive name for the device in the **Device Name** text field.
5. Select **Next**. Additional information and settings for the device are displayed.

   > **NOTE:** The Google Meet device driver is imported from the cloud and installed into the .AV Framework system automatically.

Add Device Dialog Box - Custom Conference Control

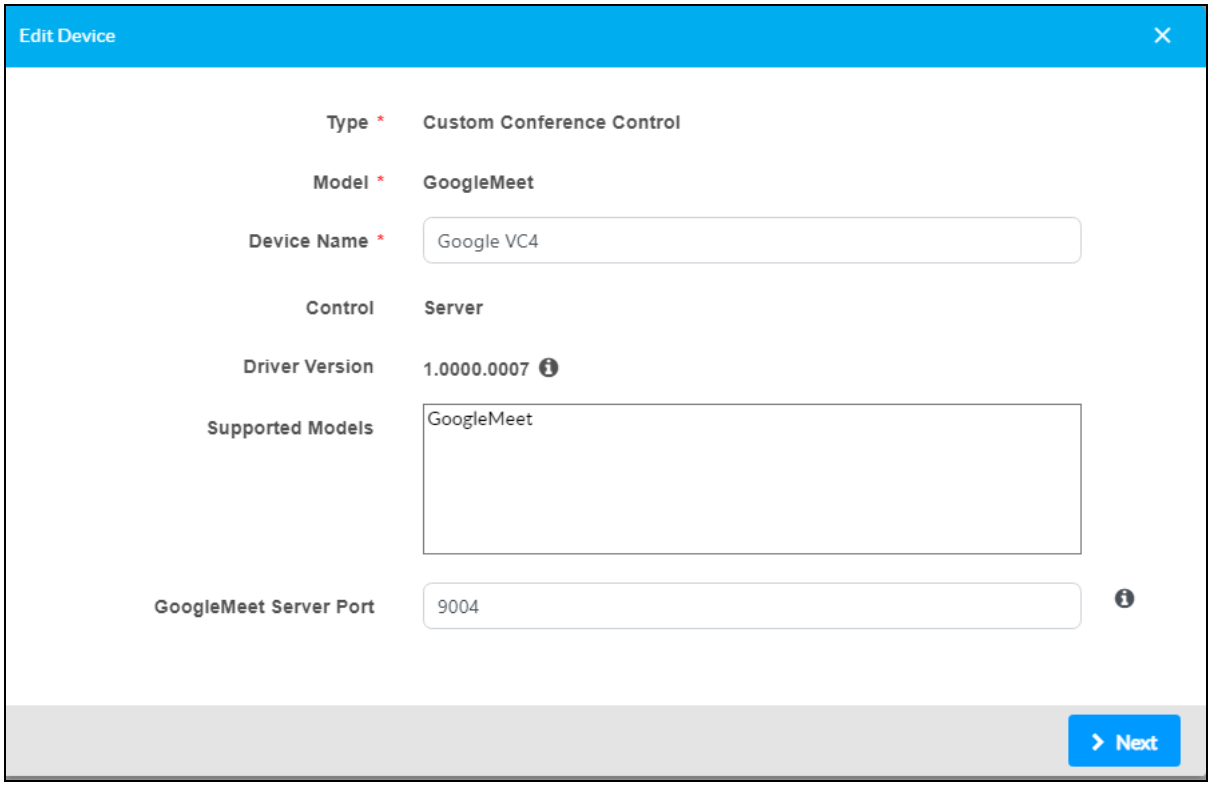


6. Enter the network port used by the Google Meet server. This information is provided by your IT administrator.
7. Select **Save**. The Google Meet device is added to the device list for the .AV Framework system.

> **NOTE:** The .AV Framework system must be activated after adding the Google Meet device. The Google Meet device should also be added after adding and configuring all other input devices in the system, as the configuration options for the device reflect the current input configuration for the system. For more information on configuring inputs, refer to Configuration on page 15.

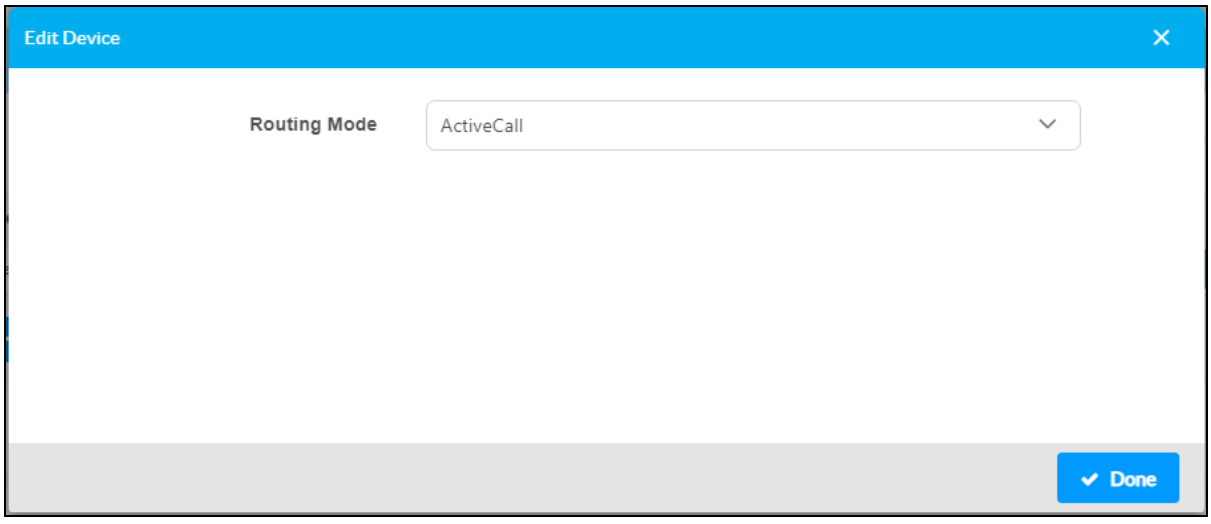
8. Select the edit button next to the Google Meet device in the **Manage Devices** accordion. The **Edit Device** dialog box is displayed for the Google Meet device.

Edit Devices Dialog Box - Google Meet Device



9. Select **Next** to display additional configuration options.

Edit Devices Dialog Box - Google Meet Device



10. Use the **Routing Mode** drop-down menu to select the routing behavior for the Google Meet device when an active Google Meet call is detected.
    - **Manual**: The Google Meet output source must be routed to any displays manually.
    - **ActiveCall**: The Google Meet output source will be routed to all displays automatically.

    > **NOTE:** Observe the following points for active call routing:
    > - No routing changes occur after the Google Meet call is disconnected. Any routing that was in use prior to the Google Meet call must be manually reset.
    > - If a switcher output (other than the **[Google Meet] Capture** output) has a fixed route to a display, the Google Meet call will not be routed to that output.
    > - If a switcher output (other than the **[Google Meet] Capture** output) has a follows route to a display, the Google Meet call will also be routed to that output.

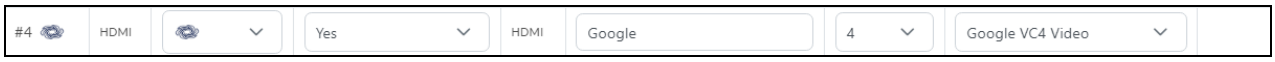
11. Select **Done**.

The following additional configuration is also recommended to configure a UC-ENGINE device output that is connected to the .AV Framework switcher device:

> **NOTE:** The Google Meet device must first be added to the .AV Framework system as described in the procedure above. Adding the Google Meet device will expose a **Video** device type for the switcher input and a **Capture** device type for the switcher output. The user-defined name created for the Google Meet device is added to the beginning of these selection names.

1. Navigate to **Settings** > **AV Routing** within the .AV Framework web configuration interface.
2. Select the **[Google Meet] Video** device type on the switcher input that is connected to the UC-ENGINE.

   AV Routing Accordion - Video Switcher Input

3. Select the **[Google Meet] Capture** device type on the switcher output that is connected to the UC-ENGINE input.

   AV Routing Accordion - Capture Switcher Output

   > **NOTE:** The **[Google Meet] Capture** output cannot be set to use fixed or follows routing. If **[Google Meet] Capture** is selected for an output that previously was set to use fixed or follows routing, the routing setting will be cleared.

4. Activate the .AV Framework system.

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