XiO Cloud®

Provisioning and Management Service

User Guide

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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Contents

Introduction

The XiO Cloud® provisioning and management service allows all supported Crestron® devices and certain supported third-party devices across an enterprise to be managed and configured from one central, secure location in the cloud. The XiO Cloud service may be used to view the status of a device, to configure various device and network settings, to manage licenses, and to update device firmware.

The XiO Cloud service is an IoT (Internet of Things) based platform that provides the following benefits for an enterprise:

Quick Deployment

- Configure new or replacement devices before installation
- Retrieve device settings automatically
- Drag-and-drop naming, configuration, and organization

Remote Management

- Change settings for multiple devices across the enterprise simultaneously
- Update firmware for all devices across the enterprise simultaneously
- View cloud audit logs to identify and resolve issues quickly

Instant Monitoring

- View live status of all connected devices from anywhere at any time
- Monitor device changes in real time
- No extra configuration tools are required for monitoring

Confident Evolution

- Interactive dashboards provide real-world usage data
- No programming is required for data gathering
- Optimize workplace technology experiences

For more details and additional resources, refer to https://www.crestron.com/xiocloud.

> **NOTE:** This document is current as of the XiO Cloud version 1.48 release.

How to Order

The following sections describe how to order the XiO Cloud service from Crestron.

Select Room Licenses

The XiO Cloud service environment consists of groups, rooms, and devices. Rooms provide an organizational hierarchy for devices according to geographic location, department, or any other structure that is appropriate for the organization. Devices must be associated with licensed rooms before device status can be viewed or device settings can be configured.

Room-based licenses provide various features that are billed monthly or invoiced in full. Each room in XiO Cloud requires purchase of one Endpoint Management (SW-XIOC-EM) license. Additional licenses can then be purchased for the room or account depending on the desired functionality. Different rooms can have different license combinations.

The following features are provided in each room-based license:

> **NOTE:** As of XiO Cloud release 1.36, managing device licenses (such as VC-4 server licenses) within XiO Cloud no longer requires purchase of any XiO Cloud room-based licenses. For more information, refer to Manage Licenses on page 46.

- **Endpoint Management (SW-XIOC-EM)**: Provides the functionality required to deploy and manage devices, including configuring device settings and viewing device status, firmware upgrades, custom code deployment, and actions such as firmware updates. **Required for all rooms in an XiO Cloud installation.**
- **Support (SW-XIOC-S)**: Provides tools for managing support for rooms, including remote viewing and control for touch screens, email and SMS alerts, and certain dashboards.
- **REST API (SW-XIOC-API)**: Provides access to a REST API used to pull device status into other services. The API license must be purchased for all rooms in an account to use this functionality.
- **Workplace Analytics (SW-XIOC-WA)**: Provides access to dashboards that show how a room or space is used within an organization. **This feature is currently provided as a complimentary beta with each Endpoint Management license.**

Refer to the XiO Cloud feature comparison table for a comparison matrix showing the features provided by each license type. This table can also be accessed via the XiO Cloud product pages at www.crestron.com.

The following table provides an overview of the room license types and features. For more information on each license type, including pricing, visit its product page by selecting the appropriate link in the table.

License/Service	Model/SKU #	Key Features
SW-XIOC-EM (Endpoint Management)	3001922	Provision devices offsite, manage devices remotely
SW-XIOC-S (Support)	3001923	Support device remotely, receive alerts, view incident dashboards
SW-XIOC-API (REST API Access)	3001925	Integrate with preferred Business Intelligence (BI) or management tools
SW-XIOC-WA (Workplace Analytics)	N/A	Receive actionable usage data Beta version included with purchase of SW-XIOC-EM license

Purchasing Instructions

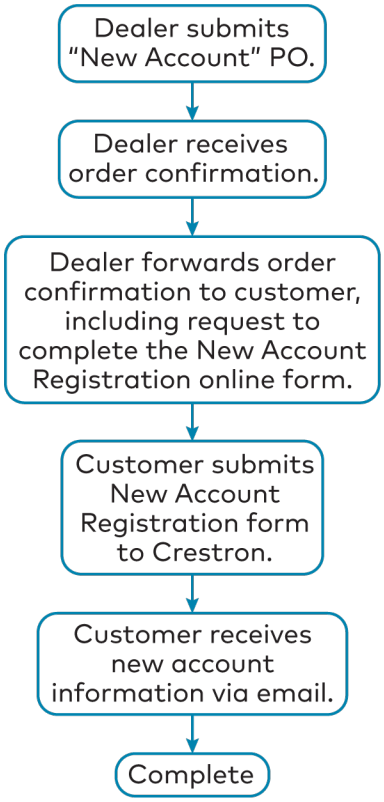
Authorized Resellers (dealers) can purchase new XiO Cloud accounts or renew existing accounts for end users or partners (customers) directly through Crestron. Purchasing instructions differ depending on whether the XiO Cloud accounts are new or existing.

New XiO Cloud Accounts

To purchase new XiO Cloud accounts for a customer:

1. The dealer submits a purchase order (PO) for XiO Cloud to orders@crestron.com (US), ceurorders@crestron.com (EU), or anzorders@crestron.com (ANZ). **Include the following information in the PO to avoid ordering delays:**
    - Specify that the order is for a new account
    - Customer and project name (for reference)
    - Quantity of rooms
    - Term of service (monthly or yearly)
    - Desired billing structure (monthly or single payment)
2. The dealer receives an order confirmation along with a link to the XiO Cloud new registration form.
3. The dealer forwards the order confirmation to the customer, including the request to complete the XiO Cloud new registration form.
4. The customer submits the XiO Cloud new registration form directly to Crestron.
5. The customer receives the new account information via email, including account credentials and a temporary password. Invoicing is sent the same day.

Refer to the following process diagram for an overview on how to order new XiO Cloud accounts.

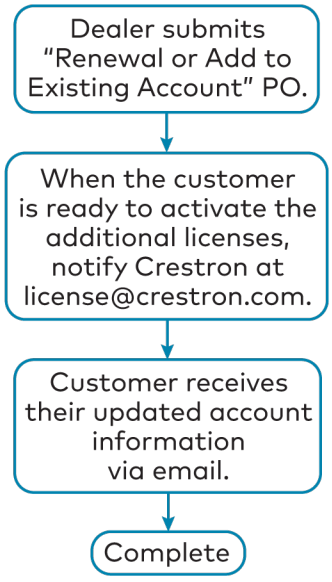


Existing XiO Cloud Accounts

To renew existing XiO Cloud accounts or to add additional licenses for a customer:

1. The dealer submits a purchase order (PO) for XiO Cloud to orders@crestron.com (US), ceurorders@crestron.com (EU), or anzorders@crestron.com (ANZ). **Include the following information in the PO to avoid ordering delays:**
    - Specify whether the order is to renew an account or add licenses
    - Customer and project name (for reference)
    - XiO Cloud account name and identification number
    - Quantity of rooms
    - Term of service (monthly or yearly)
    - Desired billing structure (monthly or single payment)
2. When the customer is ready to activate the additional licenses, they must notify Crestron via email at license@crestron.com. Include the PO number, dealer name, XiO Cloud account name, and order details in the email.
3. The customer receives their updated account information via email, including the updated list of room accounts and expiration dates. Invoicing is sent the same day.

Refer to the following process diagram for an overview on how to renew existing XiO Cloud accounts or add new licenses.



Log in to the Service

A registered XiO Cloud account is required to use the XiO Cloud service. To register for an account, visit www.crestron.com/Support/Tools/Licensing-Registration/XiO-Account-Registration.

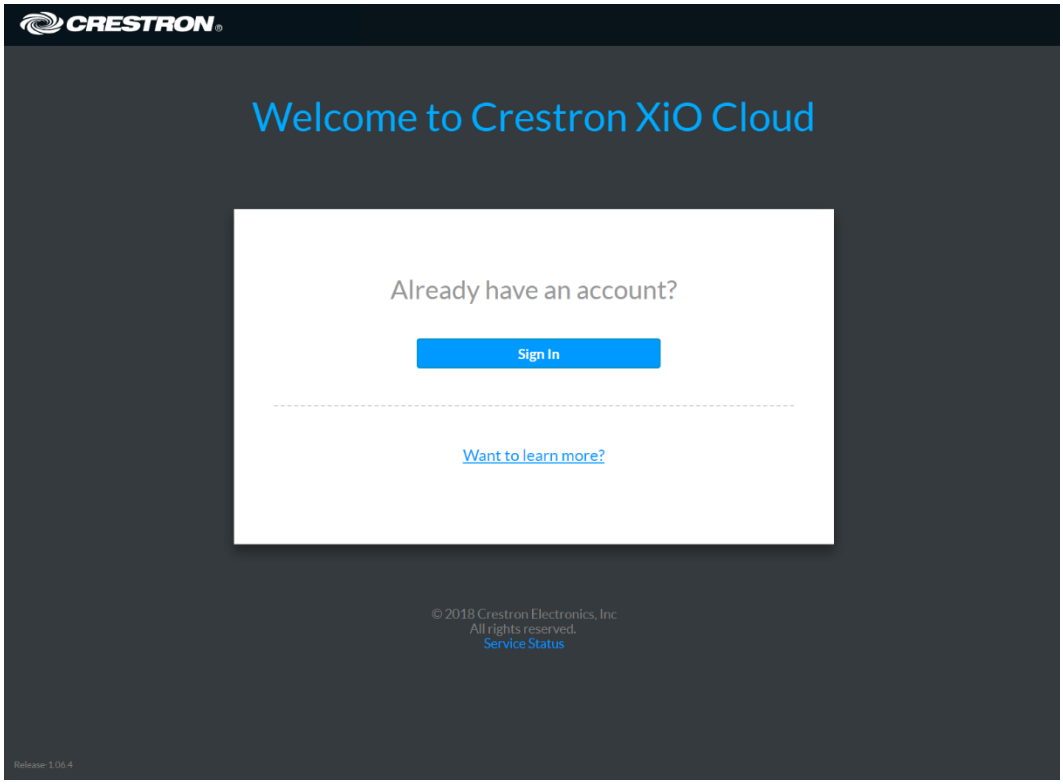
The first individual at an organization to register for the service will receive an email from Crestron that provides a username and a temporary password. These credentials are used for the initial login.

Additional users are added from within the XiO Cloud service. For information about managing, adding, and deleting users, refer to Manage Users on page 62.

To log in to the XiO Cloud service:

1. Navigate to https://portal.crestron.io. The XiO Cloud landing page is displayed.

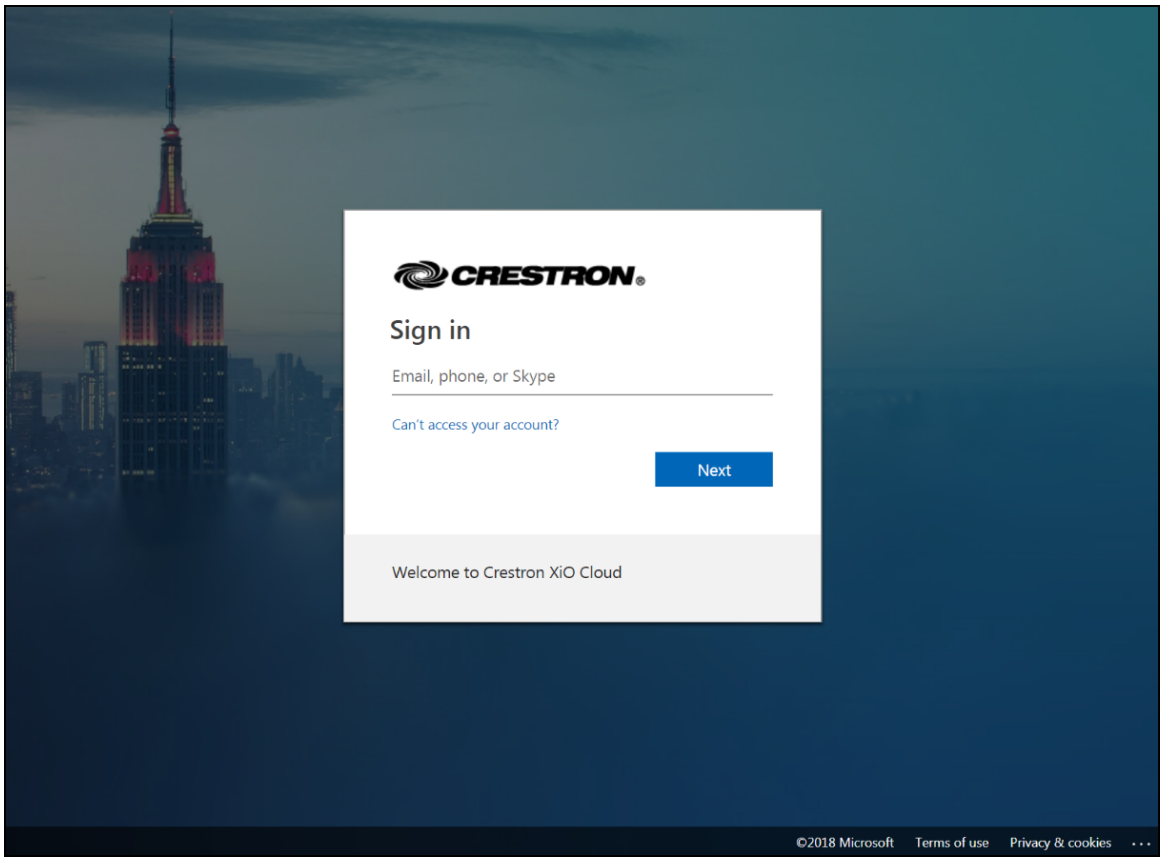
   XiO Cloud Landing Page



2. Select **Sign In**. A Microsoft® Azure® service page for entering login credentials is displayed.

   Crestron uses Microsoft Azure services to manage login credentials for the highest level of enterprise security.

   Sign In Page

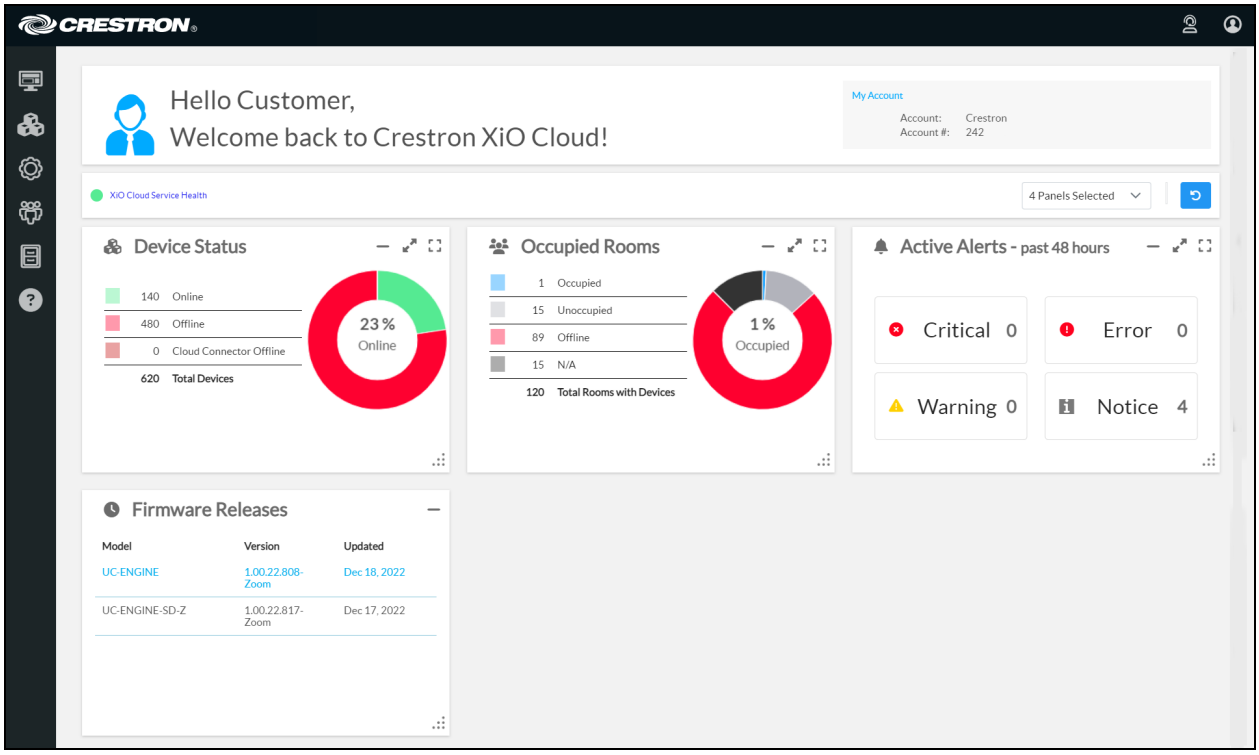


3. Enter the username (provided in the email) in the text field, and then select **Next**.
4. Enter the temporary password (provided in the email) in the text field, and then select **Next**.

If this is the first login, the user is asked to change their password and to provide an email address and mobile number. The email address and phone number are used for account recovery if the username or password is forgotten.

Upon successful login, the user is redirected to the XiO Cloud service with the **Dashboard** page open by default.

XiO Cloud Service Dashboard Page



Navigate the Service

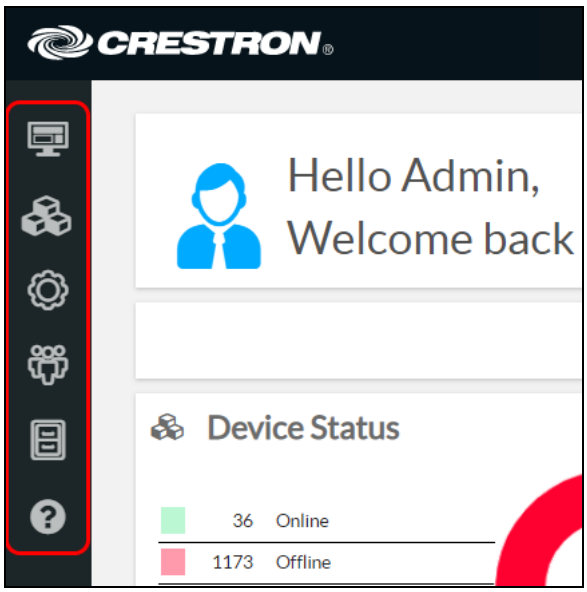
The XiO Cloud service provides the following informational controls on the top right of the page.

Informational Controls

- Select the profile button to display general information for the active XiO Cloud account. A **Sign out** button is also provided that is used to sign out of the service.
- Select the support button to display options for contacting Crestron True Blue support via email, chat, or phone.

The XiO Cloud service also provides a navigation menu on the left of the page. The navigation menu is used to access the primary functions of the service.

Navigation Menu



The following navigation controls are provided:

- Select the **Home** button  to access the account dashboard page. The home page is displayed by default after logging into the service.
- Select the **Groups** button  to access the group tree, which contains all groups, rooms, and devices in the account.
- Select the **Settings** button  to access account settings and to manage alerts.
- Select the **Users** button  to view and manage account users.
- Select the **File Upload** button  to view and manage uploaded files.
- Select the **Help** button  to view documentation for getting started with the XiO Cloud service.

Certain navigation controls show an expanded menu when selected. For example, selecting the **Groups** button  shows the group tree in the expanded menu.

- Expanded menus can be collapsed by selecting the collapse button  in the header bar.
- When the menu is collapsed, select the expand button  to display the menu again.

Build the Environment

The XiO Cloud service provides an environment that represents the organizational structure of an enterprise.

The XiO Cloud service environment consists of groups, rooms, and devices. Groups and rooms provide an organizational hierarchy for devices according to geographic location, department, or any other structure that is appropriate for the organization. Devices may be associated with groups or rooms once they are claimed by the service. Once devices are associated with groups or rooms, actions may be performed simultaneously for all devices within a group or room.

> **NOTE:** The ability to add rooms is provided for room-based XiO Cloud accounts only.

Use the following procedures to build the XiO Cloud service environment.

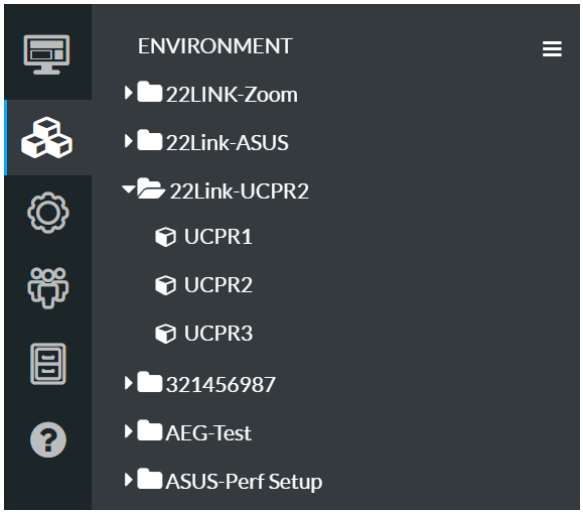
Create the Group Tree

The group tree is in the environment panel, which may be accessed by selecting the **Groups** button in the navigation menu.

The group tree is the primary organizational structure of the XiO Cloud environment. Top-level groups and rooms appear in the group tree once they are added to the environment. One or more subgroups or rooms may also be added under each group.

The group tree is located under the **ENVIRONMENT** menu on the left side of the configuration pages. Groups, subgroups, and rooms are ordered alphabetically.

Environment Menu

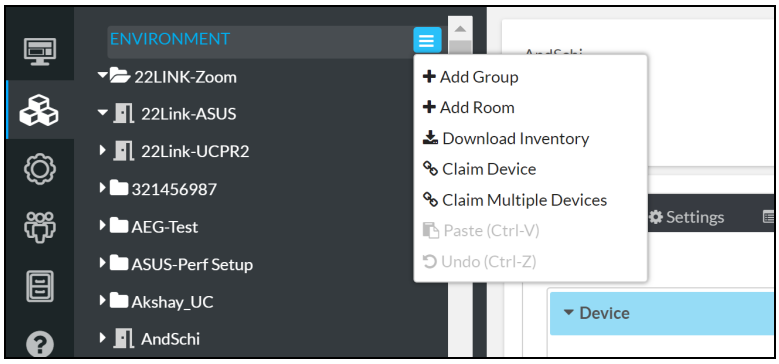


Create a Top-Level Group

To create a top-level group:

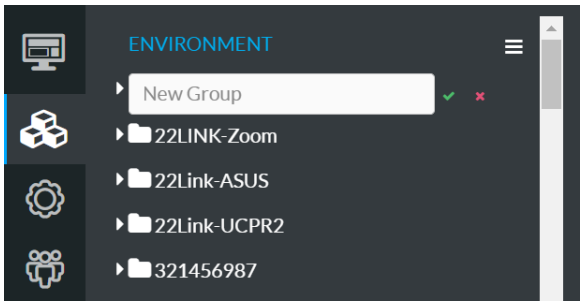
1. Select the **ENVIRONMENT** menu button to display a drop-down menu.

   Environment - Drop-Down Menu



2. Select **Add Group**. A new group is added to the group tree.

   Environment - New Group



3. Enter a descriptive group name in the **New Group** text field. A group name must be at least three characters long.

   > **NOTE:** Each group name must be unique. If a duplicate group name is entered, a notification is displayed stating that the group name already exists.

4. Select the green check icon or select **Enter** to save the group. Select the red **x** icon to discard the group.

The group is reordered alphabetically in the top level of the group tree after it is added.

Select the group from the group tree to view and configure group settings. For more information, refer to Configure Settings for a Group of Devices on page 42.

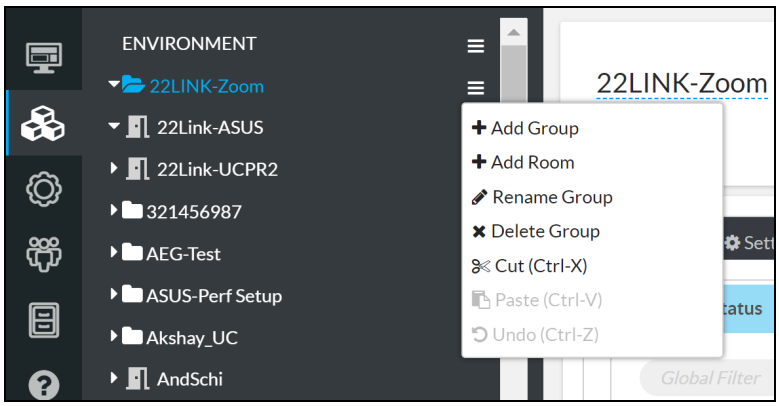
Create a Subgroup

One or more subgroups (or devices) may be added under the top-level group. A group hierarchy may contain up to eight levels. A group may contain either subgroups or devices, but not both.

To add a subgroup:

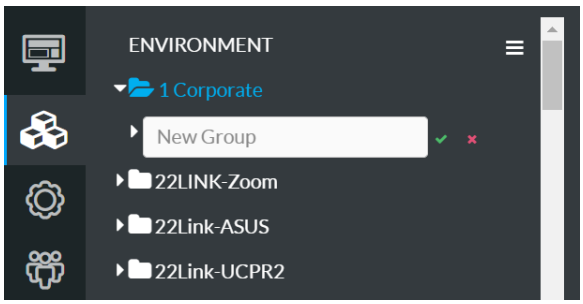
1. Position the cursor over the group name in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button ☰ for the group to display a drop-down menu.

   Group - Drop-Down Menu



3. Select **Add Group**. A new subgroup is added under the selected group.

   Group - New Group



4. Enter a descriptive subgroup name in the **New Group** text field. A subgroup name must be at least three characters long.
5. Select the green check icon ✔ or select **Enter** to save the subgroup. Select the red **x** icon ✖ to discard the subgroup.

The subgroup is reordered alphabetically within its parent group after it is added.

Select the subgroup from the group tree to view and configure subgroup settings. For more information, refer to Configure Settings for a Group of Devices on page 42.

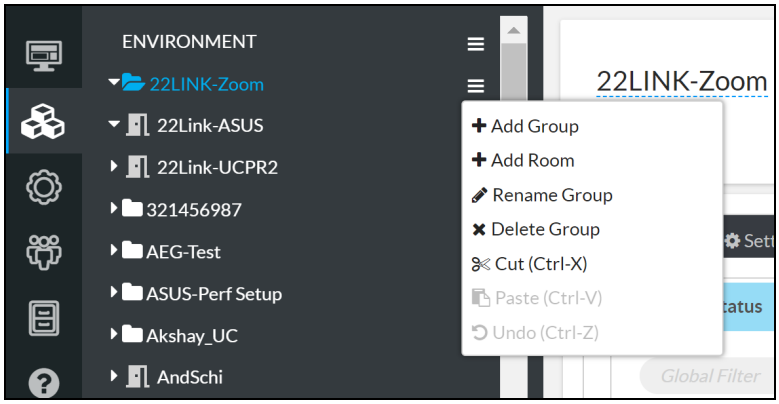
Rename a Group

Each group in the XiO Cloud service has a unique name, which allows the group to be identified and organized within the service. A group may be renamed as needed.

To change the group name in the group tree:

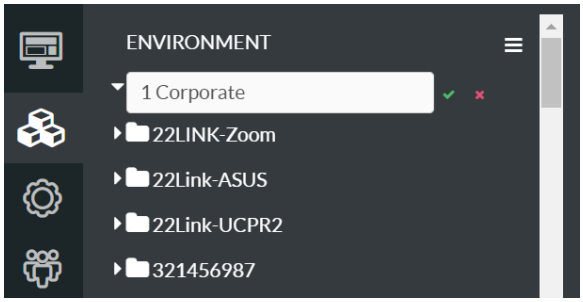
1. Position the cursor over the group name in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button for the group to display a drop-down menu.

   Group - Drop-Down Menu



3. Select **Rename Group**. The group name becomes an editable text box.

   Group - Edit Group Name



4. Enter a new group name in the text box. A group name must be at least three characters long.
5. Select the green check icon or select **Enter** to save the group name. Select the red **x** icon to discard the changes.

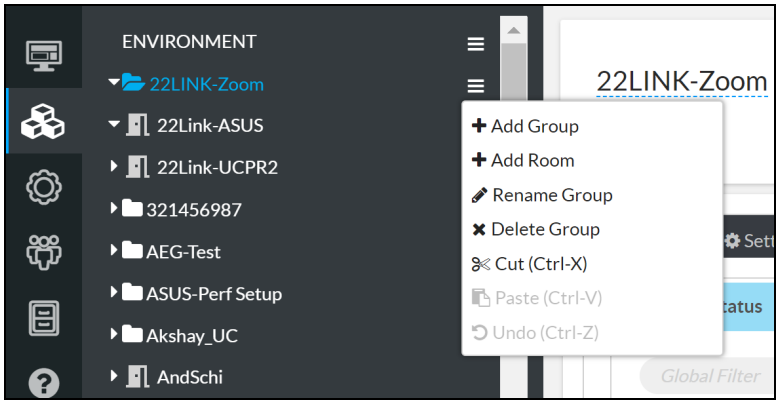
Delete a Group

Groups may be deleted from the XiO Cloud service environment as needed. A group that contains a device or a subgroup may not be deleted until the devices or subgroups are removed.

To delete a group from the group tree:

1. Position the cursor over the group name in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button for the group to display a drop-down menu.

   Group - Drop-Down Menu



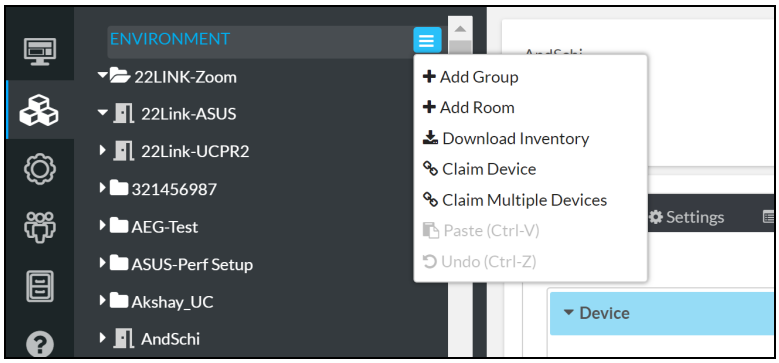
3. Select **Delete Group**. A confirmation dialog box is displayed.
4. Select **Yes** to delete the group or select **No** to cancel the deletion.

Create a Room

To create a room for room-based accounts:

1. Select the **ENVIRONMENT** menu button to display a drop-down menu.

   Environment - Drop-Down Menu



2. Select **Add Room**. A new room is added to the group tree.
3. Enter a descriptive group name in the **New Room** text field. A room name must be at least three characters long.

   > **NOTE:** Each room name must be unique. If a duplicate room name is entered, a notification is displayed stating that the room name already exists.

4. Select the green check icon or select **Enter** to save the room. Select the red **x** icon to discard the room.

The room is reordered alphabetically in the top level of the group tree after it is added.

Select the room from the group tree to view and configure group settings. For more information, refer to Configure Settings for a Group of Devices on page 42.

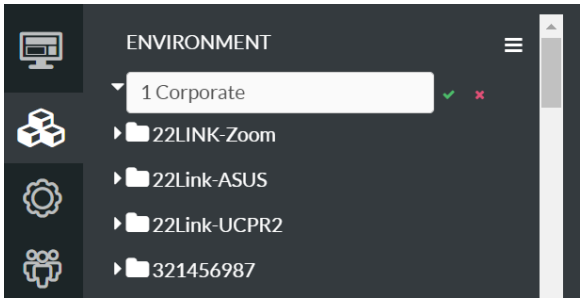
Rename a Room

Each room in room-based XiO Cloud accounts has a unique name, which allows the room to be identified and organized within the service. A room may be renamed as needed.

To change the room name in the group tree:

1. Position the cursor over the group name in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button for the group to display a drop-down menu.
3. Select **Rename Room**. The group name becomes an editable text box.

   Room - Edit Room Name



4. Enter a new group name in the text box. A room name must be at least three characters long.
5. Select the green check icon or select **Enter** to save the room name. Select the red **x** icon to discard the changes.

Delete a Room

Rooms may be deleted from a room-based XiO Cloud account environment as needed. A room that contains a device or a subgroup may not be deleted until the devices or subgroups are removed.

To delete a room from the group tree:

1. Position the cursor over the group name in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button for the group to display a drop-down menu.
3. Select **Delete Room**. A confirmation dialog box is displayed.
4. Select **Yes** to delete the group or select **No** to cancel the deletion.

Claim Devices

Devices must be claimed by the XiO Cloud service before they may be managed by the service. Devices may be claimed individually or as a group.

> **NOTE:** Supported third-party devices that do not use the Crestron Connected® connection protocol must be claimed using a Crestron control system or the Crestron XiO Cloud™ Gateway software. For more information, refer to the XiO Cloud® Service Third-Party Device Monitoring Configuration Guide.

Claim a Single Device

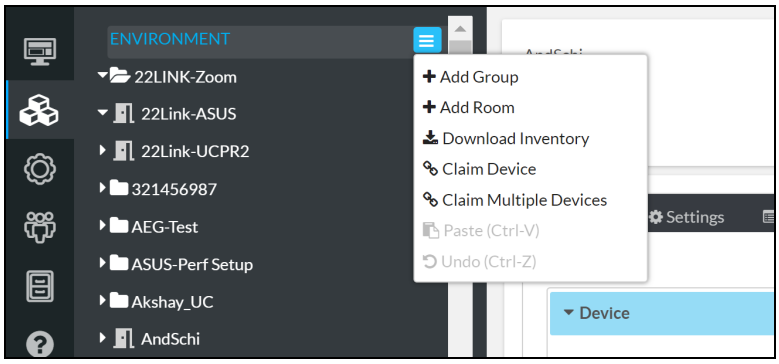
To claim a single device:

1. Record the MAC address and serial number of the device. The MAC address and serial number are labeled on the shipping box or on a sticker attached to the device.

   > **NOTES:**
   >
   > - If the device has multiple MAC addresses, use the MAC address that is providing the primary connection back to the network. For most devices, the Ethernet MAC address should be used. However, if your device is connecting to the network over a different protocol (such as Wi-Fi® communications), use the MAC address for that protocol instead.
   > - If claiming a Crestron software product (such as Crestron Virtual Control server software), the serial number and MAC address are generated by the software and can be located using its web configuration interface. For Crestron software products that are preinstalled on a computer or other device (such as the VC-4-PC-3), do not use the serial number and MAC address labeled on the device.

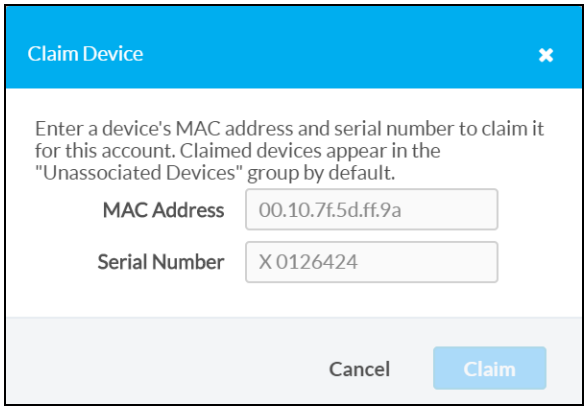
2. In the XiO Cloud service, select the **ENVIRONMENT** menu button to display a drop-down menu.

   Environment - Drop-Down Menu



3. Select **Claim Device**. The **Claim Device** dialog box is displayed.

   Claim Device Dialog Box



4. Enter the MAC address and serial number recorded in step 1 in the **MAC Address** and **Serial Number** fields, respectively.
5. Select **Claim**. A success message is displayed if the claim is successful.

   > **NOTE:** If an error message is displayed stating that the device does not exist, connect the device to a network that has access to the internet, wait 15 minutes, and then try again.

6. Select **X** to close the dialog box. The host name of the claimed device is displayed in the device tree under the group **Unassociated Devices**.

   Unassociated Devices

The device may now be managed and assigned to a group or room.

Claim Multiple Devices

To claim multiple devices:

1. Record the MAC address and serial number of each device as a comma delimited CSV file. The MAC address and serial number are labeled on the shipping box or on a sticker attached to the device.

   NOTES:

   - If the device has multiple MAC addresses, use the MAC address that is providing the primary connection back to the network. For most devices, the Ethernet MAC address should be used. However, if your device is connecting to the network over a different protocol (such as Wi-Fi® communications), use the MAC address for that protocol instead.
   - If claiming a Crestron software product (such as Crestron Virtual Control server software), the serial number and MAC address are generated by the software and can be located using its web configuration interface. For Crestron software products that are preinstalled on a computer or other device (such as the VC-4-PC-3), do not use the serial number and MAC address labeled on the device.

   The CSV file should be formatted as shown below:

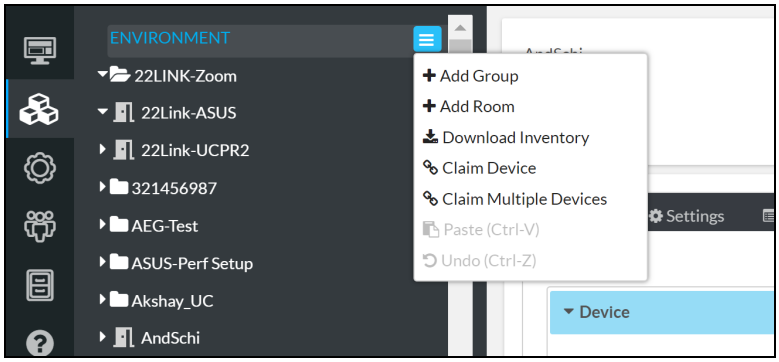
   CSV File Format

   ```
   MAC Address,Serial Number
   00.10.7e.8b.81.b6,17284712
   00.10.7e.8b.8c.87,17284570
   00.10.7e.96.83.93,1716JBG01207
   00.10.7e.96.92.0a,1716JBG01550
   00.10.7e.8b.87.c1,17284670
   ```

   NOTE: An optional third column may be added to the CSV file with custom device names. After being claimed, the device will take the custom name from the CSV file instead of its default name. For example, if adding a custom device name to the first example above, the formatting would be `00.10.73.8b.81.b6,17284712,[custom device name]`

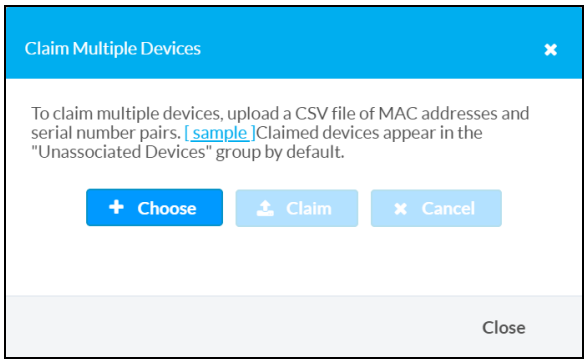
2. Save the CSV file to a location that may be accessed by the computer used to access the XiO Cloud service.
3. In the XiO Cloud service, select the **ENVIRONMENT** menu button  to display a drop-down menu.

Environment - Drop-Down Menu



4. Select **Claim Multiple Devices**. The **Claim Multiple Devices** dialog box is displayed.

Claim Multiple Devices Dialog Box



5. Select **Choose**, and then select the CSV file created in step 1.
6. Select **Claim** to claim all of the devices listed in the file. A message indicating the claim status of each device is displayed.

> **NOTE:** If an error message is displayed stating that a device does not exist, connect that device to a network that has access to the internet, wait 15 minutes, and then try again.

7. Select **X** to close the dialog box. The host names of the claimed devices appear in the device tree under the group **Unassociated Devices**.

Unassociated Devices

The devices may now be managed and assigned to a group or room.

Unclaim Devices

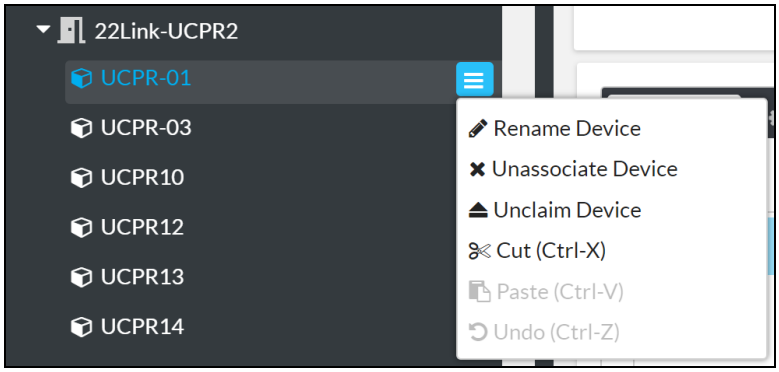
Devices may be unclaimed to remove them from a user's account. Once a device is unclaimed:

- The device is no longer counted against the allotted number of devices for the account
- The device may be claimed by another account.
- The XiO Cloud service no longer enforces any settings on the device.

To unclaim a device:

1. Position the cursor over the device in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button ☰ of the device to display a drop-down menu.

   Device - Drop-Down Menu



3. Select **Unclaim Device**. A confirmation dialog box is displayed.
4. Select **Yes** to unclaim the device, or select **No** to cancel.

> **NOTE:** If a device that has any licenses on it is unclaimed, the licenses remain with the account and not the device. The licenses are removed from the device once it is unclaimed, and the licensed functionality is no longer available on the device.

Add Devices to Groups or Rooms

Devices may be added to groups or rooms after they are claimed by the XiO Cloud service. Once devices are added to groups or rooms, all devices within a group or room may be monitored and controlled at once.

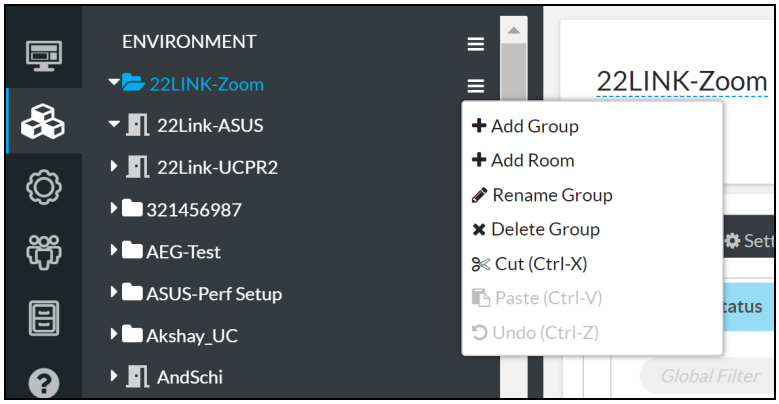
> **NOTE:** For room-based accounts, devices may only be added to rooms and not groups. For device-based accounts, devices may be added only to groups that do not contain any subgroups.

Two methods may be used to add devices to a group: Devices may be added via the context menu for the group or room, or devices may be dragged from the **Unassociated Devices** group into another group or room.

To add devices to a group or room via its context menu:

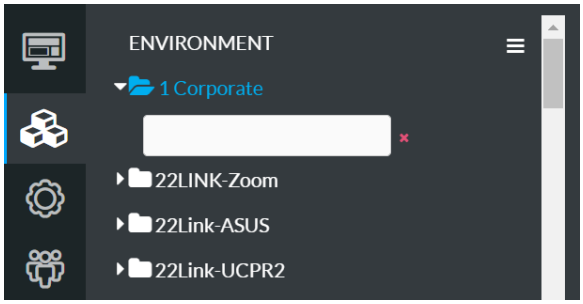
1. Position the cursor over the group or room name in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button ☰ for the group or room to display a drop-down menu.

   Group - Drop-Down Menu



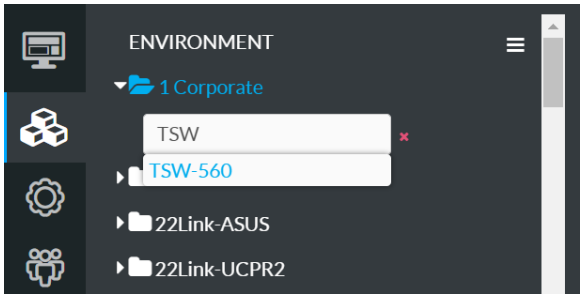
3. Select **Add Device**. A text box is added under the selected group or room.

   Group - Add Device Text Box



4. Start typing the name of the desired device. A list of claimed devices that match the entered text is displayed below the text box.

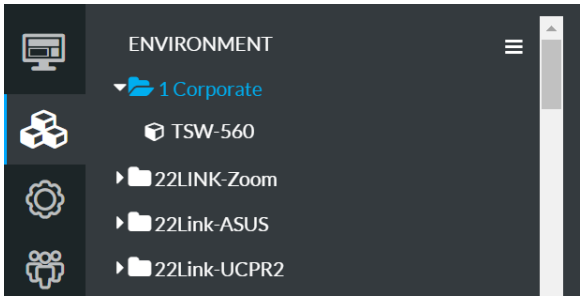
   Group - Add Device Text Box (with Text)



5. Select the desired device by clicking on it or by navigating to the device using the arrow keys and pressing **Enter**.

The device is reordered alphabetically within its parent group or room after it is added. It is no longer shown in the **Unassociated Devices** group.

Group - Device Added



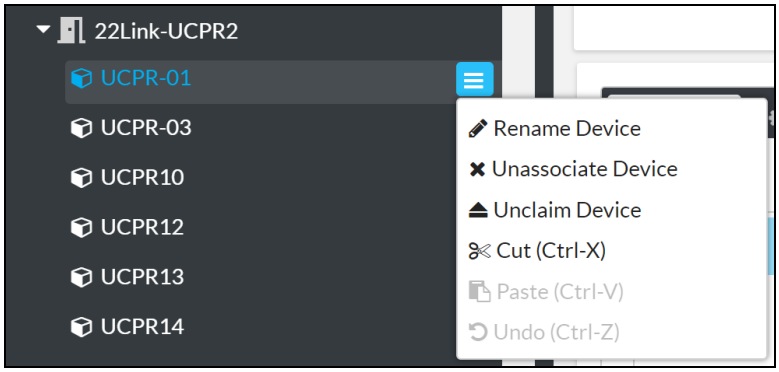
To drag a device from the **Unassociated Devices** group into another group or room:

1. Select and hold the pointer over the device.
2. Drag the device from the **Unassociated Devices** group and drop it into the desired group or room. The device is added to the group or room and is no longer shown in the **Unassociated Devices** group.

To return a device to the **Unassociated Devices** group:

1. Position the cursor over the device in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button for the device to display a drop-down menu.

   Device - Drop-Down Menu (Cut Action)



3. Select **Unassociate Device**. The device is added back to the **Unassociated Devices** group and is no longer shown in its previous group or room.

Devices may also be dragged to the **Unassociated Devices** group or to any other group or room that supports added devices.

Select the device from the group tree to view and configure device settings. For more information, refer to Configure Device Settings on page 39.

Cut and Paste

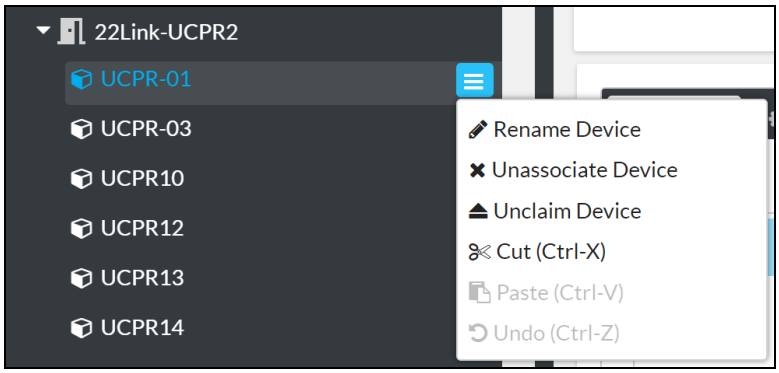
The cut and paste functionality allows items in the group tree to be moved more easily than the traditional drag and drop method, which is helpful when associating devices to rooms or groups in bulk. Cutting and pasting can be performed using the UI controls or keyboard shortcuts.

> **NOTE:** Any item in the group tree can be cut and pasted. However, pasted items must abide by the organizational hierarchy of the group tree. For example, devices can only be pasted to rooms or groups, top-level groups cannot be pasted under subgroups, and so forth.

To cut items (add them to the clipboard):

1. Select one or more items from the group tree. Press **Ctrl** + **Shift** on your keyboard to select multiple items.
2. Select the context menu button for one of the selected items to display a drop-down menu.

   Device - Drop-Down Menu

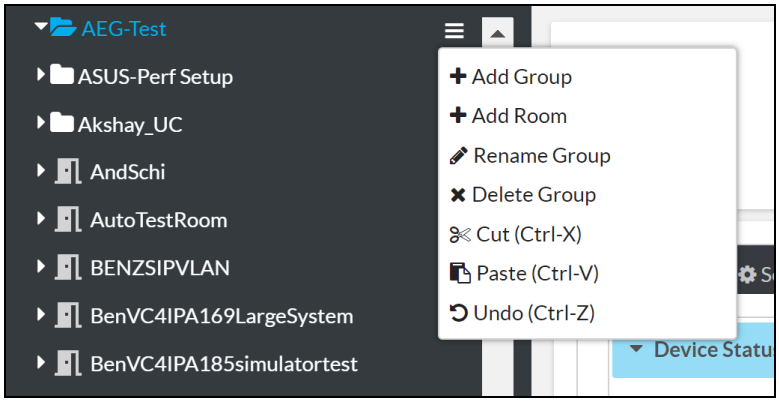


3. Select **Cut**. The selected item(s) are added to the clipboard. Alternately, press **Ctrl** + **x** on your keyboard to perform this action.

To paste items that have been cut (added to the clipboard):

1. Select the parent node in the group tree where the cut items should be pasted.
2. Select the context menu button for the selected group tree node.

   Group - Drop-Down Menu (Paste Action)



3. Select **Paste**. The selected item(s) are pasted into the selected group tree node as long as it abides by the group tree hierarchy. Alternately, press **Ctrl** + **v** on your keyboard to perform this action.

To undo the previous cut or paste action, select **Undo** from the appropriate context menu or press **Ctrl** + **z** on your keyboard.

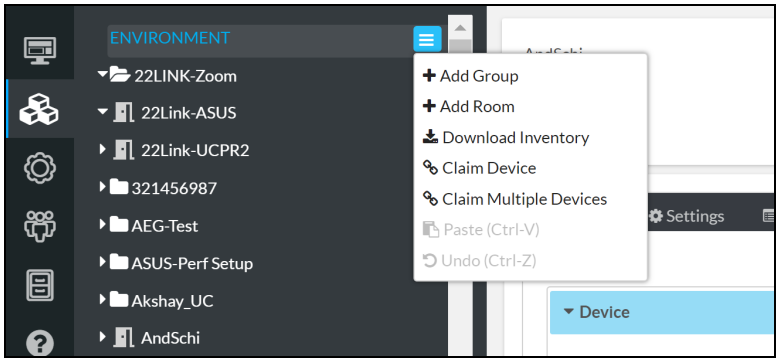
Download Inventory

An inventory report for the XiO Cloud account can be downloaded as a CSV file. The inventory report includes basic information about claimed devices and their location within the group tree.

To download the inventory report:

1. Select the **ENVIRONMENT** menu button to display a drop-down menu.

   Environment - Drop-Down Menu



2. Select **Download Inventory**. The inventory report is downloaded to your PC as a CSV file.

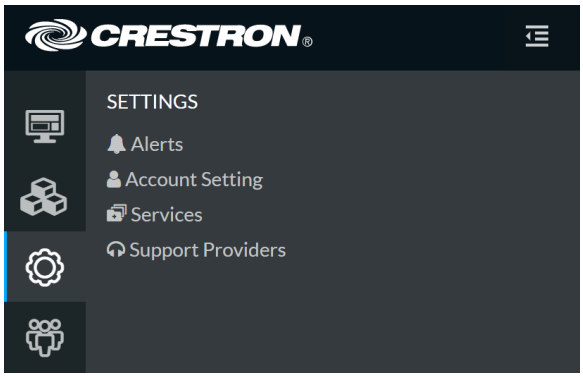
Licensed Features

For room-based accounts, licenses can be purchased to enable specific functionality within the XiO Cloud service. Licensed features may be added to rooms, removed from rooms, or transferred to different rooms.

> **NOTE:** Licensed features can be configured only by users with Global Administrator permissions.

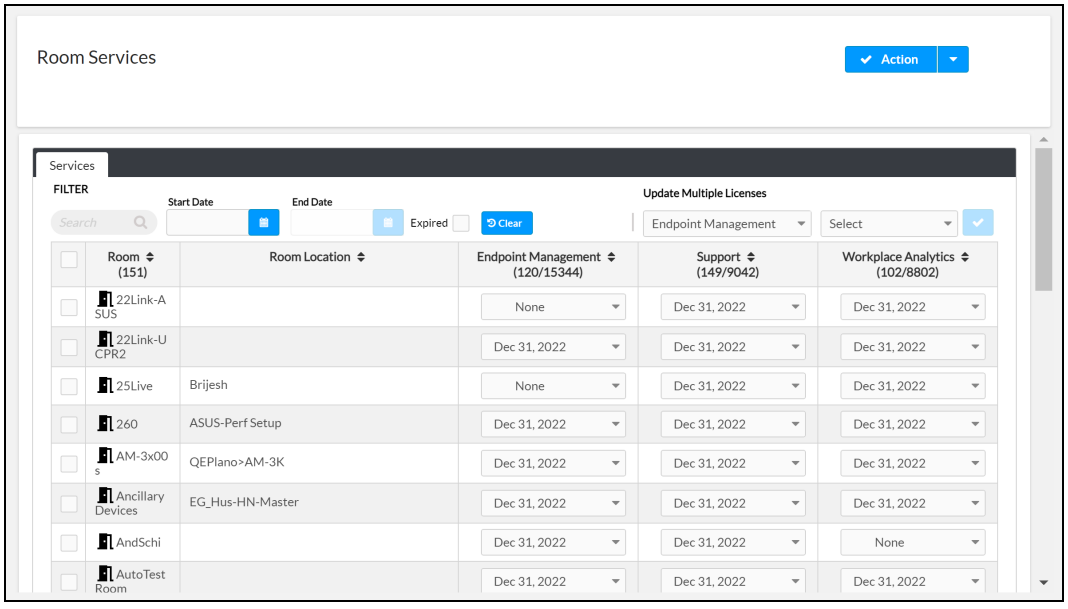
The **SETTINGS** menu for licensed features is located in the user management panel, which may be accessed by selecting the **Settings** button in the navigation menu.

Settings – Services Option



Select **Services** in the **SETTINGS** menu. A **Room Services** page is displayed to the right of the **SETTINGS** menu.

Room Services Page



Licensed features are organized by room name and displayed within a table. The total number of available licenses versus purchased licenses for each feature is displayed next to the license type in the table headings.

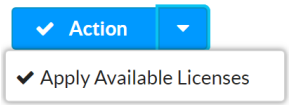
Drop-down menus for each license type are also displayed within each room row:

- If a license has not been applied to the room, the drop-down menu shows the **None** selection.
- If a license has been applied to the room, the drop-down menu shows the license expiration date. If multiple licenses are available, use the drop-down menu to select a different license.
- Select **Remove License** from the drop-down menu to remove a license from a room and add it back to your license pool.
- Enter text into the provided search field to display licenses that match the search term(s).

Apply Multiple Licenses

Licenses can be applied to multiple rooms at once using the **Apply Available Licenses** feature, which can be selected from the **Action** drop-down menu at the top right of the page.

Room Services Page - Apply Available Licenses



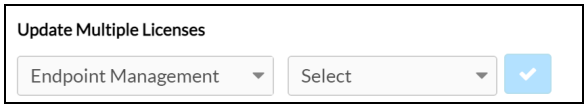
Selecting **Apply Available Licenses** will display a warning message showing the number of unlicensed rooms for each license type. Select **Apply** to apply the available licenses from your license pool to the unlicensed rooms.

> **NOTE:** If the number of available licenses is less than the number of unlicensed rooms for a particular license type, this information is indicated in the warning message. Licenses will be applied to only a number of rooms that match the license count.

Update Multiple Licenses

Licenses can be updated for multiple rooms at once using the **Update Multiple Licenses** feature, which is located at the top right of the license table.

Room Services Page - Update Multiple Licenses



1. Select the license type to be updated from the first drop-down menu under **Update Multiple Licenses**.
2. Select the license expiration date from the second drop-down menu under **Update Multiple Licenses**.
3. Check the check box next to any room that should be updated with the license type selected in step 1. Check the check box in the table header row to select or deselect all rooms that are visible on the page.

   > **NOTE:** If no check boxes are checked, the selected license type will be applied to all rooms in the account.

4. Select the check button under **Update Multiple Licenses**. A dialog box is displayed asking whether the licenses should be applied to the chosen room(s).

   > **NOTE:** If the number of available licenses is less than the number of selected rooms, a warning message with this information will be shown in the dialog box.

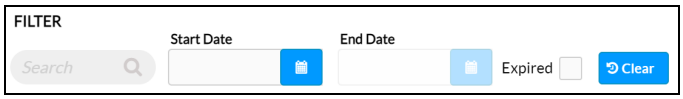
5. Select **Apply**. The license type selected in step 1 will be applied to all rooms selected in step 3.

   > **NOTE:** If a room already has a license of the selected type applied, this process will replace the existing license with the newly selected license.

Filter and Manage Licenses

Enter text into the global search field at the top left of the screen to search for and display rooms or locations that match the search term(s). Additionally, use the **Start Date** and **End Date** text boxes to filter licenses by the provided date range, and use the **Clear** button to clear the current filters. Check the **Expired** check box to display only licenses that have expired.

Room Services Page - Filter



If the room list spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page. Each license type also provides arrow controls in its heading row that sorts the available rooms by license expiration date.

The following information and controls are provided for each listed room:

- **Room**: The room name
- **Room Location**: The location of the room within the group tree hierarchy
- **Endpoint Management**: Indicates whether an Endpoint Management license has been assigned to the room

  > **NOTE:** An Endpoint Management license is required for the room before any other licensed functionality can be added.

- **Support**: Indicates whether a Support license has been assigned to the room. Removing a Support license adds it back to the customer's license pool.
- **Workplace Analytics**: Indicates whether a Workplace Analytics license has been assigned to the room. A Workplace Analytics license can be added only if one or more unused Workplace Analytics licenses are available in a customer's license pool. Removing a Workplace Analytics license adds it back to the customer's license pool.

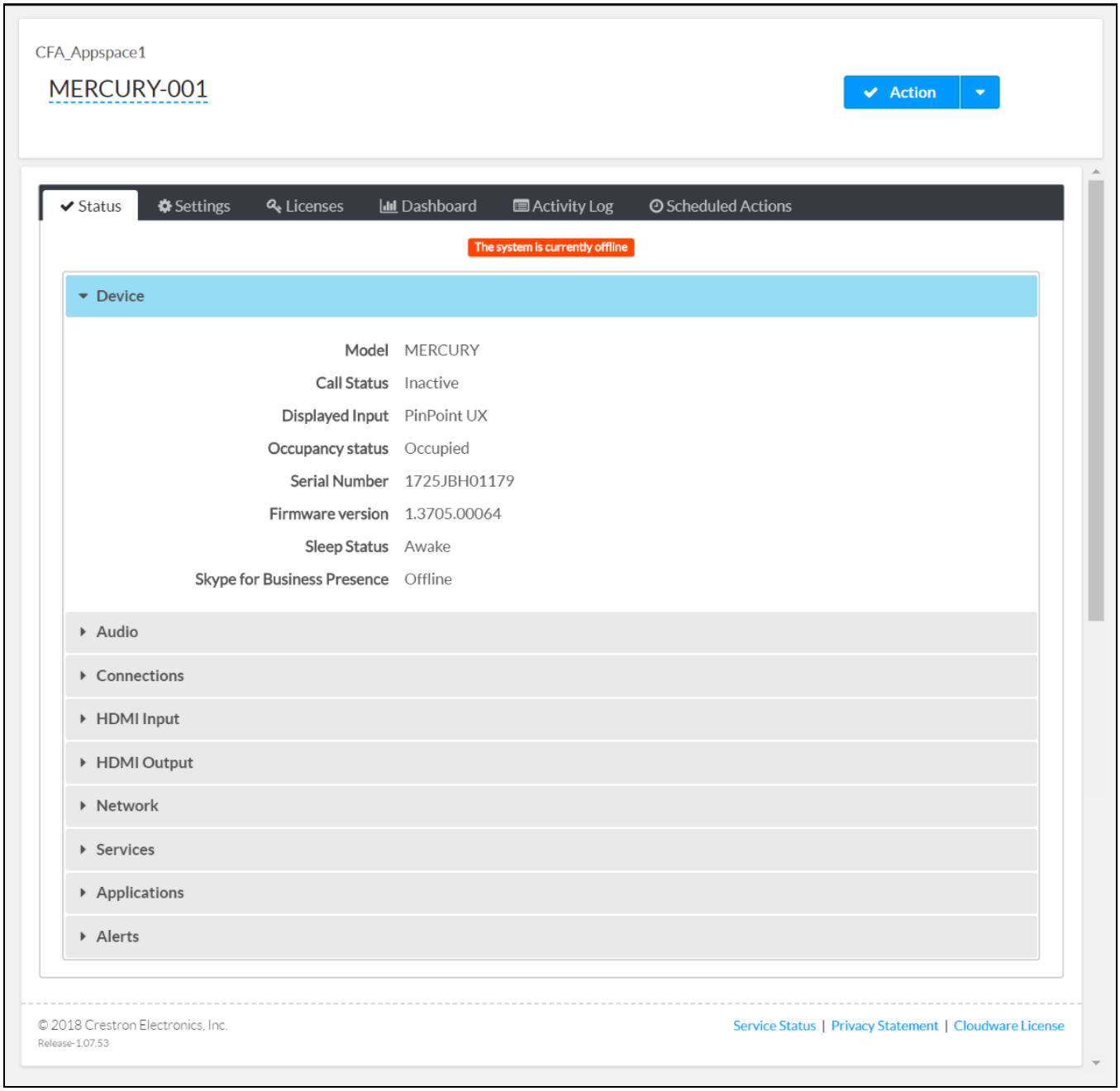
Manage Devices

Devices may be managed via the XiO Cloud service after they have been claimed by the service and added into a licensed room or group. Devices may be managed individually or as a group.

Select a device from the group tree to view and configure the device status, settings, and licenses. The configuration page for the device also provide options for viewing status dashboards and activity logs, and automated actions may be scheduled for the device.

> **NOTE:** Not all device management options are available for some devices.

Device Configuration Page



Use the following procedures to manage devices via the XiO Cloud service.

Rename a Device

Each device in the XiO Cloud service has a unique device name, which allows the device to be identified and organized within the service. The device name is used only by the XiO Cloud service.

By default, the device name is set as the host name of the device. However, the device may be renamed as needed.

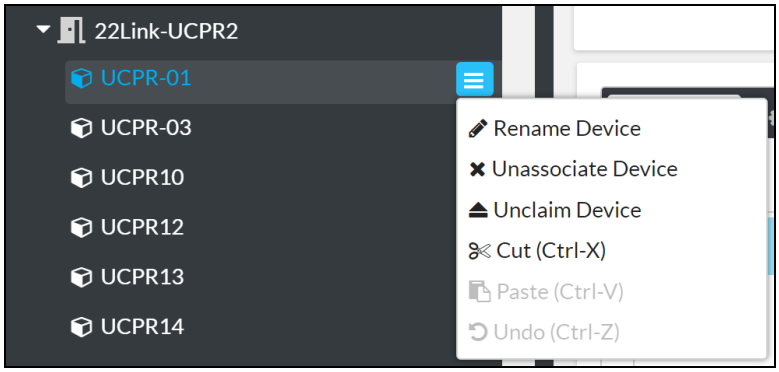
NOTE: Changing the device name has no impact on the host name or other identifying features on the hardware.

Two methods may be used to rename a device: The device name may be changed in the group tree or from its configuration page.

To change the device name in the group tree:

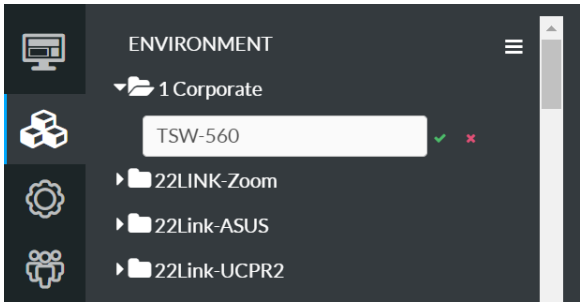
1. Position the cursor over the device in the **ENVIRONMENT** menu to reveal its context menu.
2. Select the context menu button of the device to display a drop-down menu.

   Device - Drop-Down Menu



3. Select **Rename Device**. The device name becomes an editable text box.

   Device - Edit Device Name

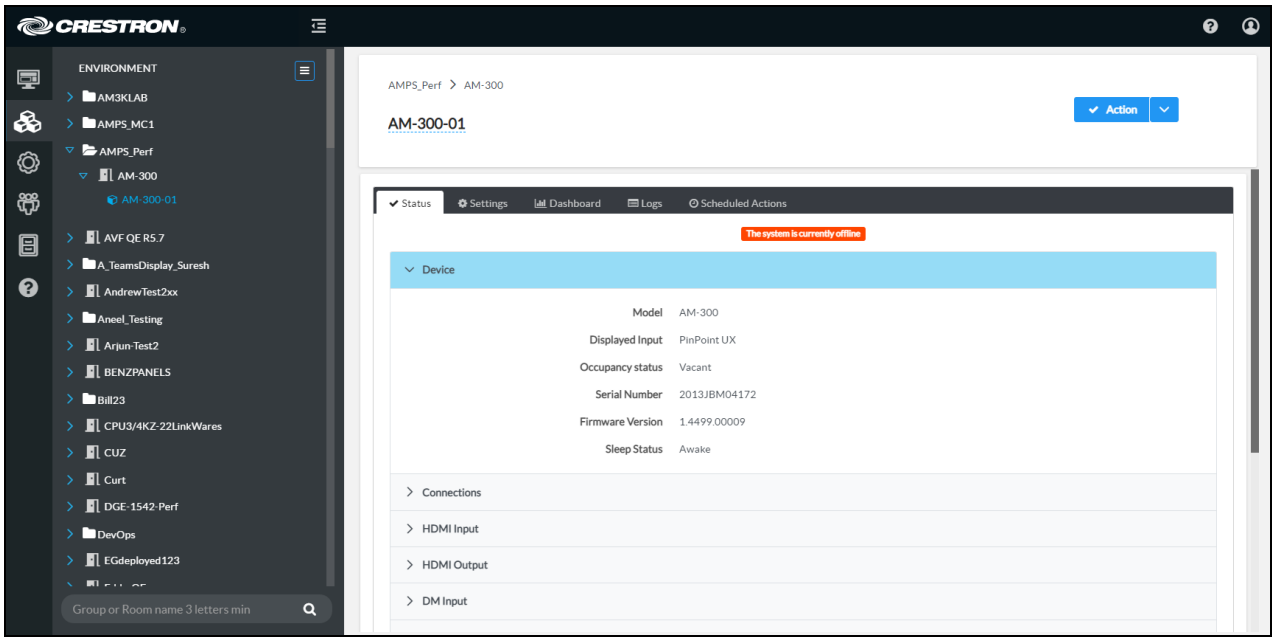


4. Enter a new device name in the text box. A device name must be at least three characters long.
5. Select the green check icon or click **Enter** to save the device name. Select the red **x** icon to discard the changes.

To change the device name from the configuration page:

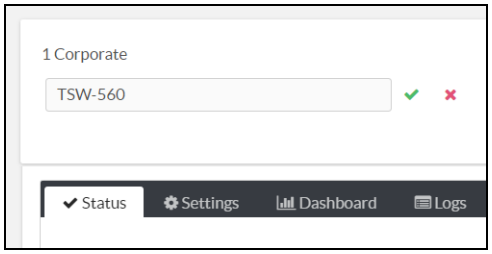
1. Select the device from the group tree to display its configuration page.

   Device Configuration Page



2. Click on the device name on the top left of the configuration page. The device name becomes an editable text box.

   Device Configuration Page - Edit Device Name



3. Enter a new device name in the text box. A device name must be at least three characters long.
4. Select the green check icon ✔ or click **Enter** to save the device name. Select the red **x** icon ✖ to discard the changes.

View Device Status

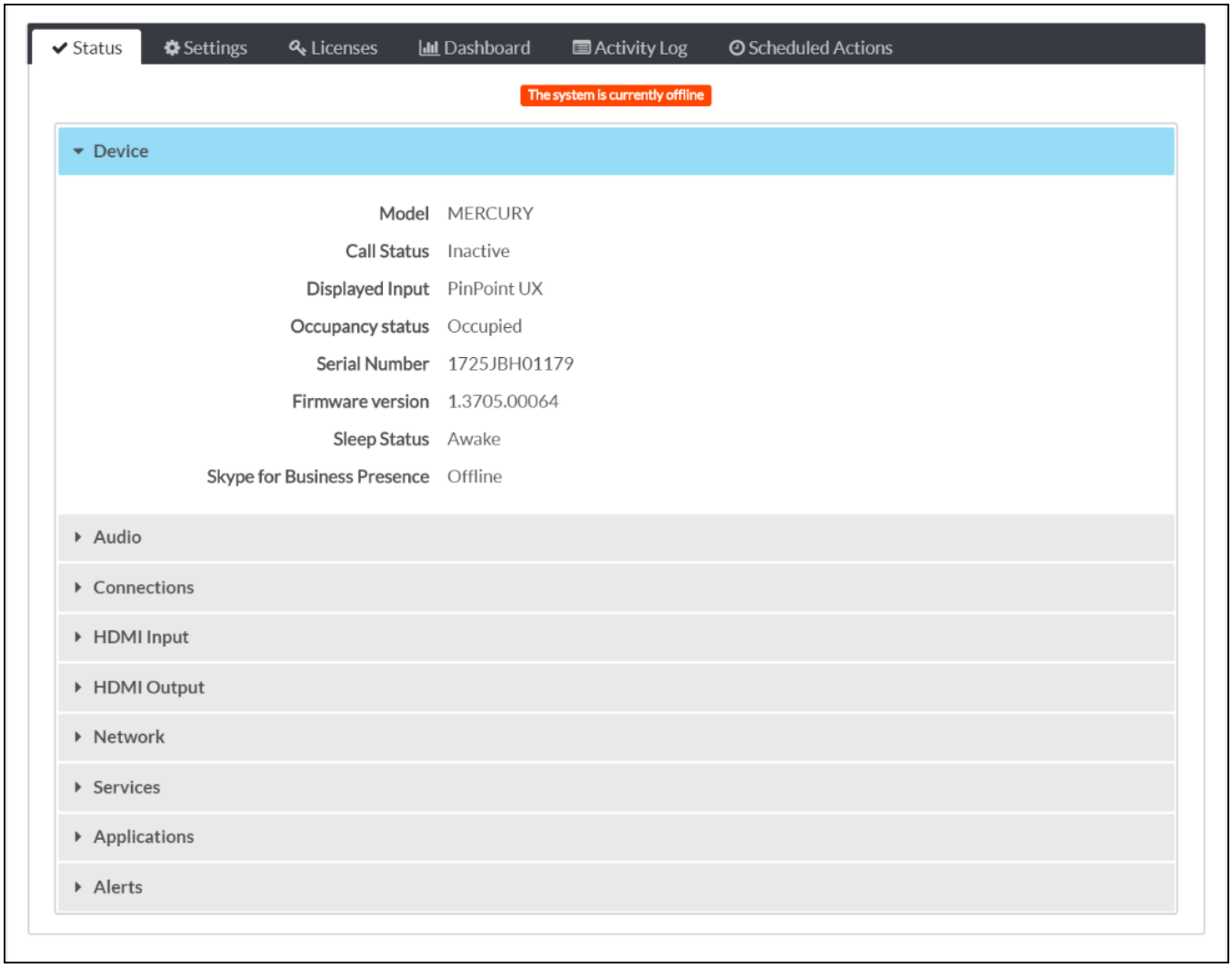
The device status may be viewed for individual devices or for multiple devices within the same group or room.

View Status for a Single Device

To view the status for a single device, select a device from the group tree to display its configuration page. The **Status** tab is open by default.

> **NOTE:** A device must be added into a licensed room or group before its configuration page can be viewed.

Device Configuration Page - Status Tab (Devices)



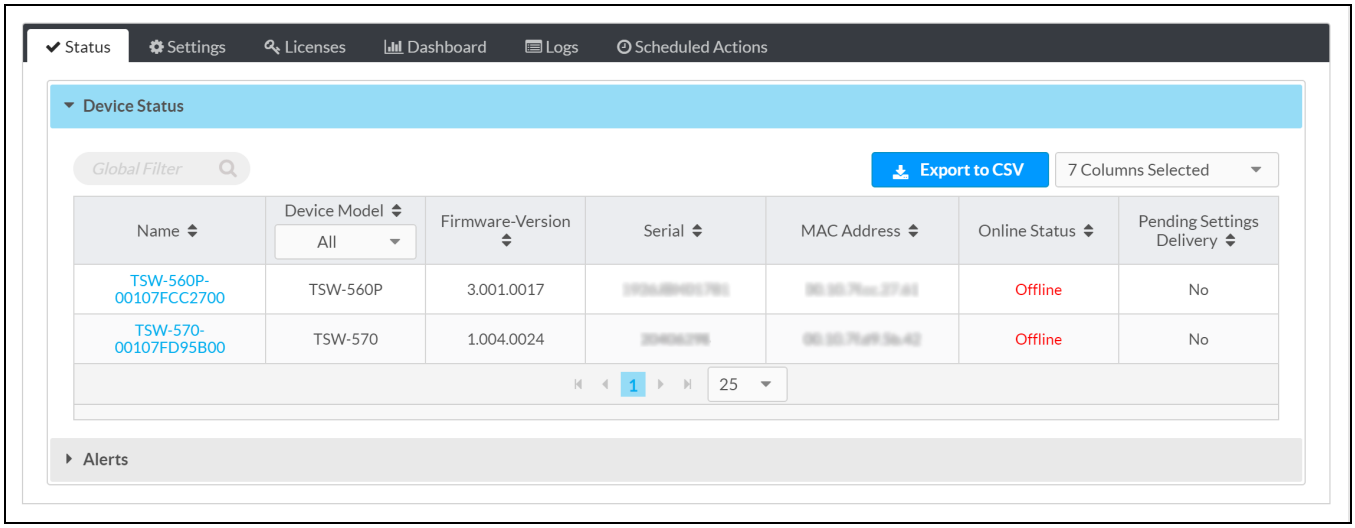
The **Status** tab provides expandable "accordions" that display static and changing device attributes. Dynamic attributes, such as volume, change in the appropriate status accordion within seconds of being changed on the device.

Click on an accordion name to expand it. If the accordion is expanded, click the accordion name again to collapse it. The accordions provided vary depending on the device.

View Status for a Group of Devices

To view the status for multiple devices within the same group or room, select a group or room from the group tree to display its configuration page. The **Status** tab is selected by default.

Group Configuration Page - Status Tab (Device Status)



The **Status** section lists all of the devices within the group or room and any subgroups in table format. The **Device Status** table provides a subset of important status information for the devices within the group and its subgroups.

> **NOTE:** Selecting the **Unassociated Devices** group displays the device status for all unassociated devices in the account. Only the **Name**, **Device Model**, **Serial**, and **MAC Address** status fields are provided for unassociated devices. An unassociated device must be moved to a licensed room or group before its individual status can be viewed.

The following information is displayed for each device by default:

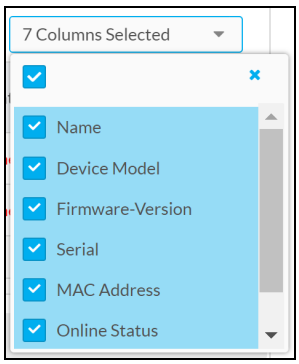
- The name and model
- The loaded firmware version, including whether any firmware updates are pending
- The serial number and MAC address
- The online status, which indicates whether the device is connected to the XiO Cloud service
- The pending settings delivery status, which indicates whether any device settings changes are pending

  > **NOTE:** If the **Pending Settings Delivery** status is **Yes**, device settings have been saved in the portal but have not yet been applied to the device (such as in instances where the device is unplugged).

The data that is displayed for each device in a group or room can be customized by filtering the table columns for that group or room. By default, 7 columns are displayed that contain the data described in the list above. Up to 15 columns can be displayed by selecting or deselecting a column in the provided drop-down menu.

To select or deselect table columns for a group or room, expand the drop-down menu at the top right of the status table. Then, select or deselect an item in the menu to display or hide that column from the status table, respectively. Use the check box at the top of the menu to select or deselect all columns.

Column Selection Drop-Down Menu



> **NOTE:** Changes made to the status table are made only on a per-group or room basis. The status table will reset to its default settings after logging out of the XiO Cloud service.

The device status table for a group or room can be downloaded as a CSV file by clicking the **Export to CSV** button at the top right of the status table. The CSV file will include all table columns that have been selected as described above.

Enter text into the **Global Filter** text box to search for and display devices that match the search terms.

If the device lists spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page. Additionally, the number of devices displayed on each page may be set to 5, 10, 20, or 25 devices.

Configure Device Settings

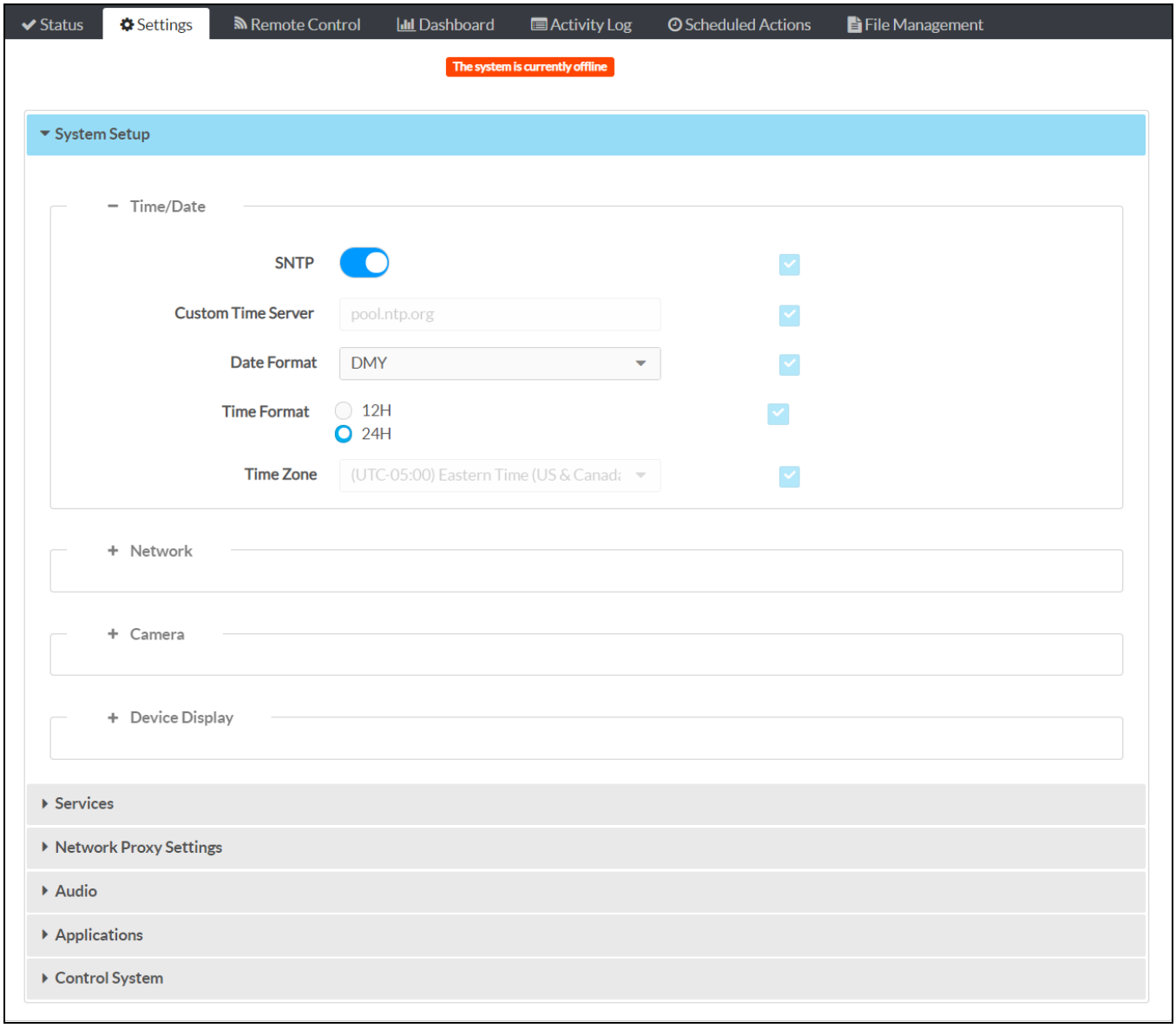
Device settings may be configured for individual devices or for multiple devices within the same group or room.

Configure Settings for a Single Device

To configure the settings for a single device, select a device from the group tree to display its configuration page, and then click the **Settings** tab.

> **NOTE:** A device must be added into a licensed room or group before its configuration page can be viewed.

Device Configuration Page - Settings Tab (System Setup)



The **Settings** tab provides selections for configuring various device settings. When a device is first claimed and added to a group, the current device settings are prepopulated in the XiO Cloud service.

To change a device setting:

1. Locate the device setting in the appropriate **Settings** accordion.

   The accordions provided vary depending on the device. Some accordions include subsections that may be expanded by clicking the plus (**+**) button next to the subsection name. If the subsection is expanded, click the minus (**-**) button to collapse the subsection.

2. Fill the check box next to a setting to enable it in XiO Cloud.

   If a setting is not enabled in XiO Cloud, it will not be sent to the device and can be managed by processes outside of XiO Cloud (such as joins).

> **NOTE:** If a setting is enabled in XiO Cloud, it will show what is currently saved in the portal. If a setting is not enabled in XiO Cloud, it will show what is currently set on the device.

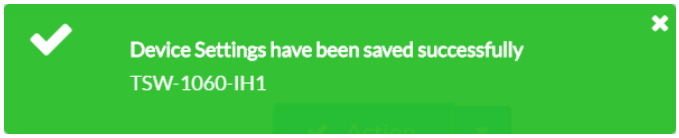
For more information on configuring specific settings for a device, refer to its documentation at www.crestron.com/manuals.

Once a device setting has been changed, the **Actions** button on the top right of the configuration page changes to a **Save Changes** button. Select **Save Changes** to push the updated setting(s) to the device.

Save Changes Button

After the settings have been pushed from the cloud to the device successfully, a notification is displayed confirming the success.

Device Settings Saved Successfully Message



If the device has not yet received the settings, orange "Delivery to Device Pending" text is shown next to the changed settings until the device receives the settings.

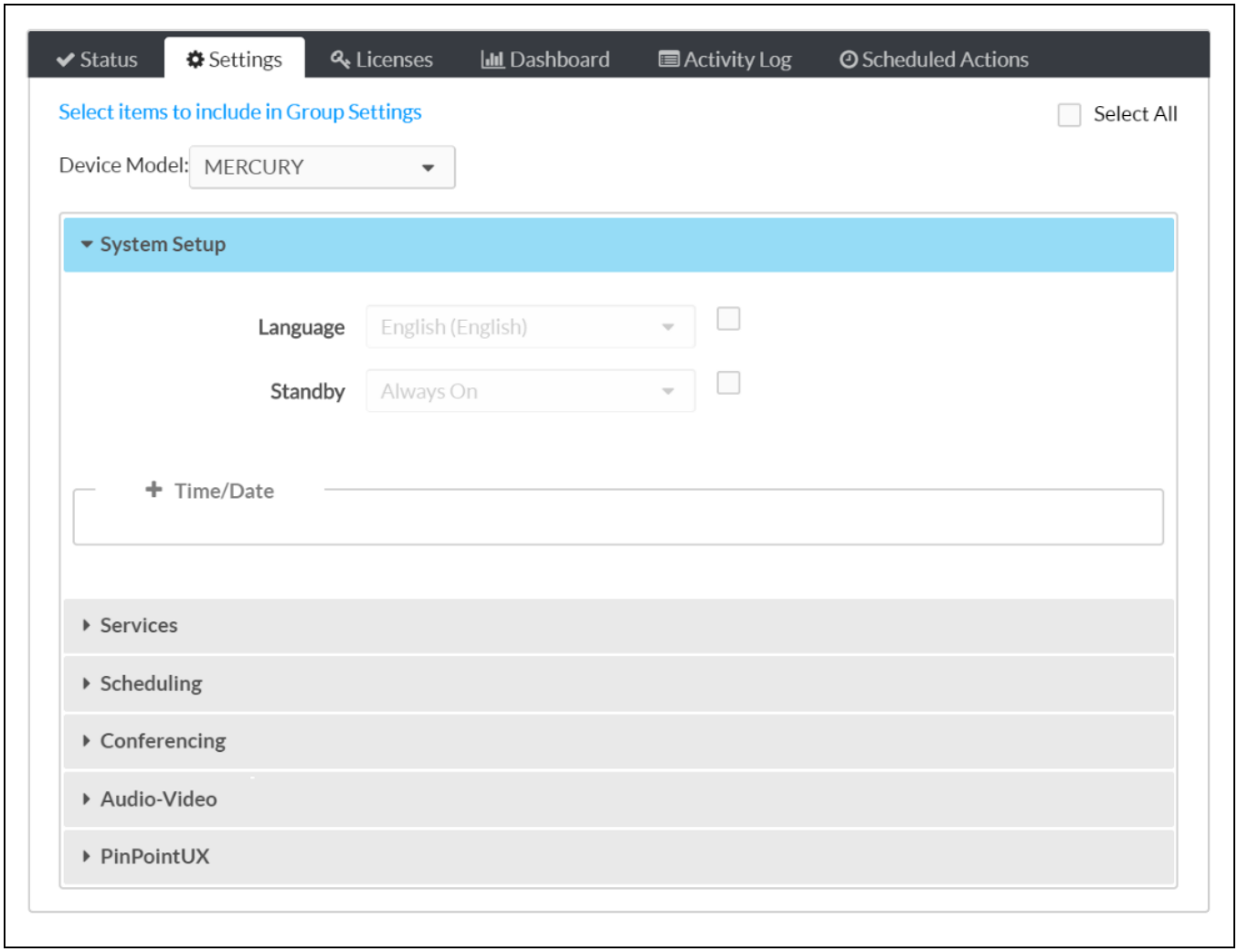
> NOTES:
>
> - Depending on the settings that are changed, the device may restart a few minutes after **Save Changes** is clicked.
> - Each setting checks for valid input. If an invalid input is entered, red text explaining the error is displayed next to the setting, and a red underline is shown under the setting. Changes cannot be saved until the error is resolved.
> - A setting entered at the group level cannot be edited on the individual device page. Each device in a group inherits any group-level settings.

To undo changes before saving the settings to the device, select the drop-down arrow next to the **Action** (or **Save Changes**) button, and then select **Revert**. The device settings are returned to their last saved state.

Configure Settings for a Group of Devices

To configure the settings for multiple devices within the same group or room, select a group or room from the group tree to display its configuration page, and then click the **Settings** tab.

Group Configuration Page - Settings Tab (System Setup)



Configuring device settings (such as language or date and time) at the group level pushes the settings to every device in that group or room or its subgroups. Device settings configured at the group level overwrite the same settings on the individual device pages.

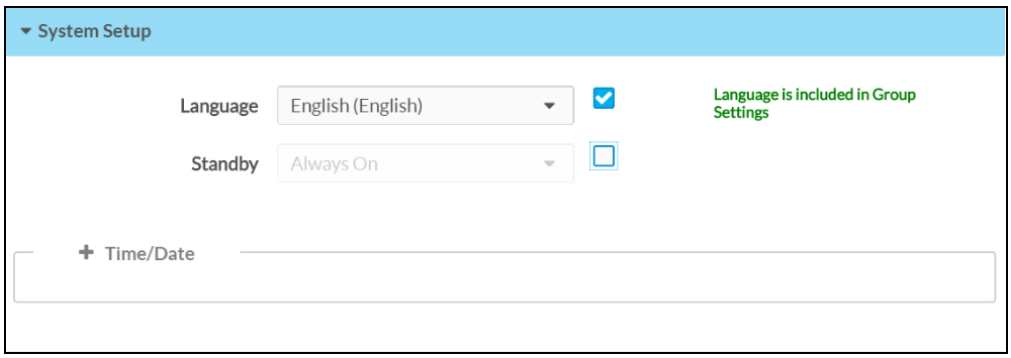
> **NOTE:** No device settings can be configured for devices within the **Unassociated Devices** group. An unassociated device must be moved to a licensed room or group before its settings can be configured.

Each group-level setting in the **Settings** section provides a check box next to the setting:

- Click an empty check box to activate the associated setting at the group level. Green text is displayed next to the setting to indicate that the setting is now included in the group settings.
- Click a filled check box to disable the associated setting at the group level.

By default, all group-level settings are disabled.

System Setup Accordion (Language Setting Enabled)



Group-level settings in the **Settings** section are organized by device type. To configure the group-level settings for a device type:

1. Select the desired device type from the **Device Model** drop-down menu on the top left of the **Settings** section.
2. Navigate through the accordions provided for each device to locate the desired group-level settings.
3. Select the applicable check box(es) next to the group-level settings to activate the associated setting at the group level.

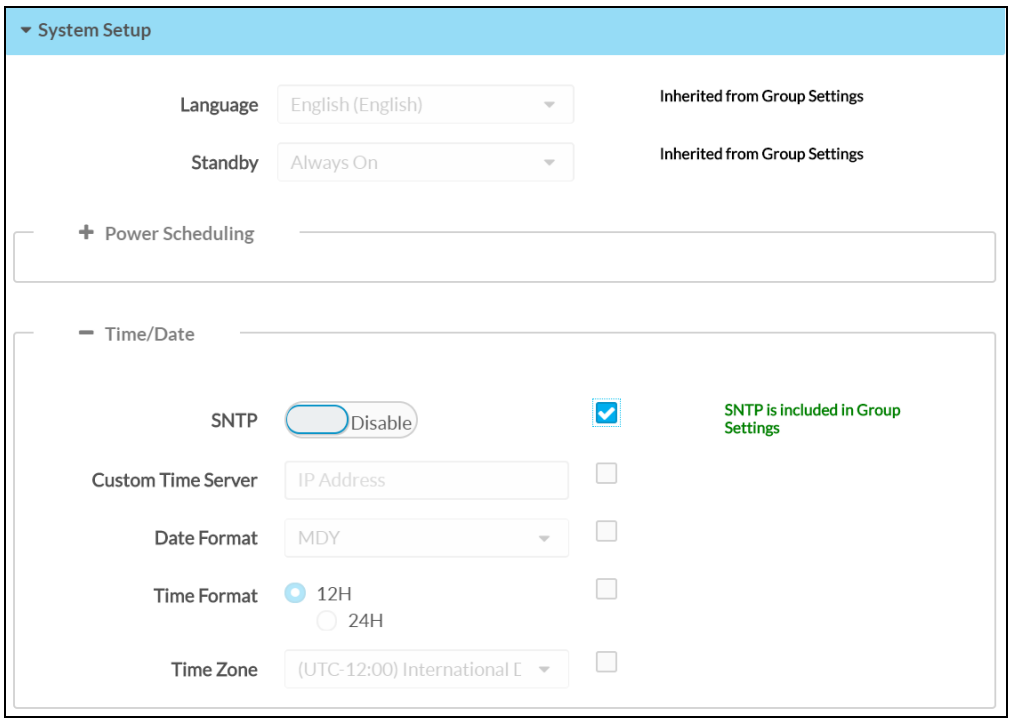
Once a group setting has been changed, the **Actions** button on the top right of the configuration page changes to a **Save Changes** button. Select **Save Changes** to save the group-level settings.

Save Changes Button

Additional settings may be configured for subgroups after changes are made at the parent group level.

Only settings that have not been configured for the parent group may be activated. Parent group settings are disabled because they are inherited by the subgroup. An "Inherited from Group Settings" text is displayed next to any subgroup settings that may not be activated.

System Setup Accordion (Subgroup)



Subgroup-level settings in the **Settings** section are organized by device type. To configure the subgroup-level settings for a device type:

1. Select the desired device type from the **Device Model** drop-down menu on the top left of the Settings section.
2. Navigate through the accordions provided for each device to locate the desired subgroup-level settings.
3. Select the applicable check box(es) next to the subgroup-level settings to activate the associated setting at the subgroup level.

Once a subgroup setting has been changed, the **Actions** button on the top right of the configuration page changes to a **Save Changes** button. Select **Save Changes** to save the subgroup-level settings.

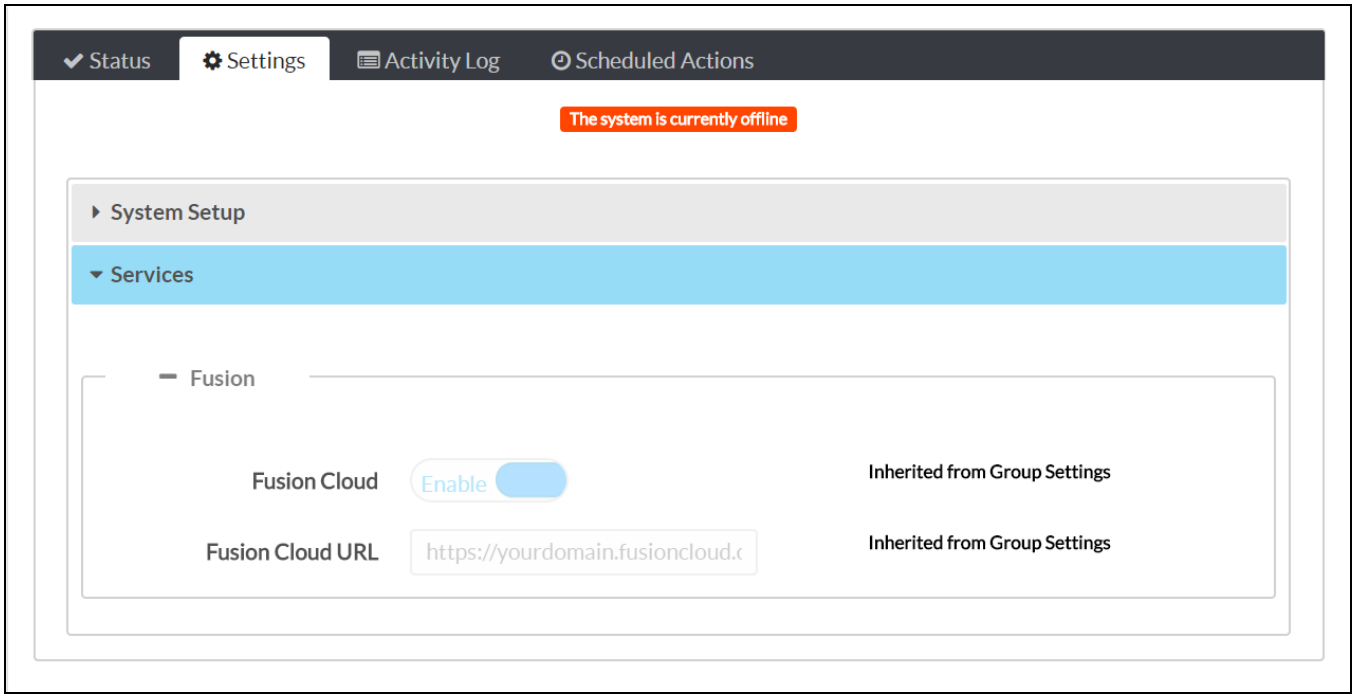
Save Changes Button

Any remaining settings may be configured for individual devices after changes are made at the parent group and subgroup level.

Only settings that have not been configured for the parent group or subgroup may be configured. Parent group and subgroup settings are disabled because they are inherited by the device. An "Inherited from Group Settings" text is displayed next to any device settings that may not be activated.

NOTE: Unchecking the check box for a group setting does not change the setting for an individual device, but makes it possible to change the setting on the individual device configuration page.

Device Status Page Showing "Inherited from Group Settings" Text



NOTE: Adding a device to a group or room automatically pushes down any of the settings from the group to the device.

Prevent Unnecessary Restarts

Under rare circumstances, applying certain settings to a device may cause unexpected device behavior, such as repeated restarting, to occur.

If the XiO Cloud service detects a device in this state:

- The XiO Cloud service stops sending the setting that is causing the issue to the device, which prevents restarts from occurring.
- A message is displayed on the device settings page stating that undesired behavior was detected and that settings are no longer being sent to the device.
- An alert message is placed next to the setting that is causing the issue.

To resume sending settings to the device, update the setting that is causing the issue, and then select **Save Changes** from the **Action** menu. The XiO Cloud service resumes sending settings to the device once it verifies that the problem setting is fixed.

Manage Licenses

Certain Crestron devices use licenses to enable extra functionality. These licenses may be managed through the XiO Cloud service. Licenses may be added to devices, removed from devices, or transferred to different devices.

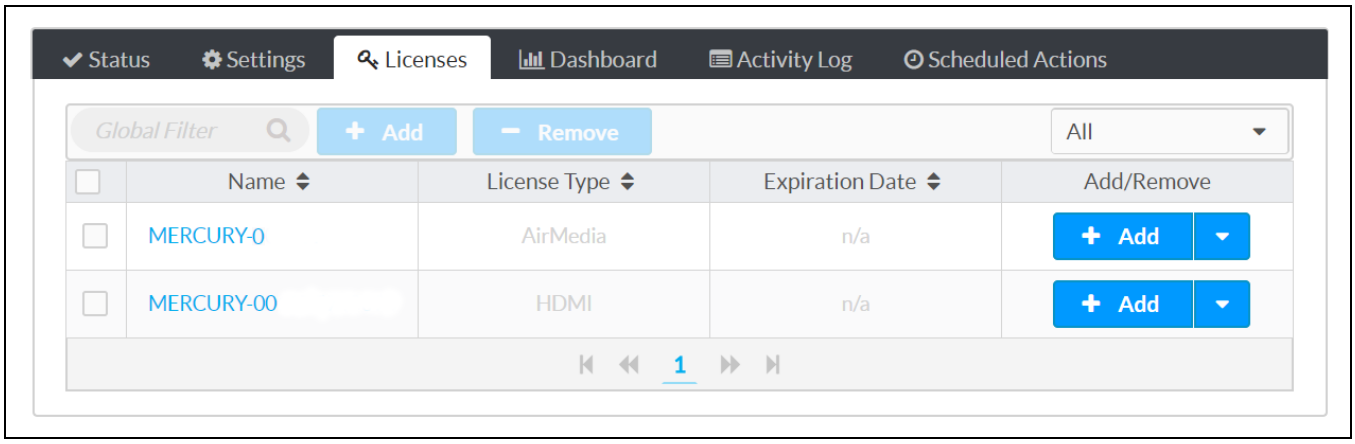
The XiO Cloud service maintains a record of all of the licenses that have been purchased for a customer's account, including licenses that were included with purchased devices.

> **NOTE:** As of XiO Cloud release 1.36, managing device licenses (such as VC-4 server licenses) within XiO Cloud no longer requires purchase of any XiO Cloud room-based licenses.

Manage Licenses for a Single Device

To manage the licenses for a single device, select a device from the group tree to display its configuration page, and then click the **Licenses** tab.

Device Configuration Page - Licenses Tab



The **Licenses** section lists all of the licenses that are available for the device in table format. The **Licenses** table provides the following information for each license:

- The device name
- The license type
- The expiration date
- Controls to add or remove the license

Enter text in to the **Global Filter** text box to search for and display licenses that match the search term (s).

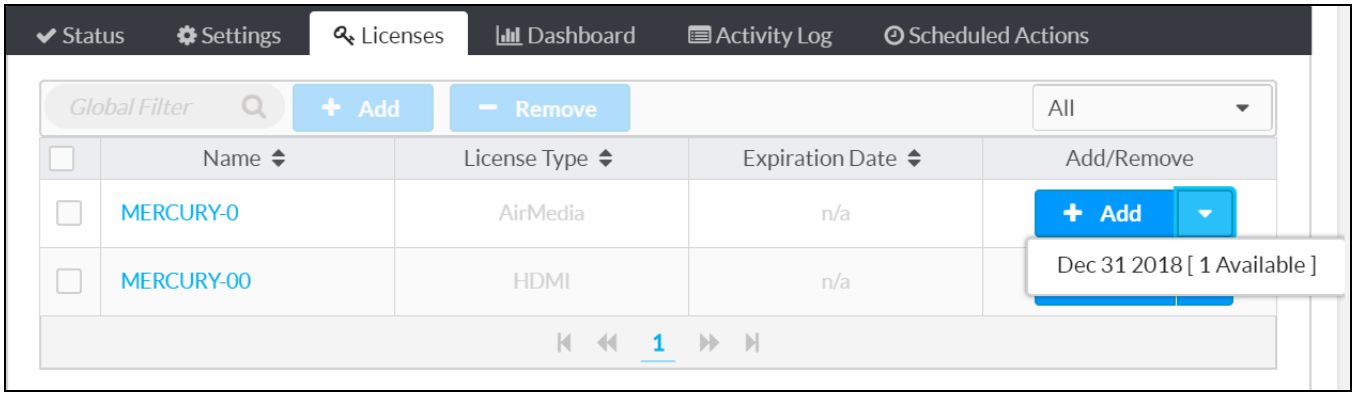
If the license list spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page.

To add a license for a feature that has not yet been licensed for a device, select**Add** in the **Add/Remove** column for the device.

NOTE: If multiple licenses are available for the same feature, the license that expires first is added first automatically. For example, if a 1-year AirMedia® presentation system license and a 2-year AirMedia license are available, the 1-year license is added first.

If a license other than the license with the earliest expiration date is desired, select the arrow next to the **Add** button to choose from the available expiration dates in the account.

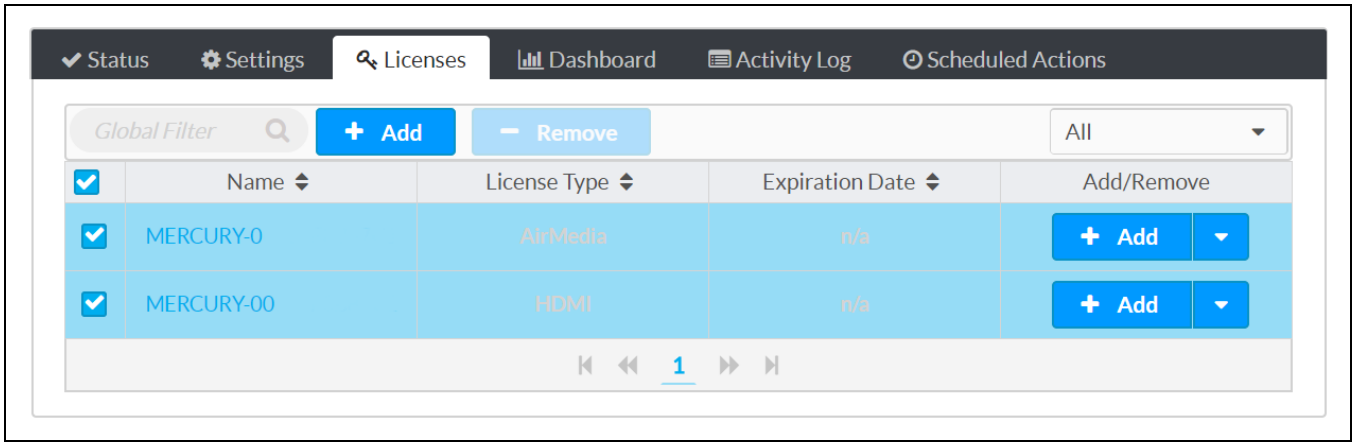
Device Configuration Page - Licenses Tab (Expiration Date Selection)



To add licenses for multiple features at the same time, check the boxes next to the license features, and then select **Add** at the top of the screen. As with adding licenses individually, if multiple licenses are available for the same feature, the license that expires first is added first automatically.

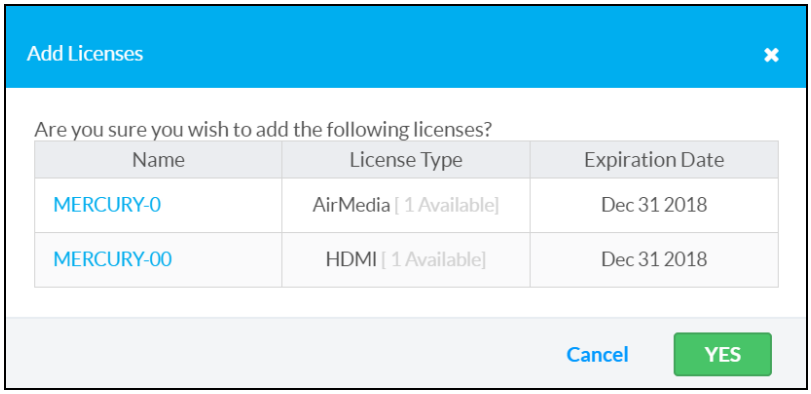
Select the check box in the table heading row to select or deselect all available licenses.

Device Configuration Page - Licenses Tab (Add Multiple Licenses)



After adding a license using either of these methods, a confirmation dialog box is displayed. Select **YES** to apply the license.

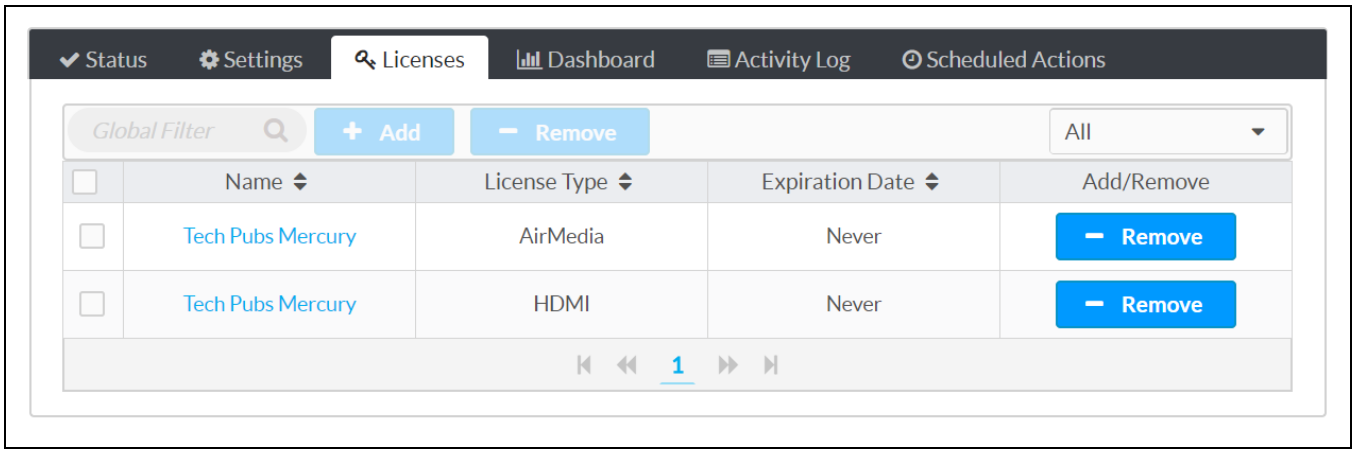
Add Licenses Confirmation Dialog Box



To remove a license for a feature that has not yet been licensed for a device, select **Remove** in the **Add/Remove** column for the device.

Removing a license returns it to the customer's license pool, allowing the same license to be applied to a different device.

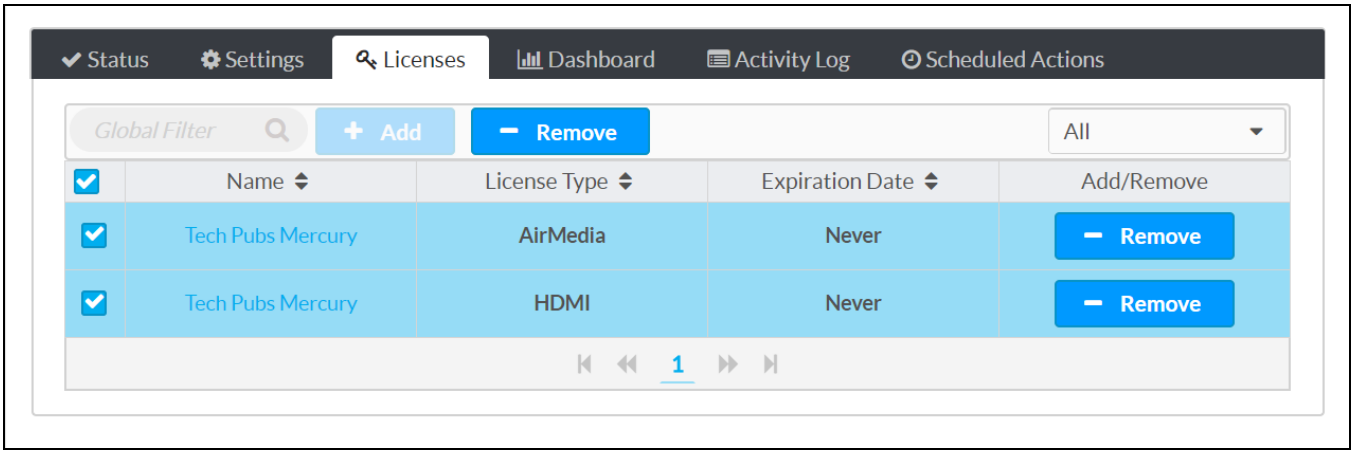
Device Configuration Page - Licenses Tab (Remove Button)



To remove licenses for multiple features at the same time, check the boxes next to the license features, and then select **Remove** at the top of the screen.

Select the check box in the table heading row to select or deselect all available licenses.

Device Configuration Page - Licenses Tab (Remove Multiple Licenses)

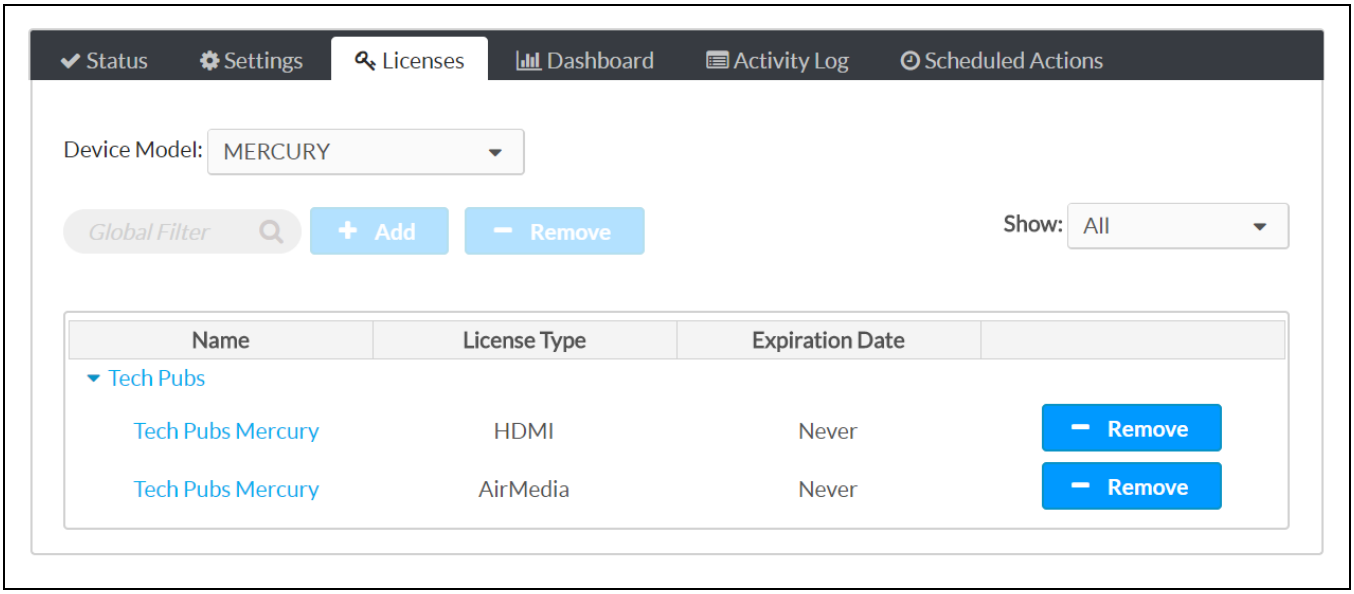


NOTE: Adding or removing licenses may cause a device to reboot. Behavior may differ between device models due to firmware differences.

Manage Licenses for a Group or Room

To manage the licenses for multiple devices within the same group or room, select a group or room from the group tree to display its configuration page, and then click the **Licenses** tab.

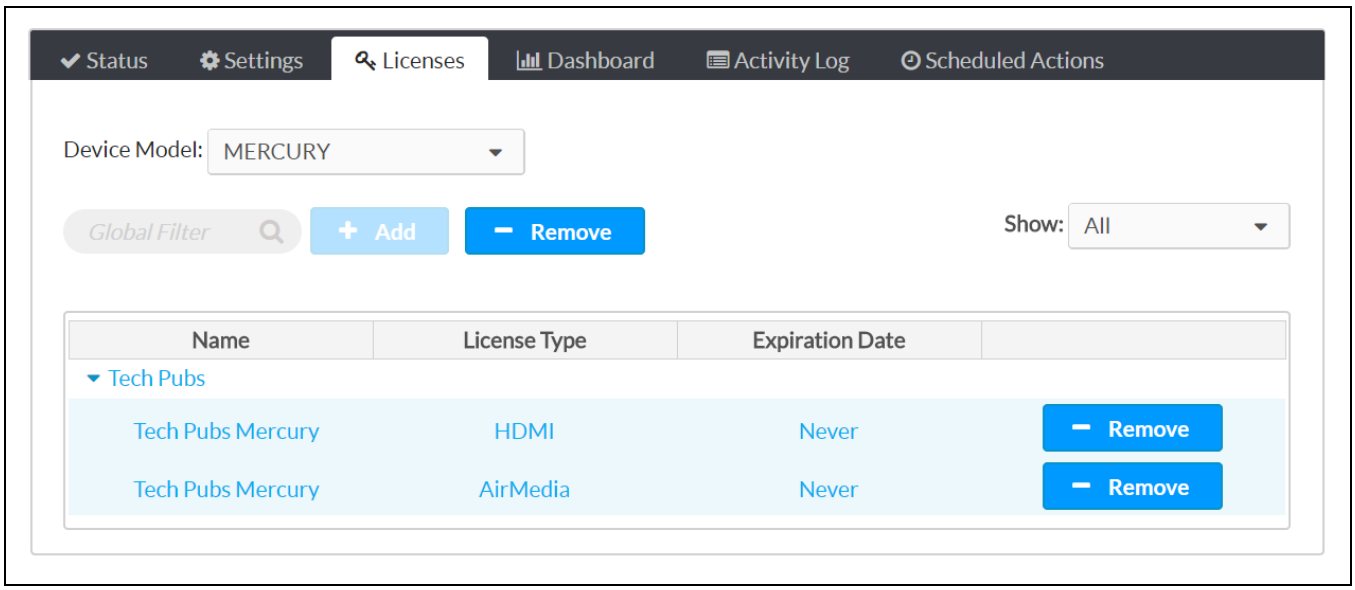
Group Configuration Page - Licenses Tab



The **Licenses** section of the group or room configuration page provides the same information and controls as the **Licenses** section of the device configuration page; however, the licenses for all the devices in the group or room and its subgroups are displayed.

To add or remove the licenses for multiple features or devices at once, press **Ctrl** and click on the appropriate features, and then use the bulk **Add** and **Remove** buttons at the top of the page to add or remove the licenses, respectively.

Group Configuration Page - Licenses Tab (Select Multiple Licenses)



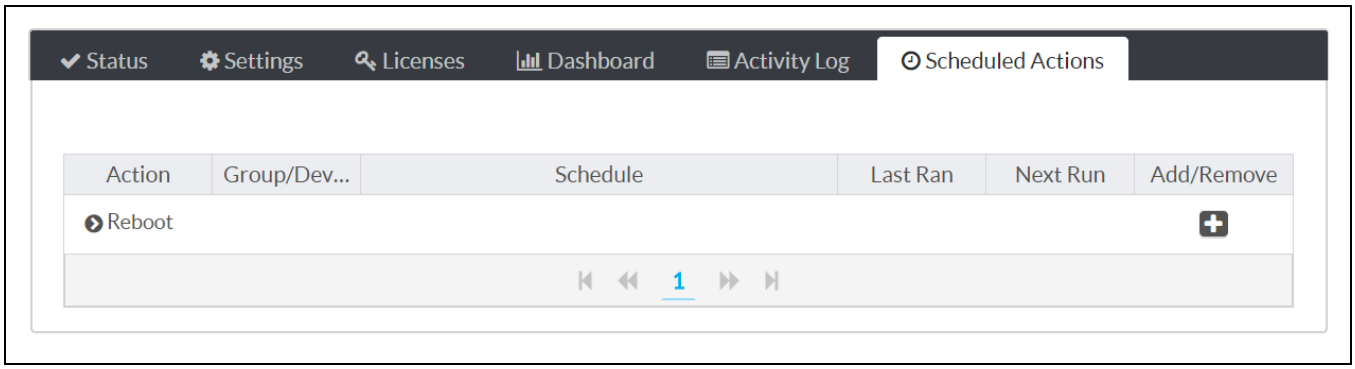
Scheduled Actions

Scheduled actions allow device functions to be automated from the cloud.

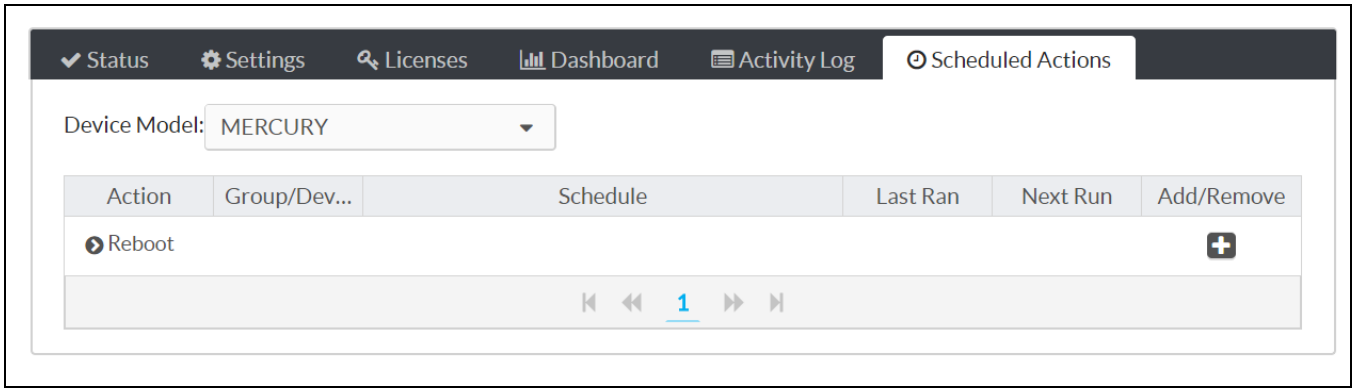
The available actions for each device vary, although all devices support a scheduled restart. Actions may be scheduled to occur once or in a recurring pattern.

Scheduled actions are accessible from the **Scheduled Actions** tab for an individual device or for a group.

Device Configuration Page - Scheduled Actions



Group Configuration Page - Scheduled Actions

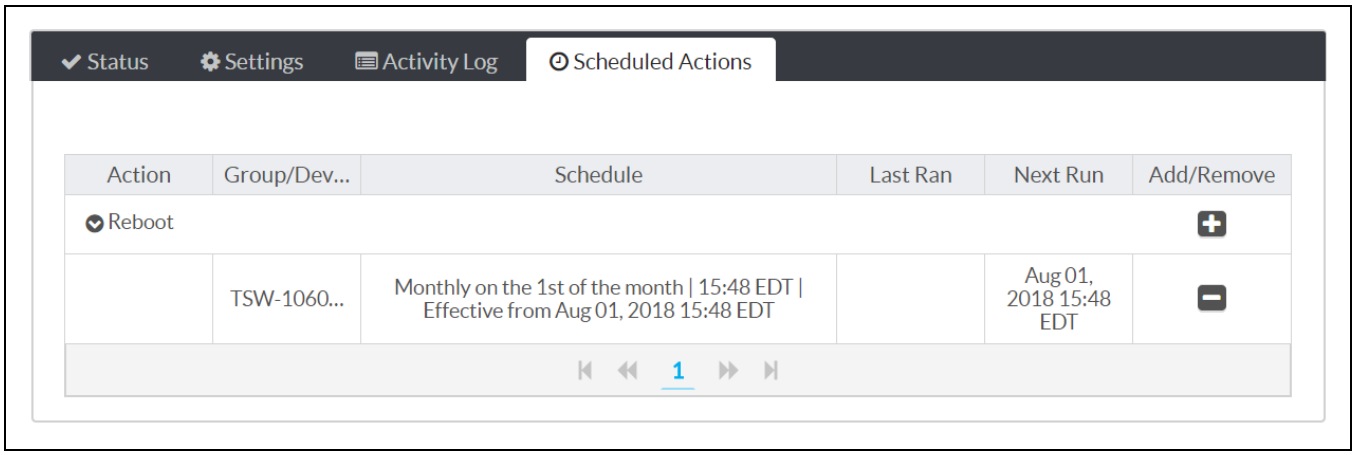


The **Scheduled Actions** table lists the actions that may be scheduled for the selected device or device model.

When scheduling actions for a group or room, select the desired device type from the **Device Model** drop-down menu on the top left of the Settings section. An action created in the group or room configuration page will be applied to all devices that share the selected model.

Click the arrow button next to an action to view more details about the action.

Schedule Actions Table



The following information is displayed for each device:

- The name of the action
- The device model or device model group
- The schedule that has been set for the action
- The date and time when the action was last ran

> **NOTE:** If the action was triggered but the device was unable to complete it for any reason, such as being offline at the scheduled date and time, an error icon is shown next to the **Last Ran** date and time to indicate this error.

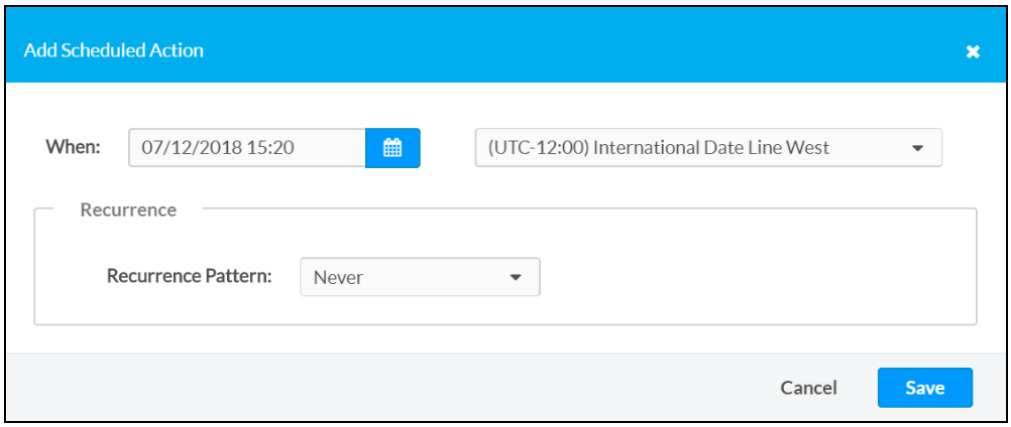
- The date and time when the action is scheduled to run again
- Controls for adding and removing an action

Create a Scheduled Action

To schedule an action:

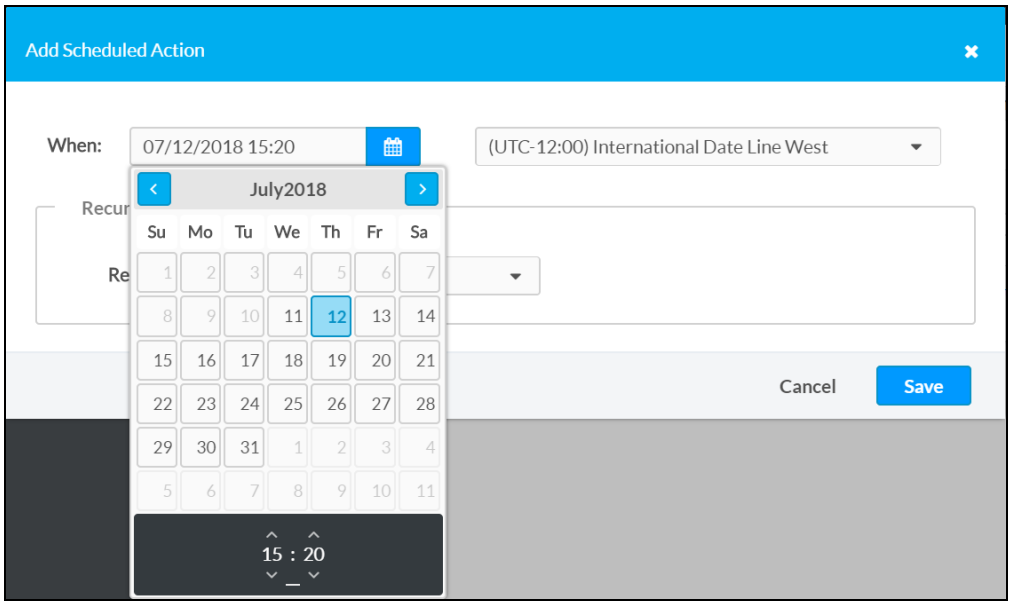
1. Click the plus (**+**) button under **Add/Remove**. An **Add Scheduled Action** dialog box is displayed.

   Add Scheduled Action Dialog Box



2. Click inside the **When** field to open the calendar and time settings.
3. Select the date and time for the action to occur. If the **Recurrence Pattern** is set to **Never**, the action will occur only once at the selected date and time.

   Add Scheduled Action Dialog Box (Calendar and Time Settings)

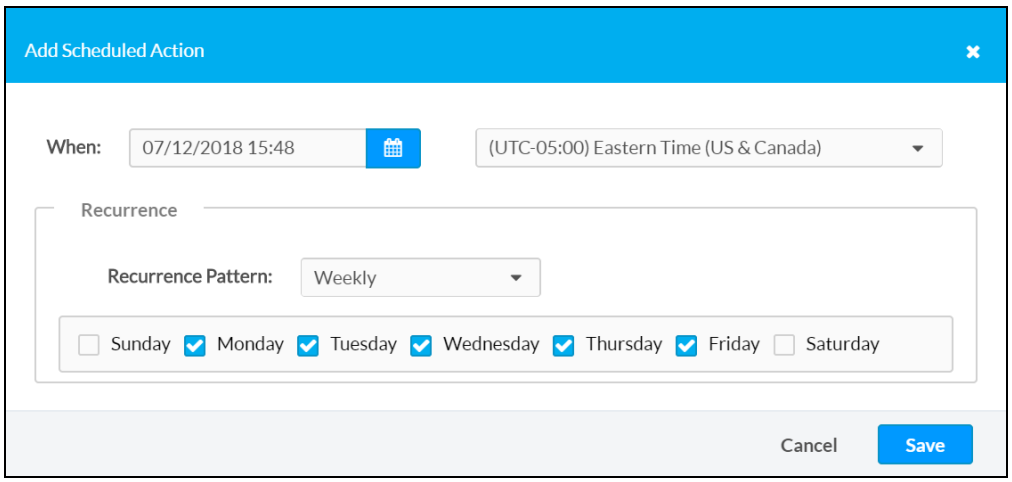


4. Select a time zone from the drop-down menu to the right of the **When** field.

> **NOTE:** All devices in the same time zone that share a scheduled action perform that action at the same time if the action is set at a group level. If there are devices in different time zones, their actions may be scheduled individually.

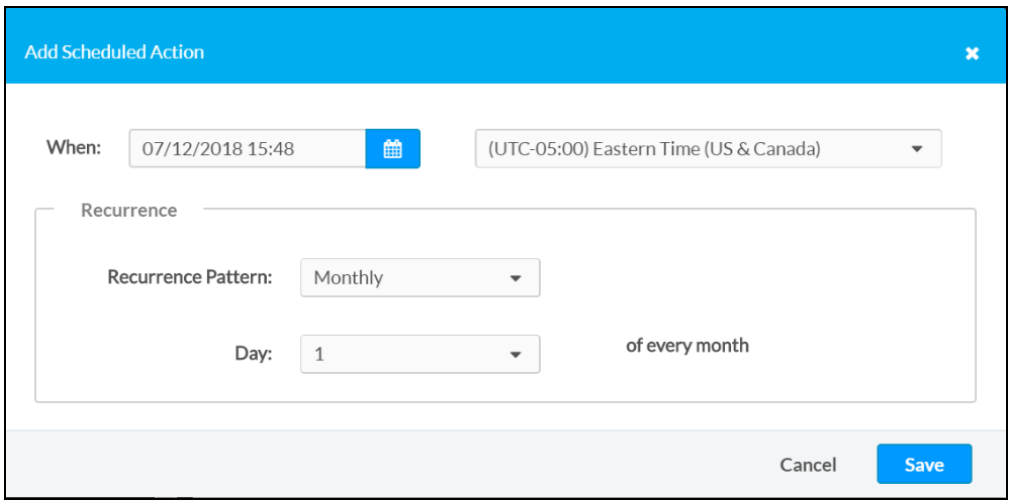
5. If applicable, use the **Recurrence Pattern** drop-down menu to select if and when the action should repeat. The following options are provided:
   a. **Never**: The action will occur only once on the date and time that is set for the **When** field.
   b. **Daily**: The action will occur every day starting on the date and time that is set for the **When** field.
   c. **Weekly**: The action will occur every week on the days selected, starting on the date and time that is set for the **When** field. Click the empty check box next to a day to select it.

      Add Scheduled Action Dialog Box (Weekly Recurrence Pattern)



   d. **Monthly**: The action will occur on the selected date of every month. Options are **1** through **31** and last.

      Add Scheduled Action Dialog Box (Monthly Recurrence Pattern)



> **NOTE:** The selection in the **When** box determines the first time the scheduled action occurs and does not need to be set for the recurrence pattern. In the example above, the first time the action occurs will be on July 12. Thereafter, it will occur on the first day of each month, so the next occurrence will be on August 1.

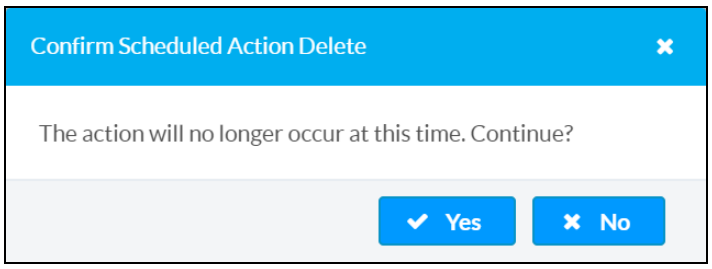
6. If applicable, use the provided controls to configure additional settings for the scheduled action. Each category of scheduled actions has its own unique controls.
7. Select **Save**. The new scheduled action is added under its parent category.

Delete a Scheduled Action

To delete a scheduled action:

1. Use the arrow button next to the action name to expand the selection.
2. Select the plus (**-**) button under **Add/Remove** for the desired action. A **Confirmed Scheduled Action Delete** dialog box is displayed.

   Confirm Scheduled Action Delete Dialog Box



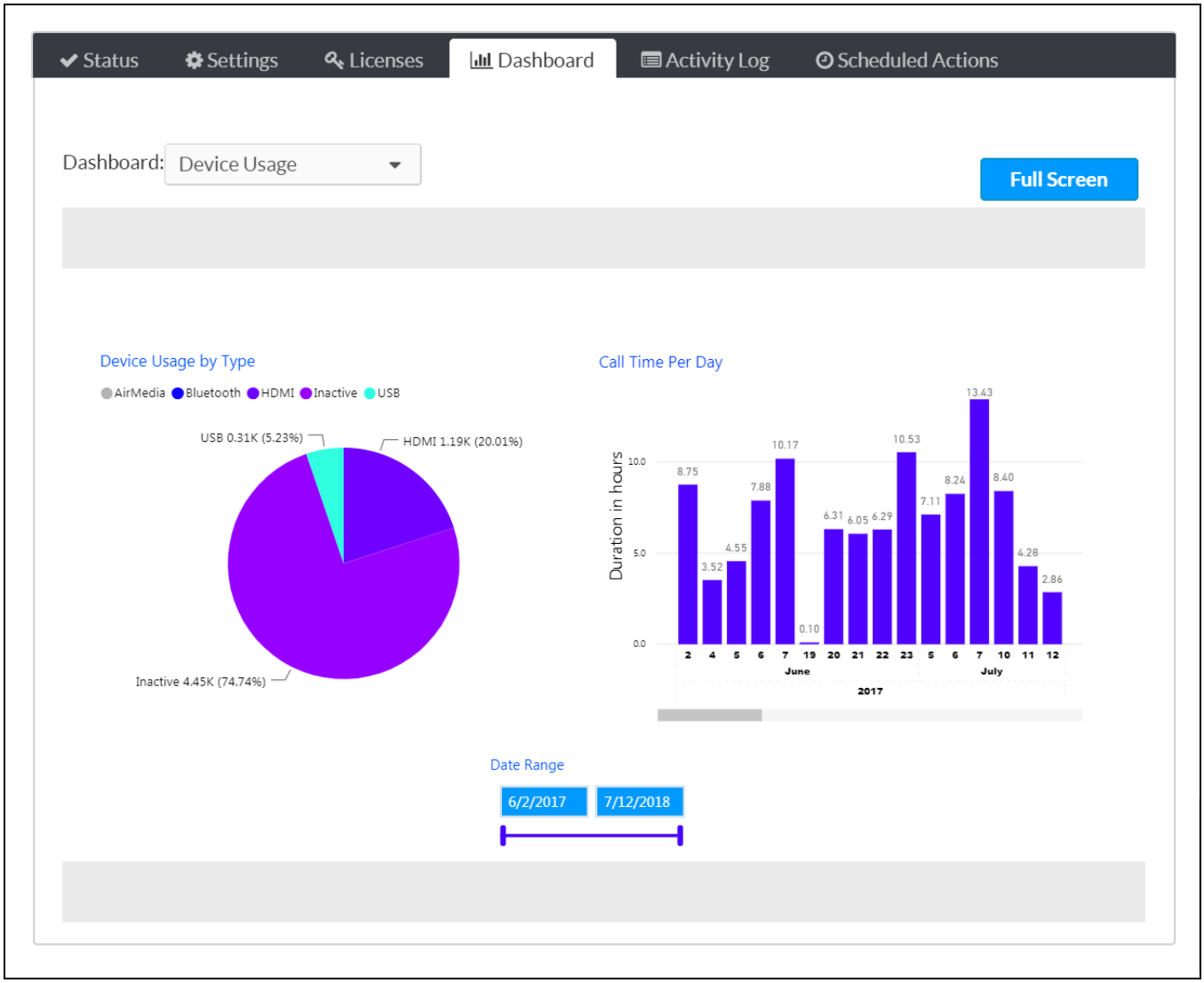
3. Select **Yes** to delete the action, or select **No** to cancel the deletion.

Dashboard

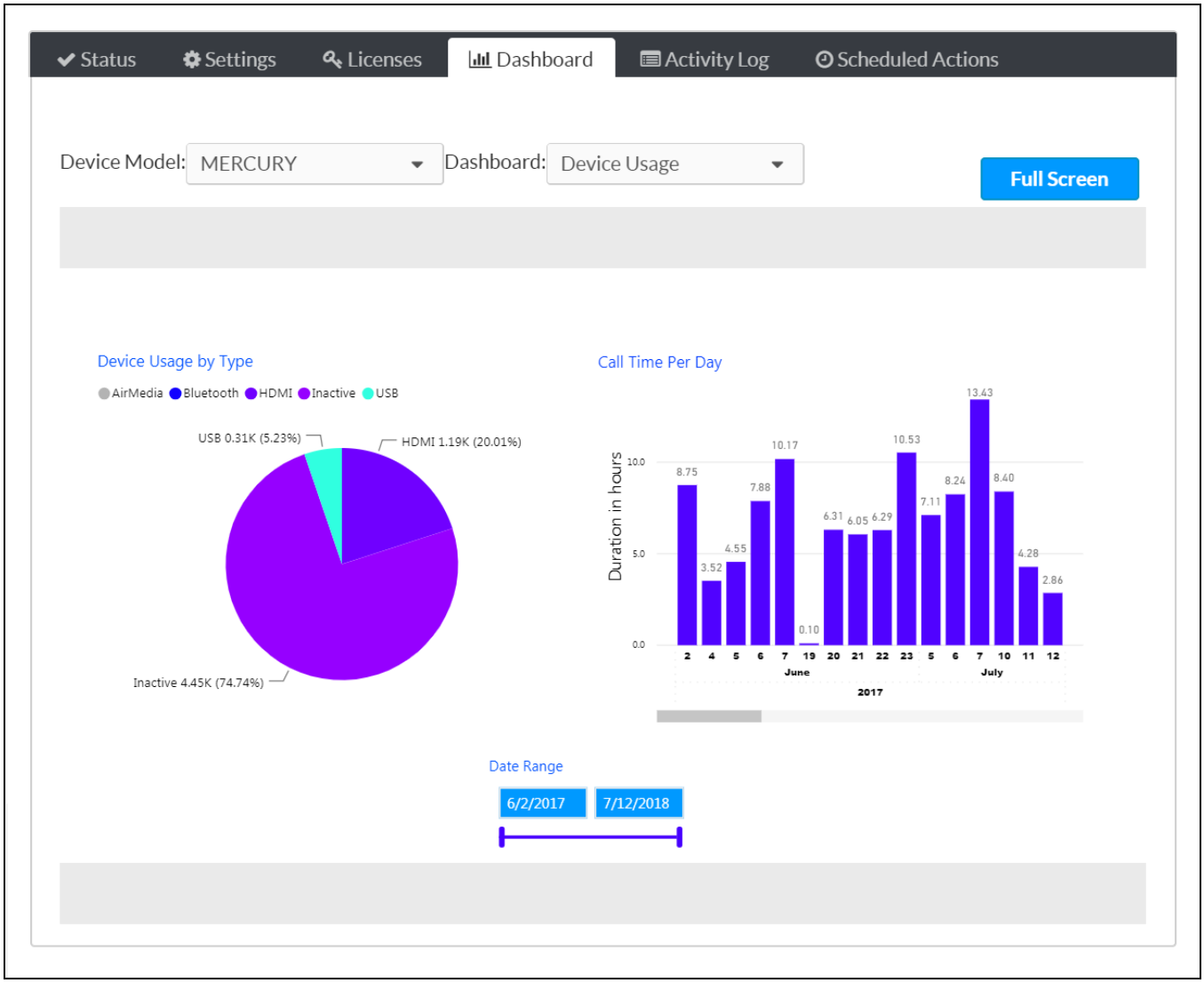
The Dashboard section provides interactive data that shows when and how a device is used within the organization.

The **Dashboard** section is accessible from the **Dashboard** tab for an individual device or for a group or room (license-dependent).

Device Configuration Page - Dashboard



Group Configuration Page - Dashboard



Use the **Dashboard** drop-down menu to select the type of data shown for the device (such as device usage). The available data varies by device.

When viewing the **Dashboard** section for a group or room, select the desired device type from the **Device Model** drop-down menu on the top left of the **Settings** section. The dashboard presents data for all devices within the group or room that share the same model.

Dashboards are interactive and contain different charts that may be cross-filtered by clicking on the chart and filters:

- Hover the mouse cursor over a chart to expose additional selections for viewing and sorting the chart, changing the level of data shown, and exporting data as a CSV file or a Microsoft Excel® software file.
- Use the **Date Range** filter to show data from a specific date range. Enter a start and end date in the appropriate fields, or drag the two points on the slider bar up and down to adjust the start and end dates.

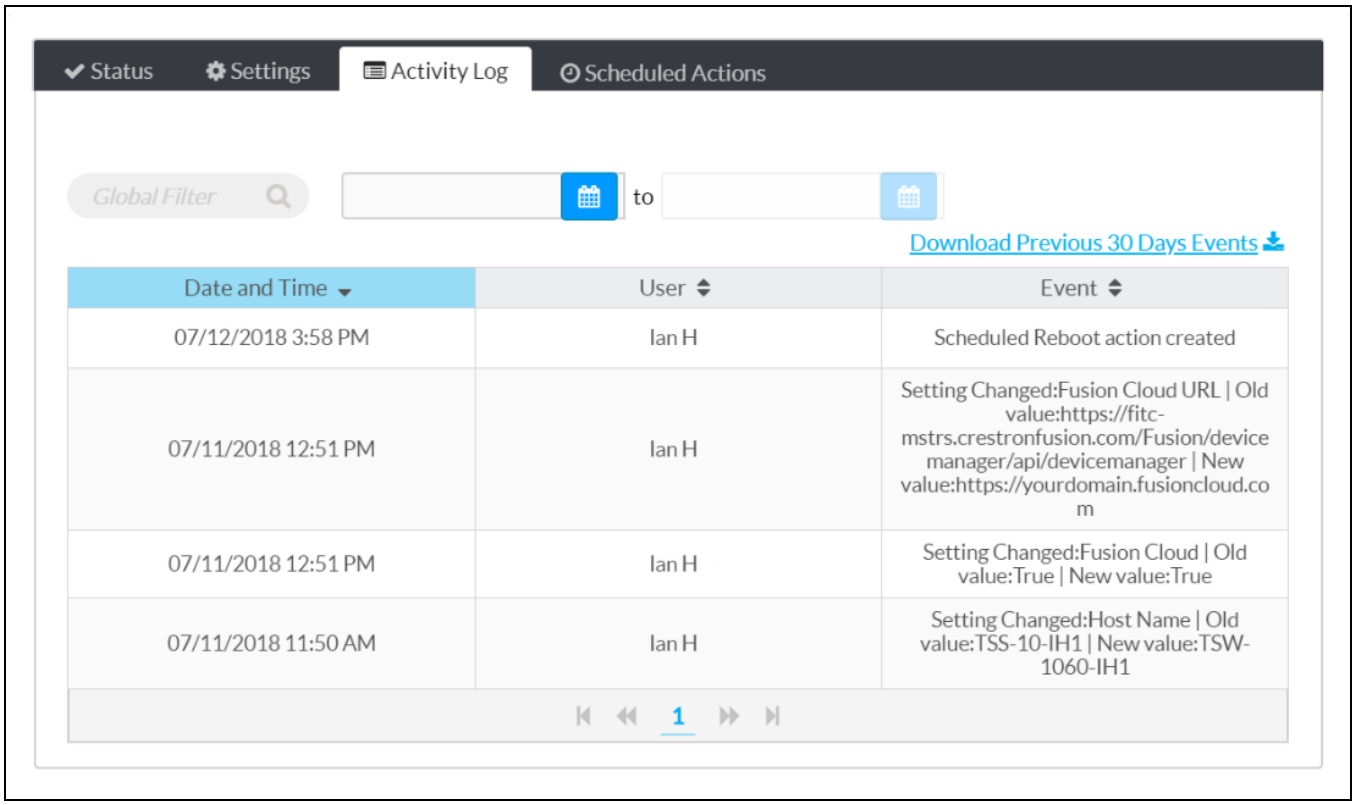
Select **Full Screen** to display the **Dashboard** section in full screen mode. To return to the normal size, press the **Esc** key on the keyboard.

Activity Log

The **Activity Log** section provides a list of events that have occurred for each device.

The **Activity Log** section is accessible from the **Activity Log** tab for an individual device or for a group or room (license-dependent).

Device Configuration Page - Activity Log



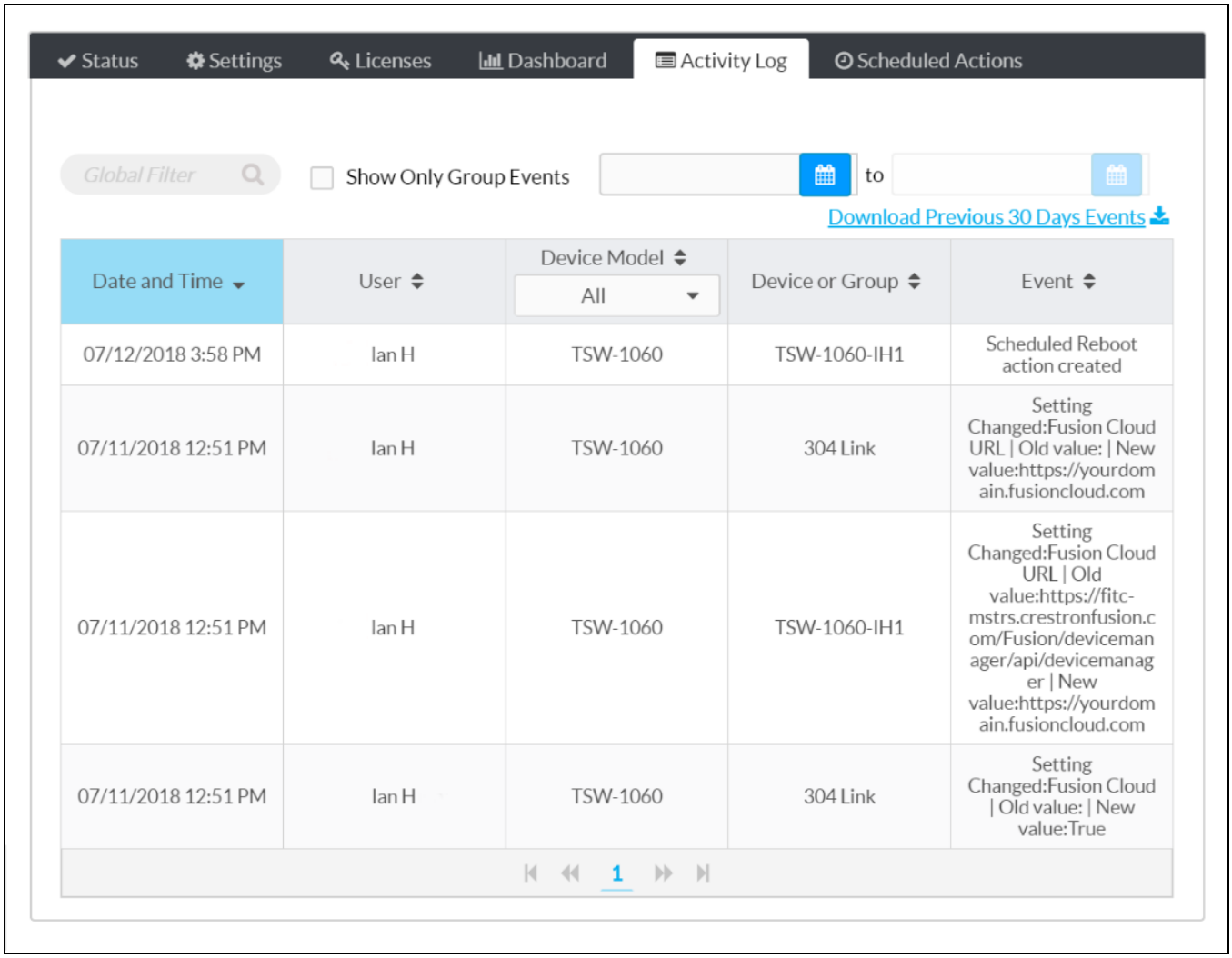
The Activity Log presents the following information for each device in table format:

- Scheduled actions
- Changed device settings, including the original and new values
- Licenses that were added to or removed from the device
- Movement from one group to another
- Movement between online and offline states

Each entry in the **Activity Log** table includes the date and time of the event, the logged-in user who performed the event (if applicable), and a summary of the event.

The **Activity Log** table at the group level presents additional data, including the device model and the device, group, or subgroup that was affected. Use the drop-down menu at the top of the **Device Model** column to filter the table by device type.

Group Configuration Page - Activity Log



The table may be filtered using a global filter or date filter:

- Enter text in to the **Global Filter** text box to search for and display activity log entries that match the search term(s). (For example, typing "Mercury" in the global filter box will show all rows containing the word "Mercury" in any column.)
- Click inside the first date filter text box to select a start date for the activity log, and then click inside the second date box to select an end date for the activity log. The activity log updates to show entries within the specified date range.

If the activity log list spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page.

Select **Download Previous 30 Days Events** to download the previous 30 days of the activity log as a CSV file. Any filter applied to the table are not applied to the CSV file.

When viewing the Activity Log at the group level, click the empty check box next to **Show Only Group Events** to update the table to show events that were performed at the group level only.

Update or Downgrade Firmware

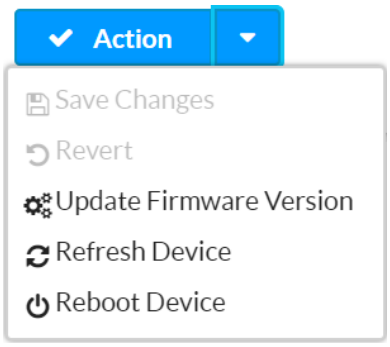
Firmware for one or all devices may be updated or downgraded from the XiO Cloud service. When new firmware is released for a device, it is posted to the cloud and made available for update.

> **NOTE:** Firmware updates are scheduled actions and may be managed like any other scheduled action. For more information, refer to Scheduled Actions on page 50.

To update or downgrade device firmware:

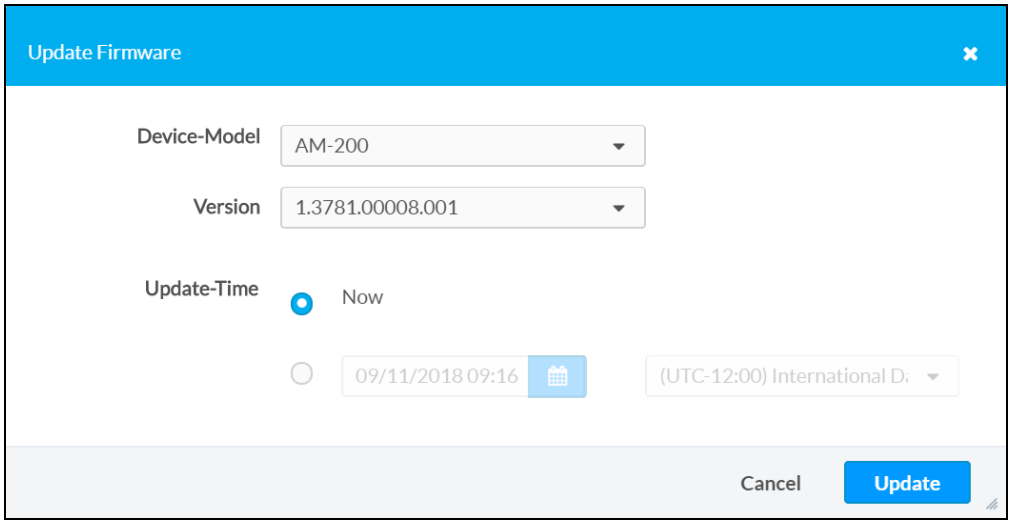
1. Select the individual device or the group where the firmware update is desired.
2. Select **Update Firmware Version** from the **Action** drop-down menu.

   Action Drop-Down Menu

   The **Update Firmware** dialog box is displayed.

   Update Firmware Dialog Box

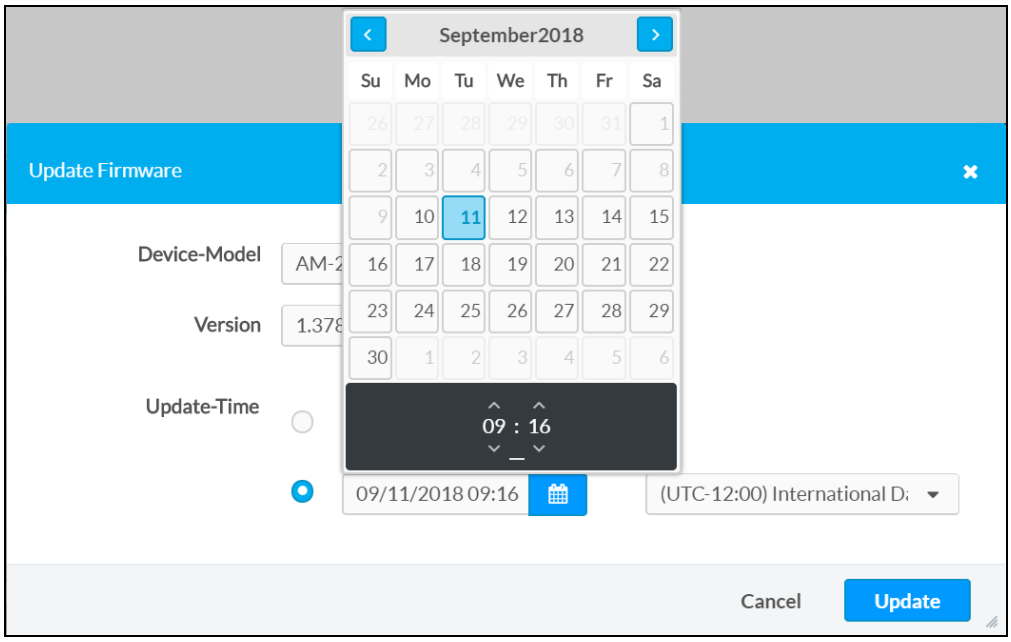
   > **NOTE:** When upgrading firmware from the group or room level, select the device model from the **Device-Model** drop-down menu to upgrade the firmware of all devices that share the model type.

3. Use the **Version** drop-down menu to select the firmware version that will be installed on the device or devices.

   > **NOTE:** Release notes may be downloaded from the link below the **Version** menu if available.

4. Select when the firmware update will be performed:
   a. Select the **Now** radio button to perform the firmware update immediately, or select the radio button next to the **date/time** and **time zone** fields to perform the firmware update at a set date and time. The firmware update will occur on the selected date and time.
   b. Select inside the **date/time** field to display a pop-up dialog box for selecting a date and time.
   c. Use the drop-down menu to the right of the **date/time** field to select a time zone for the firmware update.

   Update Firmware Dialog Box (Day and Time Selection)



5. Select **Update** to perform the firmware update at the selected date and time, or select **Cancel** to cancel the firmware update.

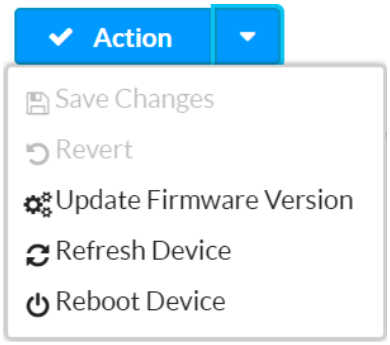
At the specified update time, the device connects to a secure Crestron file server to download and install the firmware. If the device cannot complete the download and installation on the first attempt, it tries up to three more times. If these attempts fail, the device tries one more time at 2:00 AM local time. If this final attempt fails, a failure message is displayed in the **Firmware-Version** column on the group **Status** page.

Restart Devices

An individual device or groups of devices may be rebooted remotely from the XiO Cloud service.

To restart one or more devices, select **Reboot Device** from the **Action** drop-down menu on the desired device or group page. The device or devices restart immediately.

Action Drop-Down Menu



Refresh Devices

Occasionally, the settings or status of a device shown in the XiO Cloud service may become out of sync with the settings or status on the actual device.

To obtain the latest settings and status from the device, select **Refresh Device** from the **Action** drop-down menu. The latest device settings and status are synced with the XiO Cloud service.

Manage Users

Individuals in an organization may have their own login credentials to access the XiO Cloud service. The system administrator can limit a user's access to only the devices that they need to manage. For example, an administrator in Hong Kong may be granted read/write access to devices in their local office but granted read-only access to devices in the London office.

This section explains how to manage users locally.

Add a New User

The **USERS** menu is located in the user management panel, which may be accessed by clicking the **Users** button in the navigation menu.

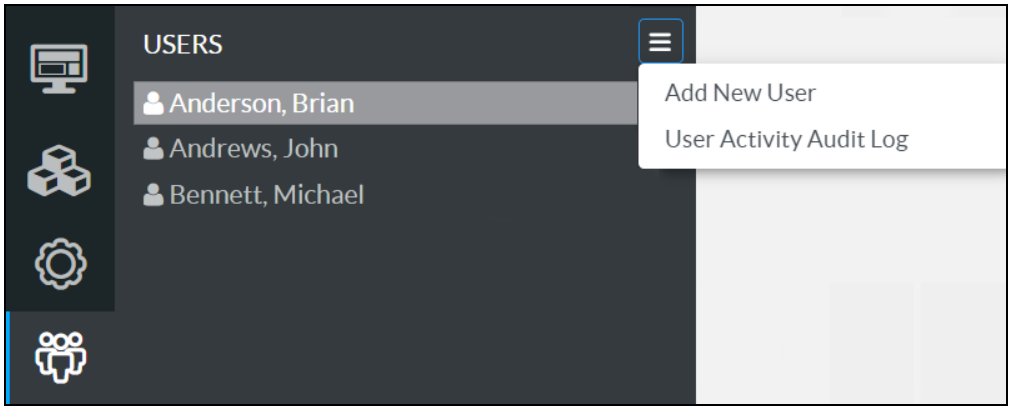
Users Menu

The **USERS** menu provides a list of the users with access to the XiO Cloud service for the organization.

To add a new user:

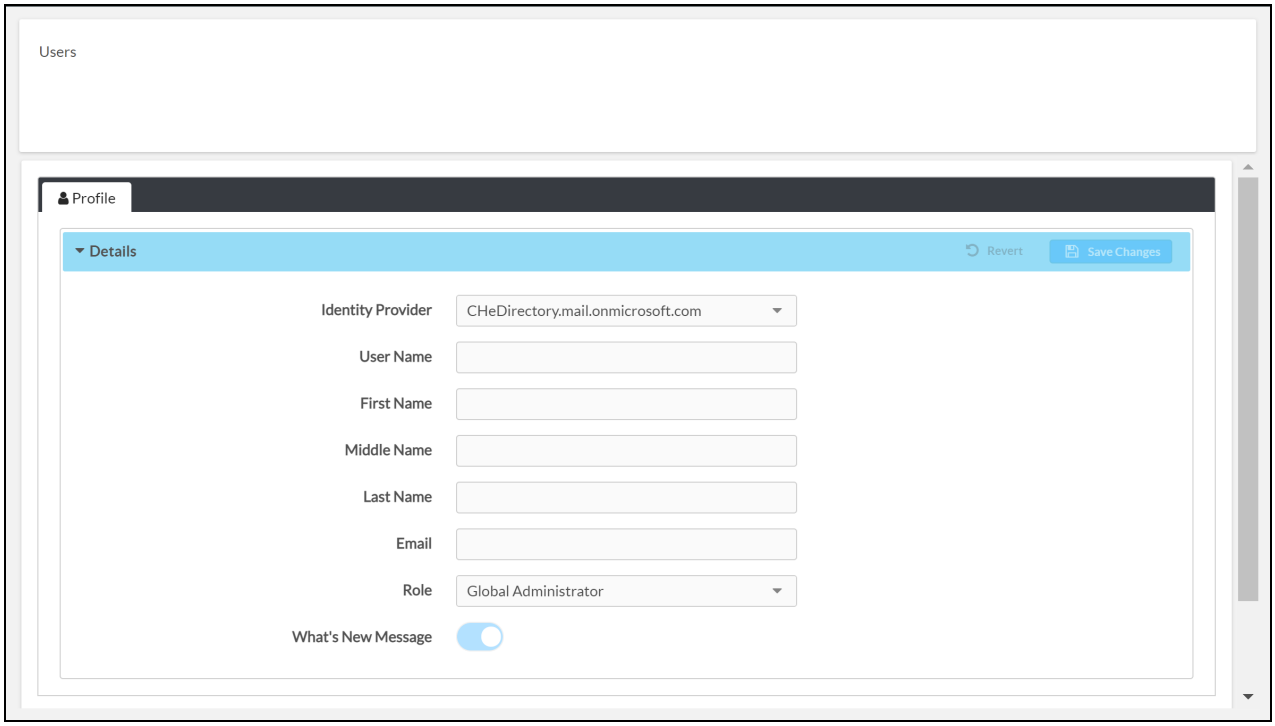
1. Select the **USERS** menu button to display a drop-down menu.

   Users Menu - Add New User



2. Select **Add New User**. A **Users** page is displayed to the right of the **USERS** menu.

   Users Page



3. Use the provided fields to enter information about the new user, including identity provider, username, name, email address, and role. Two roles are available in the XiO Cloud service:
   - Select **Global Administrator** from the **Role** drop-down menu to grant the user complete access to every part of the system. The user may add other global administrators. There must always must be at least one global administrator in the system.
   - Select **Standard User** from the **Role** drop-down menu to grant the user limited levels of access based on assigned groups. This user may not add other global administrators.

4. Once all information is entered, select **Save Changes** at the top right of the screen. Select **Revert** to clear any information that was entered.

The user receives an email asking for account confirmation, along with a temporary password. A change of password is requested on the first login.

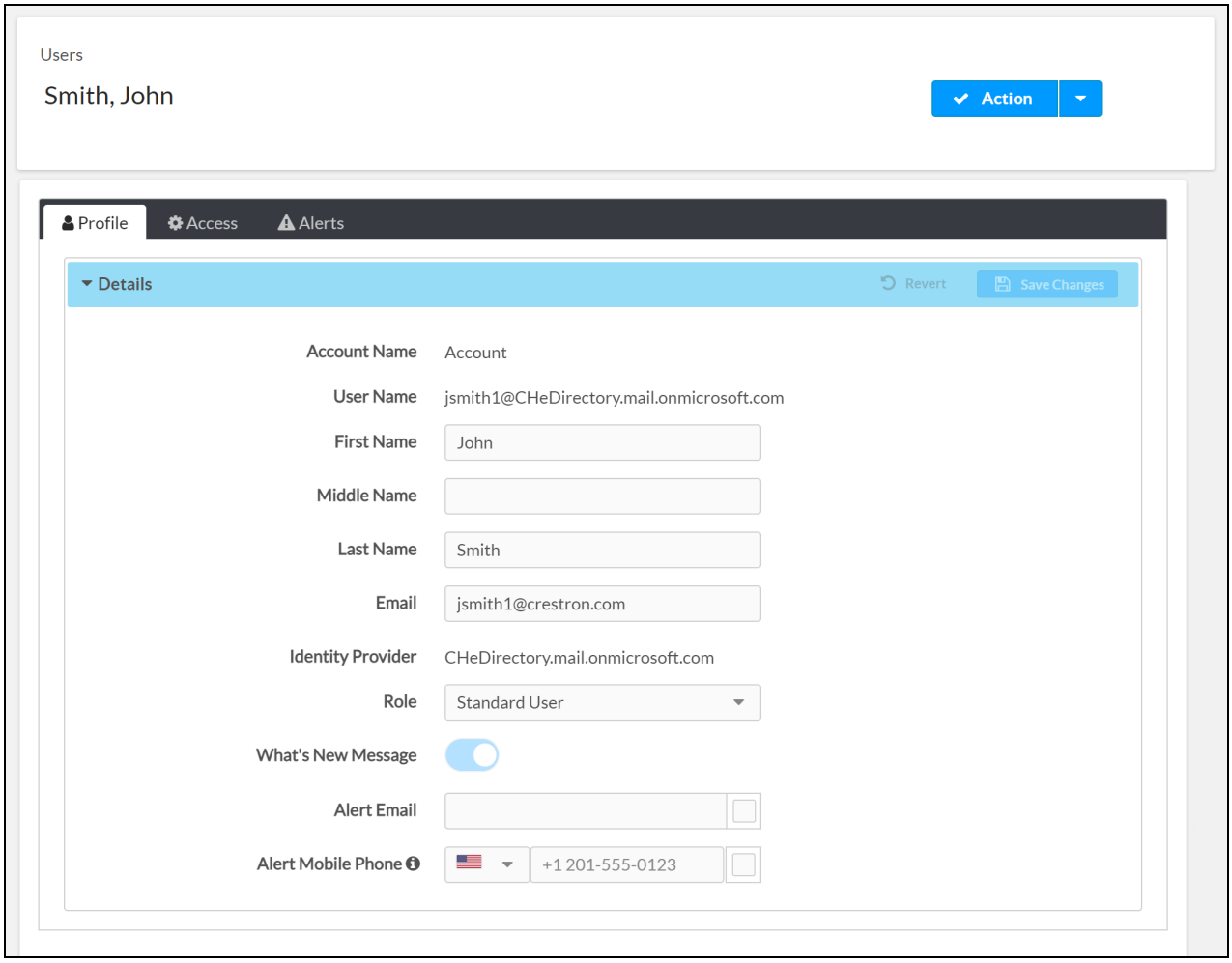
Edit User Information

Any of the information entered for a user during the account creation process may be edited at any time.

To edit the information for an existing user:

1. Select the user's name in the **USERS** menu. A **Users** page with the **Profile** tab open by default is displayed to the right of the **USERS** menu.

   Uses Page - Profile



2. Use the provided fields to edit information about the user, including name, email address, role, and alert notifications.

> **NOTE:** For more information on managing alerts, refer to Alerts on page 78. For more information on the What's New Message, refer to What's New Message on page 77.

3. Select **Save Changes** at the top right of the screen to save any changes made. Select **Revert** to clear any information that was entered.

Manage User Access

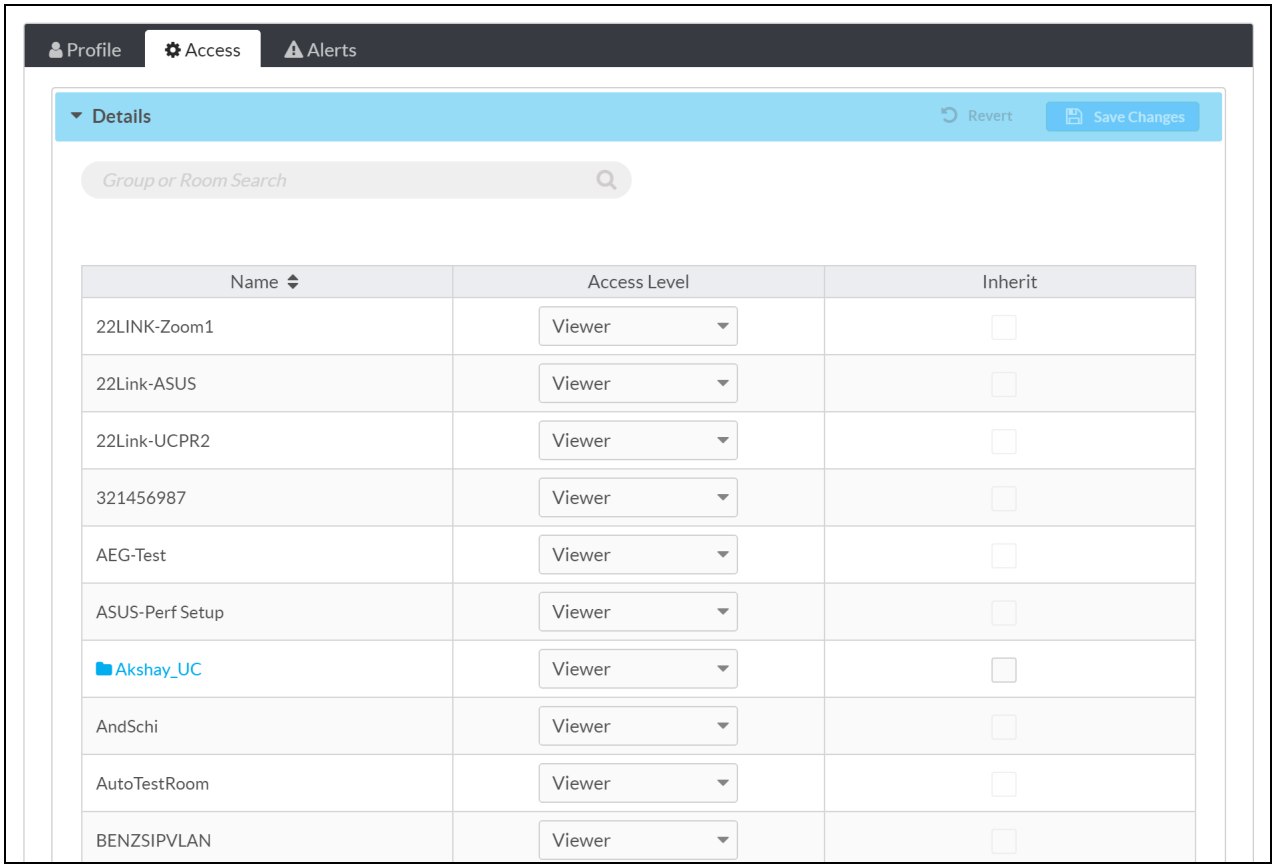
Users may be granted different access levels to groups or rooms within the XiO Cloud service environment.

> **NOTE:** For more information on the tasks that can be performed by each user access level, refer to Appendix B: User Access Matrix on page 157.

To manage access levels for a user:

1. Select the user's name in the **USERS** menu. A **Users** page with the **Profile** tab open by default is displayed to the right of the **USERS** menu.
2. Select the **Access** tab.

Users Page - Access Tab



3. Use the **Access Level** drop-down menu to select the user's access level for each group and subgroup or room.

   > **NOTE:** Enter text in to the **Group or Room Search** text box to search for and display groups or rooms that match the search term(s).

   - Select **Viewer** to grant the user read-only access to the group or room. The user may view devices within the group or room but cannot modify them.
   - Select **Tech** to grant the user read and write access to the group or room. The user may view the status of devices and change device settings within the group or room.
   - Select **Administrator** to grant the user read and write access to the group or room and to allow the user to change the access level of other users to the group or room.
   - Select **Hidden** to hide the room or group from the user within the group tree.
   - (Subgroups or room only) Select **Inherit** to have the subgroup or room inherit the access level settings of its parent group. **Inherit** is the default setting for subgroups.

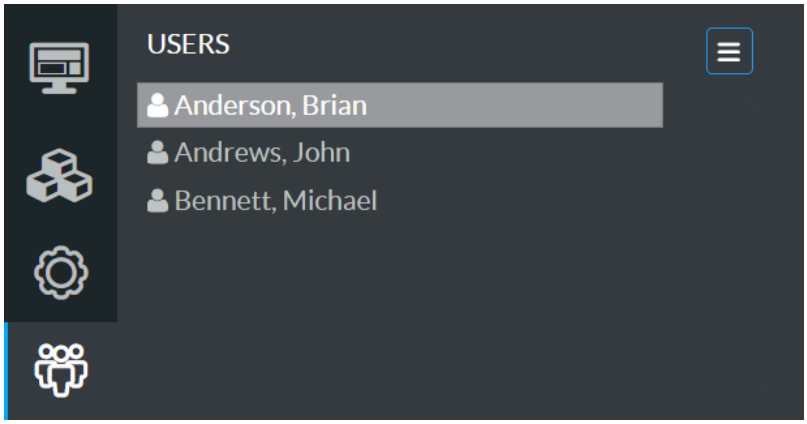
Delete a User

Users may be deleted from the XiO Cloud service to remove their access and to prevent them from viewing or changing any settings in the service.

To delete a user:

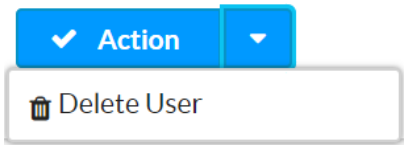
1. Select the user's name in the **USERS** menu.

   Users Menu

2. Select **Delete User** from the **Action** menu.

   Action Drop-Down Menu - Delete User

The **Confirm User Delete** dialog box is displayed.

Confirm User Delete Dialog Box

3. Select **Yes** to delete the user or select **No** to cancel the deletion.

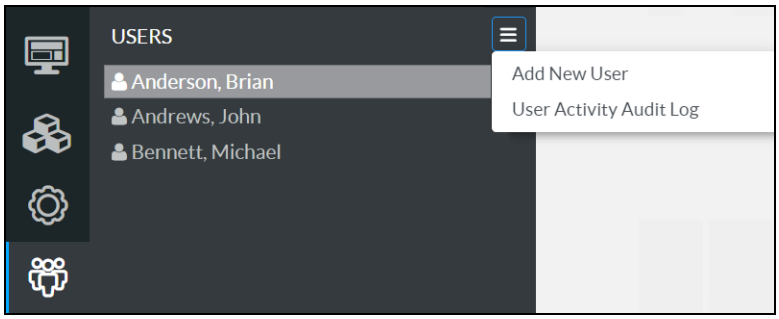
Download User Activity Audit Log

A user activity audit log for the XiO Cloud account can be downloaded as a CSV file. The audit log provides a list of recent user-initiated events (such as login and logoff) with corresponding user IDs and time stamps.

To download the user activity audit log:

1. Select the **USERS** menu button to display a drop-down menu.

   Users Menu - User Activity Audit Log



2. Select **User Activity Audit Log**. The audit log is downloaded to your PC as a CSV file.

Single Sign-On

XiO Cloud accounts can be configured for enterprise single sign-on (SSO) with the Okta® management platform, the Active Directory® service, and other identity providers. Account administrators may contact Crestron support to configure their accounts for single sign-on.

To configure SSO for the XiO Cloud service using an identity provider:

1. Create a SAML or OpenID application registration in the identity provider. Refer to Crestron OLH article 1000838 for instructions on how to create SAML applications for common identity providers.

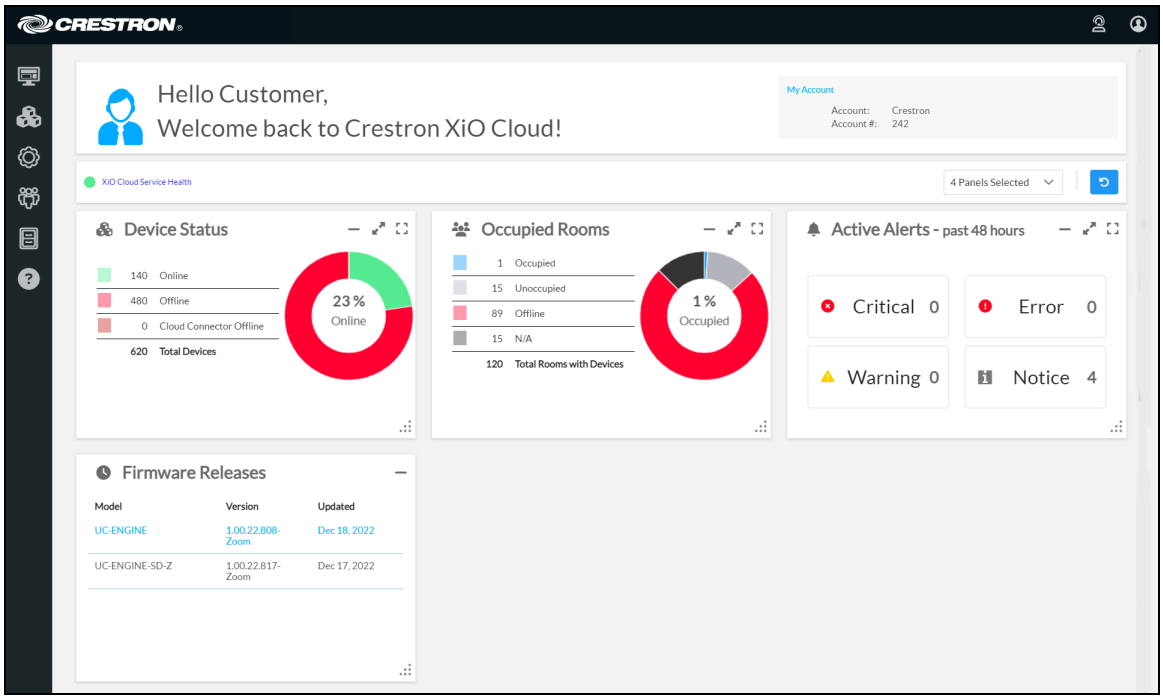
2. Submit a completed XiO Cloud SSO Request Form to Crestron. Crestron will respond to the account administrator via email once the integration is confirmed.
3. Add one or more external users to the XiO Cloud account as described in Manage Users on page 62.
    - Select **External Domain** for **Identity Provider** when creating the external user.
    - The email address specified for the external user must match their email address used to access the identity provider.
    - Ensure that the appropriate user role and access level are delegated to the external user.
4. Test that the external user(s) can log into the service once Crestron has confirmed the integration.

XiO Cloud also supports multifactor authentication (MFA) for single sign-on solutions. MFA is configured within your identity provider.

Account Dashboard

The XiO Cloud service provides an account dashboard that shows various account statuses in real time. The account dashboard can be accessed by selecting the **Home** button in the navigation menu and is displayed by default after logging into the service.

Account Dashboard



The account dashboard page provides a message near the top of the page that indicates the current health status of the XiO Cloud service.

A green icon is shown if the service is healthy, and a red icon is shown if the service is unhealthy (experiencing issues or outages). A link to Crestron online help answer ID 5894 is also provided that gives detailed information on the current health status of the XiO Cloud service and updates regarding service restoration.

The account dashboard page also contains tiles that each show different account statuses. These tiles can be expanded, hidden, or reordered as needed.

> **NOTE:** Certain account status tiles may not provide all of the controls listed below.

- Select the maximize button at the top right of a tile to expand the tile to the full width of the browser window and to show more information for the associated account status.

  > **NOTE:** The maximize button cannot be selected if the browser window is not maximized to full screen.

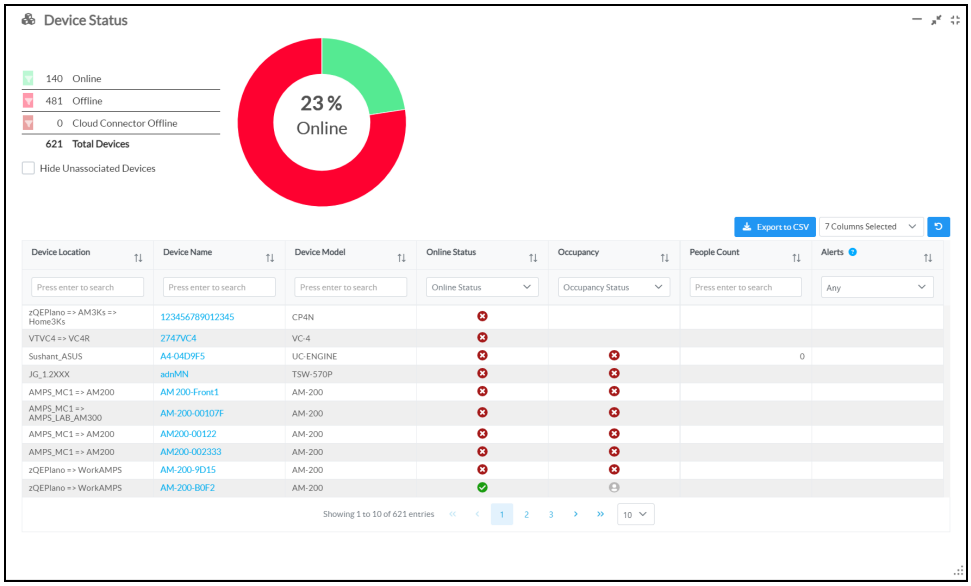
- If a tile is expanded to full width, select the maximize button again to shrink the tile to its original size, or select the half-width button to shrink the tile to half the width of the browser window.
- Select the half-width button at the top right of a tile to expand the tile half the width of the browser window and to show more information for the associated account status.
- If a tile is expanded to half width, select the half-width button again to shrink the tile to its original size.
- Select the minimize button to hide the tile from the account dashboard page. Hidden tiles can be returned to the account dashboard page using the **View Panels** drop-down menu.
- Use the **View Panels** drop-down menu on the top right of the page to show or hide tiles. If a tile is selected, it will be shown on the account dashboard page. If a tile is unselected, it will be hidden from the page.
- Select the clear button to clear any filters that have been created to sort data in the account status tiles. Each tile that allows filters will also provide a clear button for the individual account status.
- Press and hold a tile's header bar or the grip icon in the bottom-right corner to float the tile for reordering. Once it is floating, drag the tile across the account dashboard page to the desired location, and then release the tile to move it to that location. If the floating tile is placed over an existing tile, the latter tile is moved automatically.

The following account statuses are displayed in the dashboard.

Device Status

Expand the **Device Status** tile to display information about devices that are reporting online or offline within the service. The devices that are shown can be filtered based on their status and type.

Account Dashboard Page - Device Status



A pie chart is provided that gives an overview of the devices that are reporting online or offline within the service. The pie chart corresponds with the device status categories that are listed to the left of the chart. The following device status categories are provided:

> **NOTE:** Devices that have not been associated with a room or group are included in the device status reports by default. Select the **Hide Unassociated Devices** check box below the device status categories to hide all unassociated devices from the device status reports.

- **Online**: Indicates the number of devices that are reporting online within the service.
- **Offline**: Indicates the number of devices that are reporting offline within the service. A device is considered offline after three consecutive heartbeat messages from the device to the service are missed.
- **Cloud Connector Offline**: Indicates the number of connected Crestron XiO Cloud Gateway devices that are reporting offline.

Certain device status categories have filter buttons that can be used to show or hide the category from the pie chart. The color of the filter buttons matches the color of the device status category in the pie chart. Once a device status category is hidden, select the button again to show the status in the pie chart. The percentage of online devices shown within the pie chart changes automatically depending on the selected filters.

> **NOTE:** The filter buttons also filter data in the device status table within the tile automatically.

The **Device Status** tile also lists all devices in the account in table form. Each table column provides a search field or drop-down menu in its header row that allows the device table to be filtered or sorted based on the selected criterion. The table also provides navigation controls at the bottom of the tile that can be used to move between pages and set the number of table rows per page.

The following information is provided for each device:

- **Device Location**: The room or group where the device is located within XiO Cloud.
- **Device Name**: The device name in XiO Cloud. Select the device name to navigate to the device within the group tree.
- **Device Model**: The device model.
- **Online Status**: Indicates whether the device is reporting online or offline within XiO Cloud. Crestron XiO Cloud Gateway connected devices that are reporting offline show a cloud connector offline icon.
- **Occupancy**: Shows one of the following icons if the device supports occupancy detection. No icon is shown if the device does not support occupancy detection.
  - Shows a blue icon if occupancy is detected.
  - Shows a gray icon if no occupancy is detected.
  - Shows an x icon if occupancy detection is reporting offline.
- **People Count**: If occupancy detection is supported by the device, displays the occupancy number for the associated room.
- **Alerts**: If alerts are reported for the room, a description of the issue and the corresponding alert level (**Notice**, **Warning**, **Error**, and **Critical**) are shown for each alert.

The data that is displayed in the device table can be customized by filtering the table columns. By default, 7 columns are displayed that contain the data described in the list above. Select the clear button to clear any filters for the **Device Status** tile.

To select or deselect table columns for the device status table, expand the drop-down menu at the top right of the table. Then, select or deselect an item in the menu to display or hide that column from the table, respectively. Use the check box at the top of the menu to select or deselect all columns.

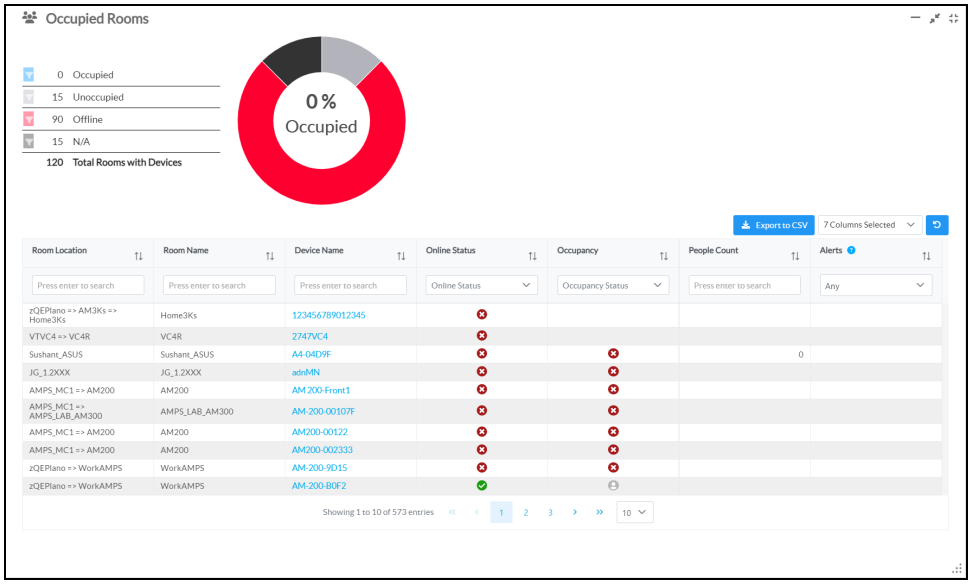
> **NOTE:** The device status table will reset to its default settings after logging out of the XiO Cloud service.

The device status table can be downloaded as a CSV file by clicking the **Export to CSV** button at the top right of the table. The CSV file will include all table columns that have been selected as described above.

Occupied Rooms

Expand the **Occupied Rooms** tile to display information about room occupancy status within the service. The rooms that are shown can be filtered based on their status and type.

Account Dashboard Page - Occupied Rooms



A pie chart is provided that gives an overview of the room occupancy within the service. The pie chart corresponds with the room occupancy categories that are listed to the left of the chart. The following room occupancy categories are provided:

- **Occupied**: Indicates the number of rooms that are reporting as occupied within the service. If multiple devices in a room report occupancy, the room will show as occupied if any of these devices report active occupancy.
- **Unoccupied**: Indicates the number of rooms that are reporting as unoccupied within the service.
- **Offline**: Indicates the number of rooms that have occupancy detection reporting as offline within the service.
- **N/A**: Indicates the number of rooms that do not contain devices that report occupancy.

Certain room occupancy categories have filter buttons that can be used to show or hide the category from the pie chart. The color of the filter buttons matches the color of the room occupancy category in the pie chart. Once a room occupancy category is hidden, select the button again to show the status in the pie chart. The percentage of occupied rooms shown within the pie chart changes automatically depending on the selected filters.

> **NOTE:** The filter buttons also filter data in the room occupancy table automatically.

The **Occupied Rooms** tile also lists all rooms in the account in table form. Each table column provides a search field or drop-down menu in its header row that allows the room occupancy table to be filtered or sorted based on the selected criterion. The table also provides navigation controls at the bottom of the tile that can be used to move between pages and set the number of table rows per page.

The following information is provided for each room:

- **Room Location**: The location of the room within the group tree.
- **Room Name**: The room name in XiO Cloud
- **Device Name**: The device name that reports occupancy within the room (if applicable). Select the device name to navigate to the device within the group tree.
- **Online Status**: Indicates whether the device is reporting online or offline within XiO Cloud. Crestron XiO Cloud Gateway connected devices that are reporting offline show a cloud connector offline icon .
- **Occupancy**: Shows one of the following icons if the device supports occupancy detection. No icon is shown if the device does not support occupancy detection.
  - Shows a blue icon if occupancy is detected.
  - Shows a gray icon if no occupancy is detected.
  - Shows an x icon if occupancy detection is reporting offline.
- **People Count**: If occupancy detection is supported by the device, displays the occupancy number for the associated room.
- **Alerts**: If alerts are reported for the room, a description of the issue and the corresponding alert level (**Notice**, **Warning**, **Error**, and **Critical**) are shown for each alert.

The data that is displayed in the room occupancy table can be customized by filtering the table columns. By default, 7 columns are displayed that contain the data described in the list above. Select the clear button to clear any filters for the **Occupied Rooms** tile.

To select or deselect table columns for the room occupancy table, expand the drop-down menu at the top right of the table. Then, select or deselect an item in the menu to display or hide that column from the status table, respectively. Use the check box at the top of the menu to select or deselect all columns.

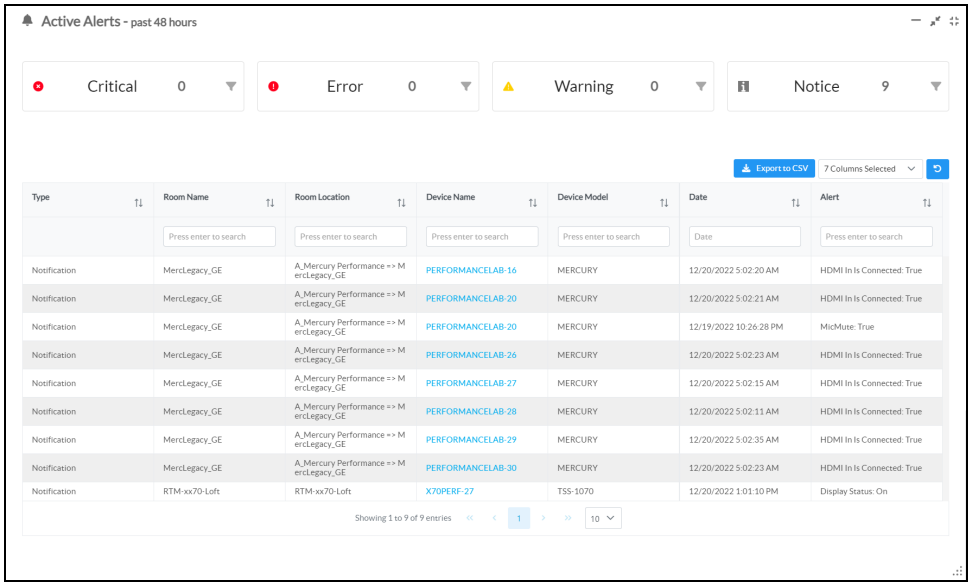
> **NOTE:** The room occupancy table will reset to its default settings after logging out of the XiO Cloud service.

The room occupancy table can be downloaded as a CSV file by clicking the **Export to CSV** button at the top right of the table. The CSV file will include all table columns that have been selected as described above.

Active Alerts - last 48 hours

Expand the **Active Alerts - last 48 hours** tile to display information about alert messages that have been raised within the service over the last 48 hours.

Account Dashboard Page - Active Alerts - last 48 hours



The **Active Alerts - last 48 hours** tile shows the total number of alert messages that are active. Each alert level (**Notice**, **Warning**, **Error**, and **Critical**) shows a number that indicates how many alerts are active for that level.

> **NOTE:** For more information on alert messages, refer to Alerts on page 78.

The **Active Alerts - last 48 hours** tile also lists all active alerts in the account in table form. Each table column provides a search field or drop-down menu in its header row that allows the alerts table to be filtered or sorted based on the selected criterion. The table also provides navigation controls at the bottom of the tile that can be used to move between pages and set the number of table rows per page.

The following information is provided for each alert:

- **Type**: The alert level (**Notice**, **Warning**, **Error**, and **Critical**)
- **Room Name**: The room name in XiO Cloud where the alert was raised.
- **Room Location**: The location of the room within the group tree.
- **Device Name**: The device name in XiO Cloud that raised the alert.
- **Device Model**: The device model.
- **Date**: The date and time when the alert was raised.
- **Alert**: A description of the issue that triggered the alert.

The data that is displayed in the alerts table can be customized by filtering the table columns. By default, 7 columns are displayed that contain the data described in the list above. Select the clear button to clear any filters for the **Active Alerts - last 48 hours** tile.

To select or deselect table columns for the alerts table, expand the drop-down menu at the top right of the table. Then, select or deselect an item in the menu to display or hide that column from the table, respectively. Use the check box at the top of the menu to select or deselect all columns.

> **NOTE:** The alerts table will reset to its default settings after logging out of the XiO Cloud service.

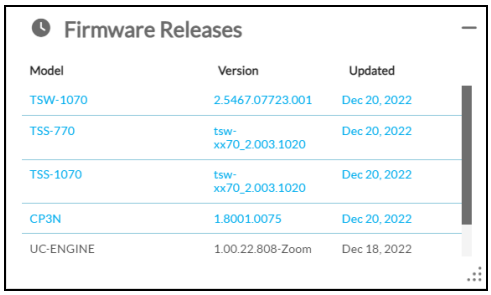
The alerts table can be downloaded as a CSV file by clicking the **Export to CSV** button at the top right of the table. The CSV file will include all table columns that have been selected as described above.

Firmware Releases

The **Firmware Releases** tile displays information about recent firmware releases for devices that have been claimed to the XiO Cloud account. For more information about updating device firmware in XiO Cloud, refer to Update or Downgrade Firmware on page 59.

> **NOTE:** The **Firmware Releases** tile cannot be expanded to full or half-width size.

Account Dashboard Page - Firmware Releases



The following information is provided for each firmware release:

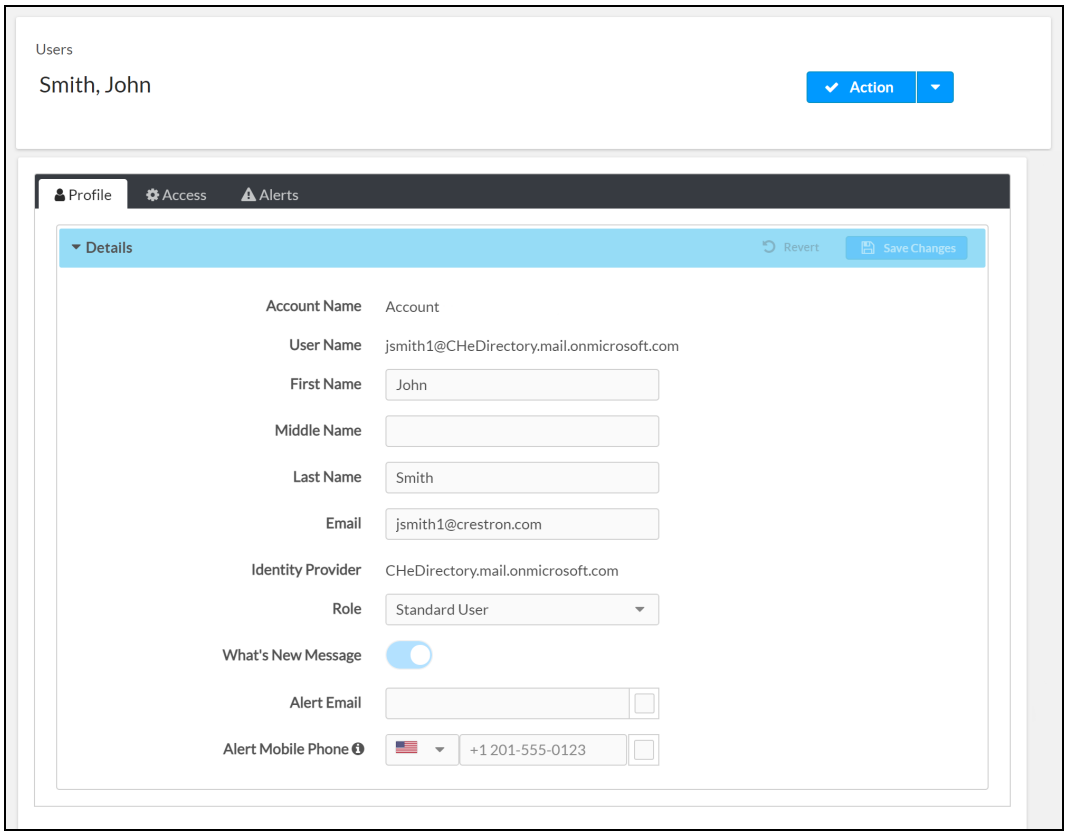
- **Model**: The device model.
- **Version**: The device firmware version.
- **Updated**: The date the firmware version was last updated or released.

What's New Message

The XiO Cloud service shows messages occasionally that announce new features or news about the service.

To disable these messages, set the **What's New Message** toggle on the user profile page to **Disable**. For more information on editing user information, refer to Edit User Information on page 64.

User Profile Page



Alerts

The XiO Cloud service sends alerts when it detects an issue with a device. Alerts are sent via email or text messages to any user that is configured to receive alerts. For room-based accounts, enabling alerts requires purchase of one SW-XIOC-S license per room.

> **NOTE:** XiO Cloud alerts can be integrated with ServiceNow® software instances. For more information, refer to Appendix A: Configure ServiceNow for XiO Cloud Alerts on page 139.

Configure Contact Information

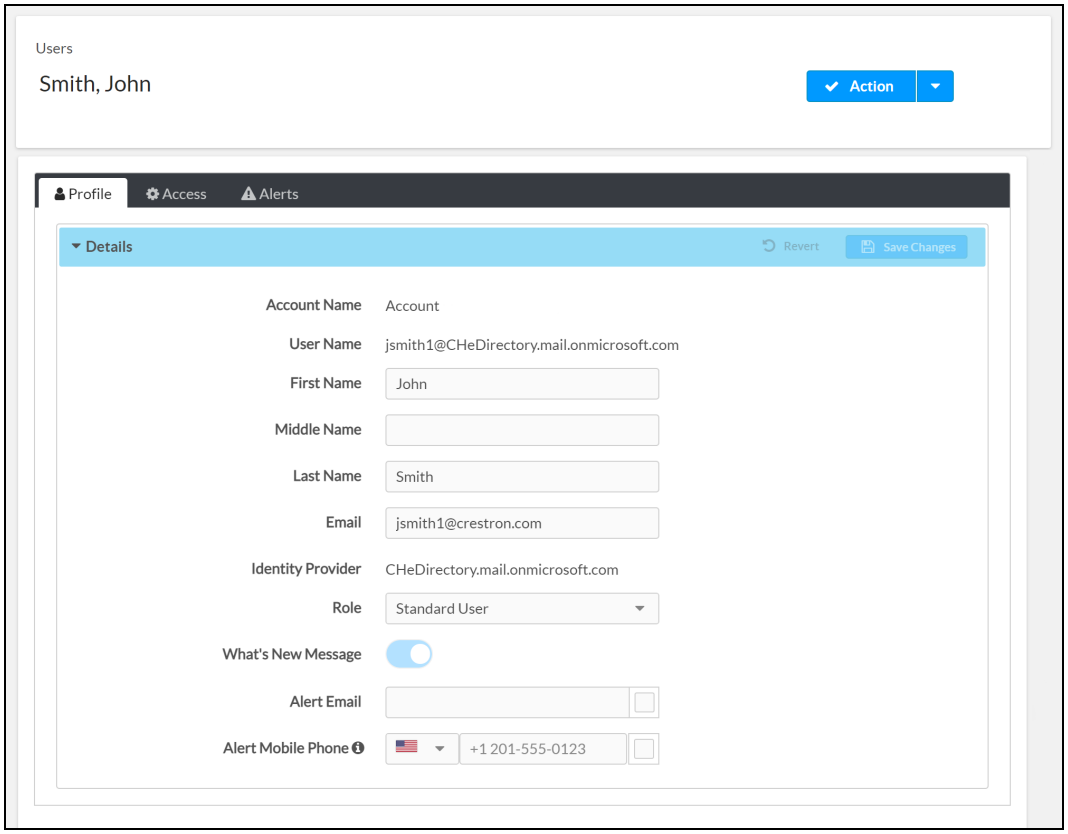
To receive alerts, a user must enable alerts for email and/or text messages in his or her profile page.

To configure alerts for a user:

1. Select the user's name in the **USERS** menu. A **Users** page with the **Profile** tab open by default is displayed to the right of the **USERS** menu.
2. Choose one or both of the following alert methods:
    - Click the check box next to the **Alert Email** text field to enable email alerts. Enter a valid email address in the **Alert Email** text field to receive messages at that address.
    - Click the check box next to the **Alert Mobile Phone** text field to enable text message alerts. Enter a valid mobile phone number (including country code and area code) in the **Alert Mobile Phone** text field to receive text messages at that phone number.

      > **NOTE:** SMS services are not supported in all countries. For a list of countries that currently support the service, refer to FAQs on page 115.

User Profile Page



3. Select **Save Changes** at the top right of the screen to save any changes made. Select **Revert** to clear any information that was entered.

Configure Alert Levels

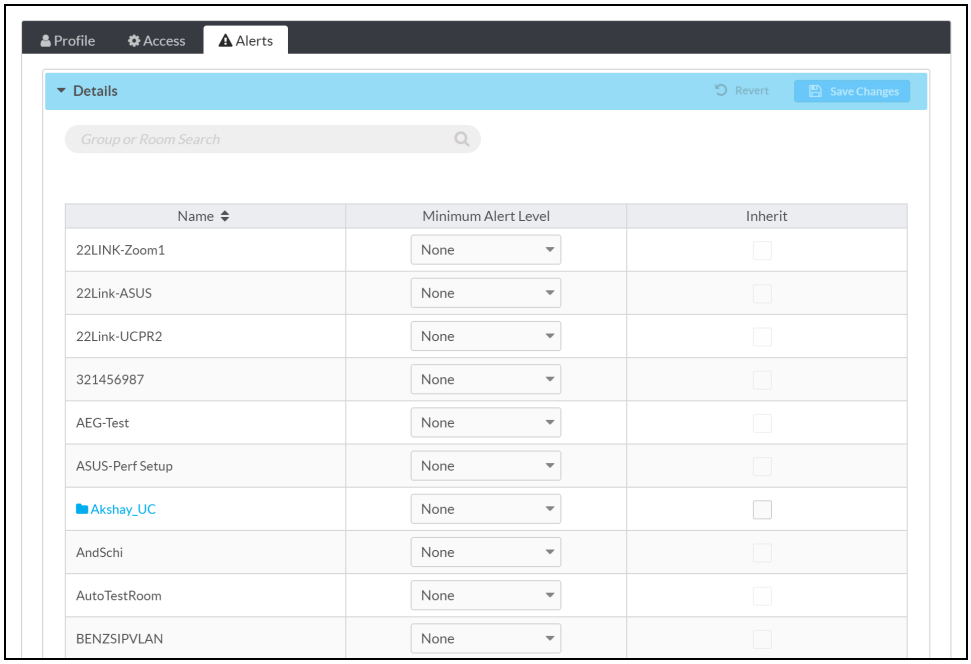
Alerts may be configured so that they are issued at different severity levels for different groups. This configuration is set at the user level, so each user may customize the alerts that he or she receives.

To configure access levels for alerts:

> **NOTE:** A user must be configured to receive alerts via email or mobile phone before alert levels can be configured for that user. Refer to Configure Contact Information on page 78 for more information.

1. Click the user's name in the **USERS** menu. A **Users** page with the **Profile** tab open by default is displayed to the right of the **USERS** menu.
2. Click the **Alerts** tab.

Users Page – Alerts Tab



3. Use the **Minimum Alert Level** drop-down menu to select the alert severity level (**None**, **Notice**, **Warning**, **Error**, or **Critical**) for each group and subgroup or room. Only alerts of the chosen severity level or higher will be sent.
4. (Subgroups only) Select **Inherit** to have the subgroup or room inherit the alert severity level settings of its parent group. **Inherit** is the default setting for subgroups and rooms.

> **NOTE:** Enter text in to the **Group or Room Search** text box to search for and display groups or rooms that match the search term(s).

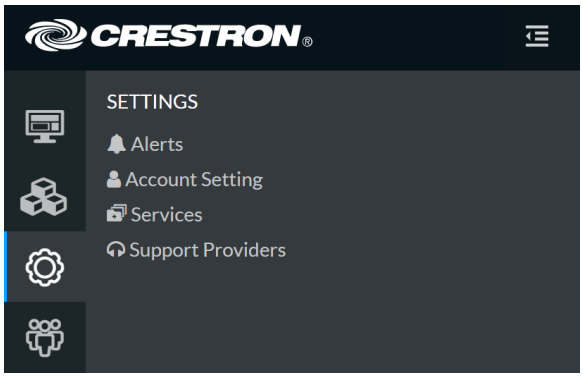
5. Select **Save Changes** at the top right of the screen to save any changes made. Select **Revert** to clear any information that was entered.

Manage Alerts

The changes made to a device that trigger an alert may be customized. The XiO Cloud service adds common alerts automatically. However, these alerts may be deleted and new alerts may be added.

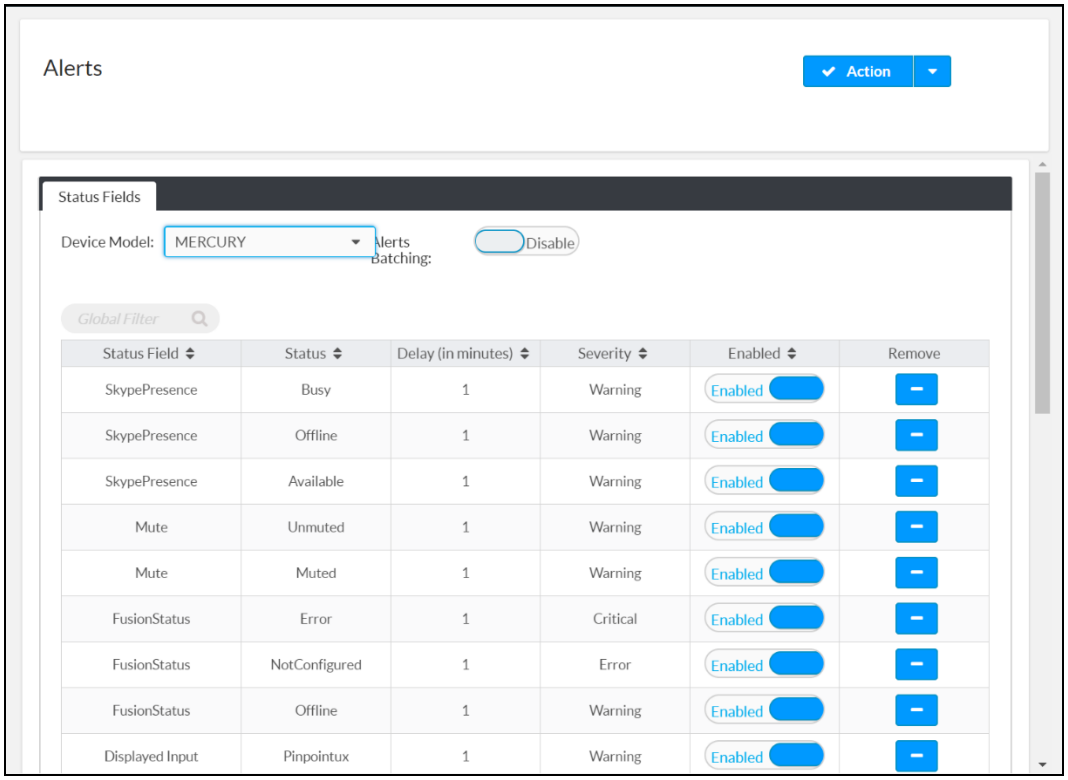
The **SETTINGS** menu for alerts is located in the user management panel, which may be accessed by selecting the **Settings** button in the navigation menu.

Settings – Alerts Option



Select **Alerts** in the **SETTINGS** menu. An **Alerts** page with the **Status Fields** tab open by default is displayed to the right of the **SETTINGS** menu.

Alerts – Status Fields Tab



Alerts in the **Status Fields** section are organized by device type. To configure alerts for a device type, select the desired device type from the **Device Model** drop-down menu on the top left of the **Status Fields** section.

Alerts may be also be batched by setting the **Alerts Batching** toggle to **Enabled**. When **Alerts Batching** is enabled, all alerts for a device are batched together and may be enabled/disabled or removed at once.

The **Status Fields** table presents all of the alerts configured for the selected device type. The following information is provided:

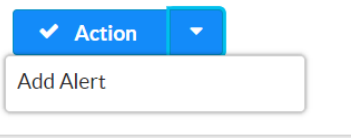
- **Status Field**: The device status type (An alert is triggered if changes to this status are detected.)
- **Status**: The state that the device status must reach in order to trigger an alert
- **Delay**: The duration in minutes that the device must remain in the selected status before an alert is triggered
- **Severity**: The severity level of the alert, which determines the users who are notified based on their configured alert levels
- **Enabled/Disabled**: Provides controls for enabling or disabling the alert
- **Remove**: Provides controls for removing the alert

Add a New Alert

To add a new alert:

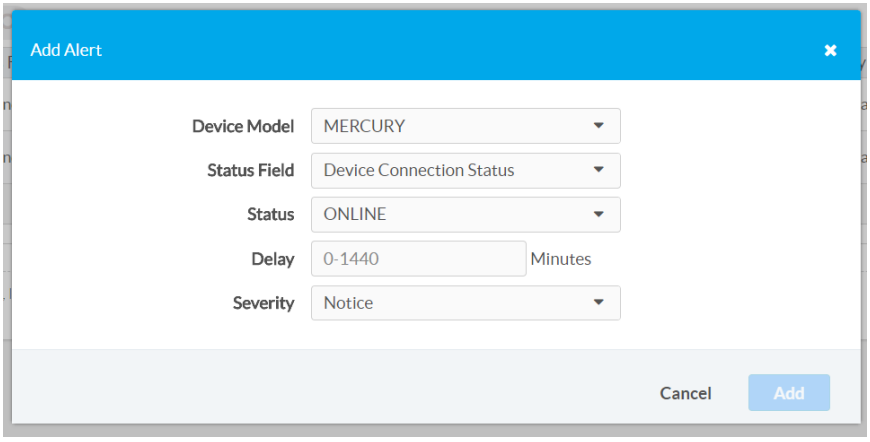
1. Select **Add Alert** from the **Action** drop-down menu.

   Drop-Down Menu with Add Alert Option

   An **Add Alert** dialog box is displayed.

   Add Alert Dialog Box

2. Use the provided text fields and drop-down menus to enter the required information for the alert.

3. Once all information has been entered, select **Add** to add the alert or **Cancel** to cancel adding the alert.

The new alert is displayed in the **Status Fields** section of the **Alerts** page for the selected device type.

Delete an Alert

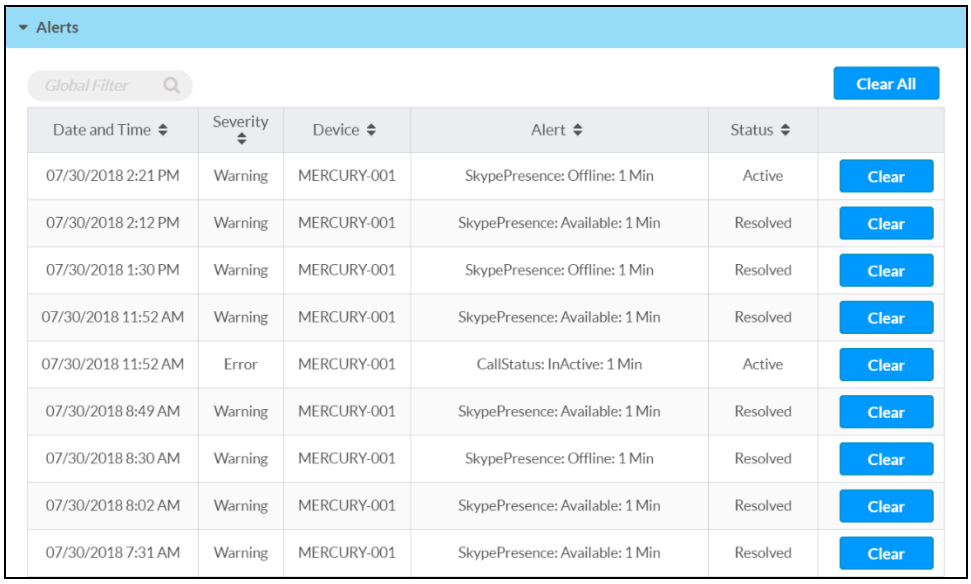
To delete an alert, select the minus button (-) in the **Remove** column for that alert.

View Alerts

In addition to receiving alerts via email or text messages, alerts may also be viewed for individual devices and for groups of devices.

Alerts are accessible from the **Alerts** accordion of the **Status** tab for an individual device or for a group.

Settings Tab – Alerts Accordion



The Alerts section provides the following information in table format:

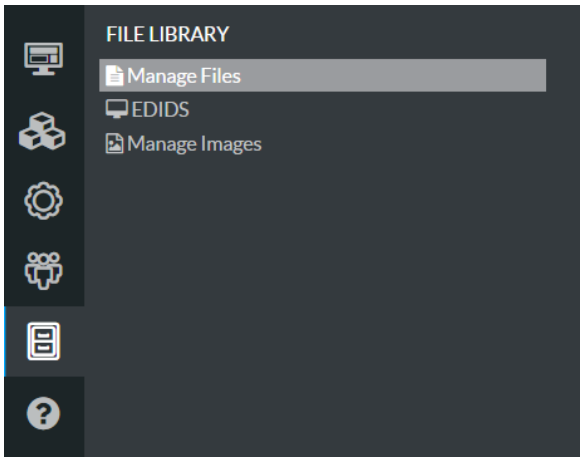
- The date and time the alert was issued
- The severity of the alert
- The device that caused the alert to be issued
- The status field, status, and duration values that triggered the alert
- The status of the alert (An alert changes from **Active** to **Resolved** automatically when the status field value changes to a status other than the one that triggered the alert.)
- A **Clear** button that removes the alert from the log

Select **Clear All** at the top right of the table to clear all listed alerts.

File Library

Various files can be loaded to the XiO Cloud service for use by claimed devices via the File Library selections. Select the **File Upload** button in the navigation menu to display the **FILE LIBRARY** menu.

FILE LIBRARY Menu



The following selections are provided:

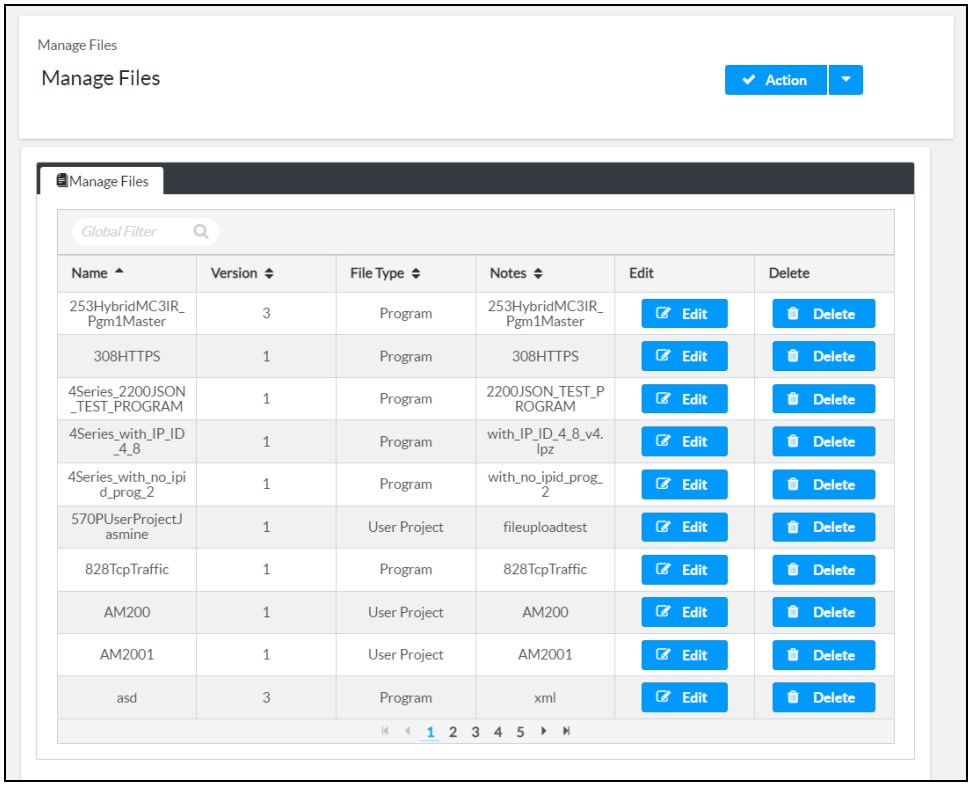
- **Manage Files**: Contains a library of programs and projects for control systems, touch screens, and other devices
- **EDIDs**: Contains a library of Extended Display Identification (EDID) data files for use with display devices
- **Manage Images**: Contains a library of image files for use by various devices

Each menu selection is described in the following sections.

Manage Files

Select **Manage Files** from the **FILE LIBRARY** menu to display the **Manage Files** page.

Manage Files Page



Each loaded program or project file is represented in a table that provides the following information and controls. An **Action** drop-down menu is also provided in the top-right of the page that is used to add program or project files to XiO Cloud.

- **Name**: The program or project name
- **Version**: The version of the program or project
- **File Type**: The program or project file type
- **Notes**: User-provided notes that describe the program or project
- **Edit**: Contains an **Edit** button that is used to edit program or project information (Refer to Edit a Program or Project on page 87 for more information.)
- **Delete**: Contains a **Delete** button that is used to delete the program or project file from XiO Cloud

Enter text in to the **Global Filter** text box to search for and display programs or project files that match the search term(s).

If the table spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page.

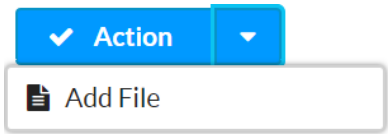
Add a Program or Project

To add a program or project file to XiO Cloud:

> **NOTE:** Only valid program or project files (.cpz, .lpz, .xml, or .zip) can be uploaded. Other file types will be rejected.

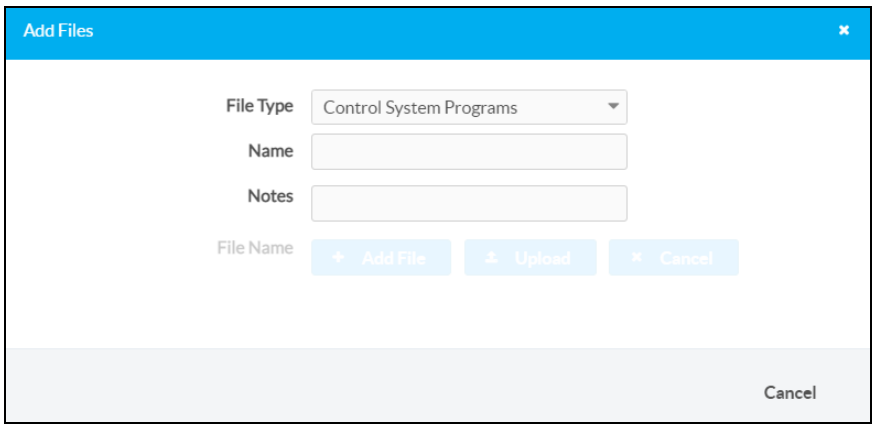
1. Select **Add File** from the **Action** drop-down menu.

   Drop-Down Menu with Add File Option

   The **Add Files** dialog box is displayed.

   Add Files Dialog Box

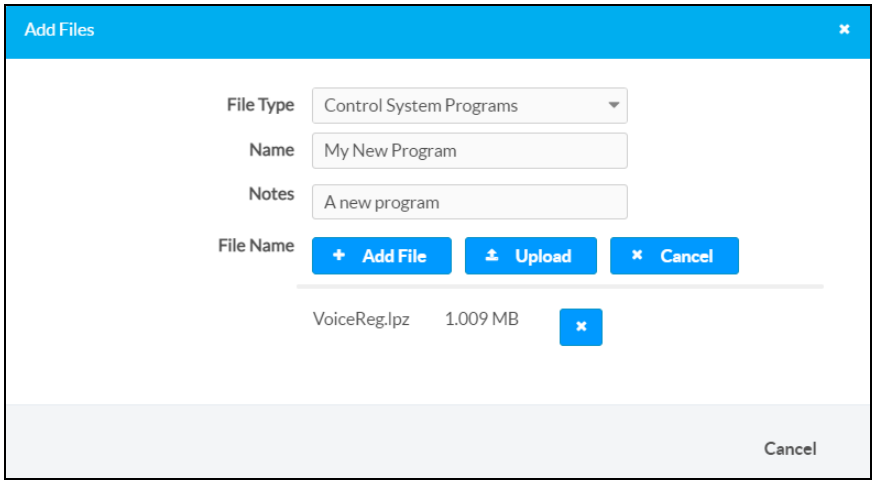
2. Enter the following information about the program or project file:
   - **File Type**: Select one of the supported program or project file types from the drop-down menu:
     - **Control System Programs**
     - **User Project**
     - **Mobility Project**
     - **Web Browser Project**
   - **Name**: Enter a program or project name into the text field.
   - **Notes**: Enter any notes about the program or project into the text field.

   Once the information above is entered, the **+ Add File** button can be selected.

3. Select **+ Add File**, and then navigate to the program or project file on the computer.
4. Select the program or project file, and then select **Open**. The filename and file size is shown after the program or project file is selected.

   > **NOTE:** Select the **x** button to discard the program.

Add Files Dialog Box - File Preview



> **NOTE:** Only compiled program files may be uploaded. The program code must be compiled with a minimum version of the include4.dat file to ensure full compatibility with XiO Cloud. For more information, refer to the respective programming tool help file.

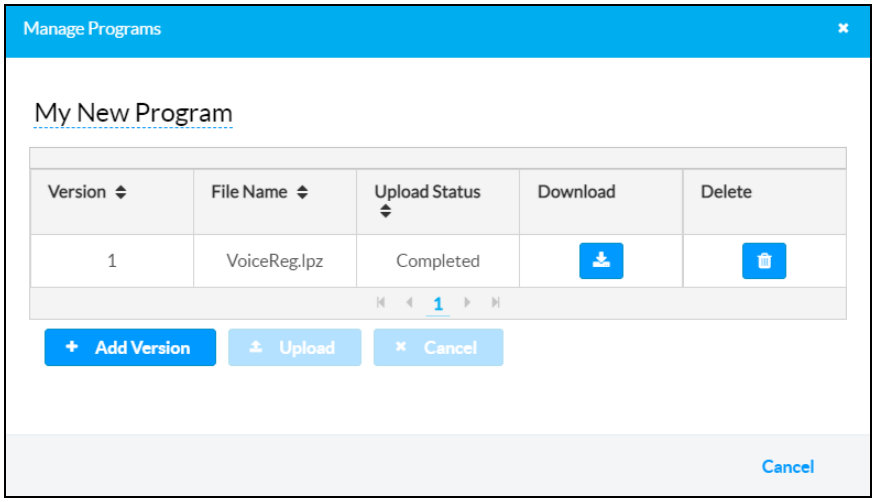
5. Select **Upload**. Growl notifications are displayed when the upload starts and completes.

Upon successful upload, the program or project file is added to the **Manage Files** table.

Edit a Program or Project

To edit an existing program or project file within XiO Cloud, navigate to the program or project file within the **Manage Files** table. Then, select **Edit** within the table row for the file. A **Manage Programs** dialog box is displayed.

Manage Programs Dialog Box



The program or project files are represented in a table that provides the following information and controls. Controls are also provided for adding new versions of the program or project file.

- **Version**: The version of the program or project

> **NOTE:** If there are multiple versions of a program or project file available, each version populates a table row.

- **File Name**: The program or project file name
- **Upload Status**: The upload status of the program or project file
- **Download**: Contains a download button that is used to download the program or project file to a computer.
- **Delete**: Contains a delete button that is used to delete the program or project file from XiO Cloud

If the table spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page.

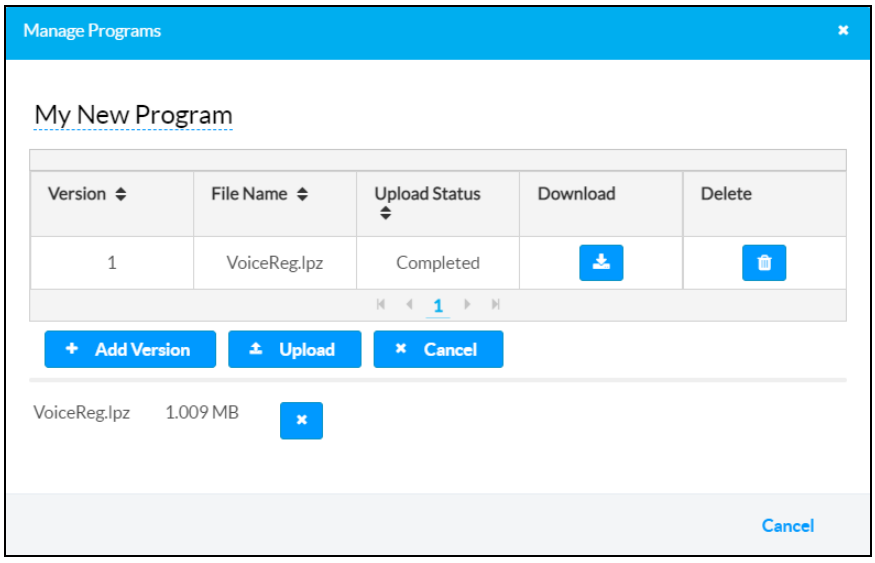
To edit the program or project name, select the program or project name on the top-left of the dialog box. A text field is displayed where the name can be edited. Select the green check button to save any changes.

To add a new version of the program or project file:

1. Select **+ Add Version**, and then navigate to the program or project file on the computer.
2. Select the program or project file, and then select **Open**. The filename and file size are shown after the program or project file is selected.

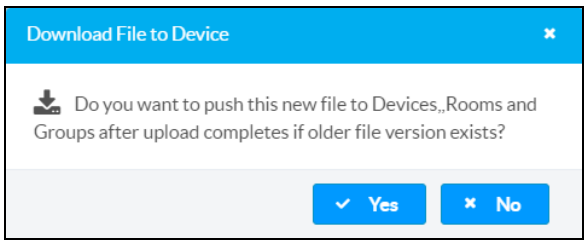
> **NOTE:** Select the **x** button to discard the program.

Manage Programs Dialog Box - File Preview



> **NOTE:** Only compiled program files may be uploaded. The program code must be compiled with a minimum version of the include4.dat file to ensure full compatibility with XiO Cloud. For more information, refer to the respective programming tool help file.

3. Select **Upload**. A **Download File to Device** dialog box is displayed asking whether the new program or project version should be pushed to devices, rooms, or groups running the older file version.

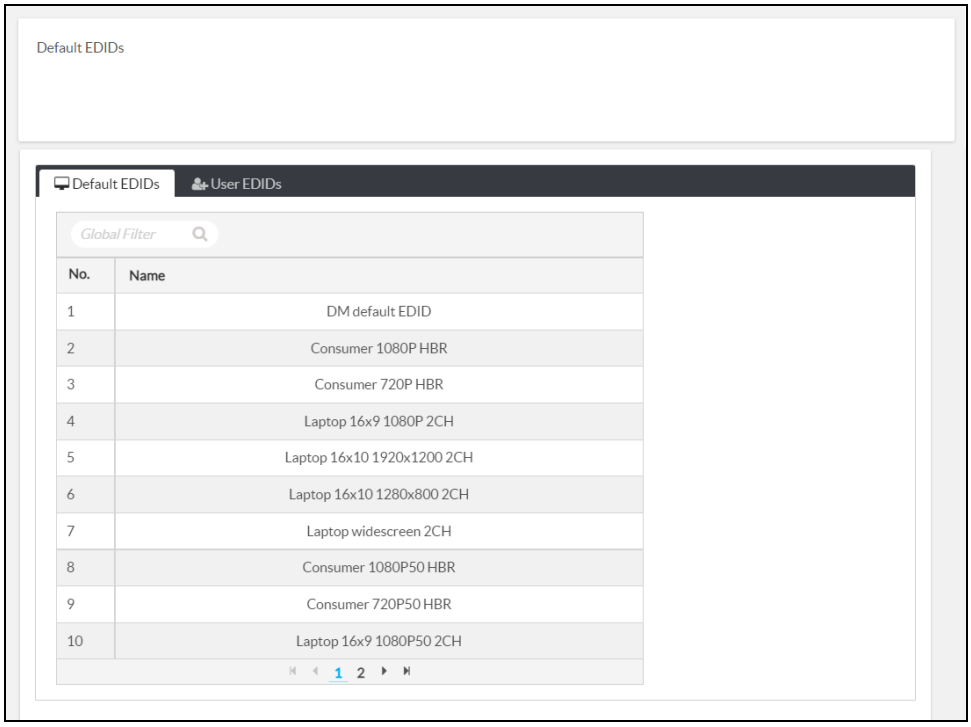


4. Make a selection to start the upload. The new file version is added to the **Manage Programs** table. The **Upload Status** changes from "In Progress" to "Completed" once the new file version is uploaded successfully.

EDIDs

Select **EDIDs** from the **FILE LIBRARY** menu to display the EDIDs page.

EDIDs Page



The EDIDs page is divided into two sections that can be accessed by selecting the respective tab at the top of the page:

- **Default EDIDs**: Provides a collection of default EDID data files (in CEDID format) for common display device configurations
- **User EDIDs**: Provides a collection of custom EDID data files (in CEDID format) and supports uploading new EDID data files

Enter text in to the **Global Filter** text box to search for and display EDID data files that match the search term(s).

If the table spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page.

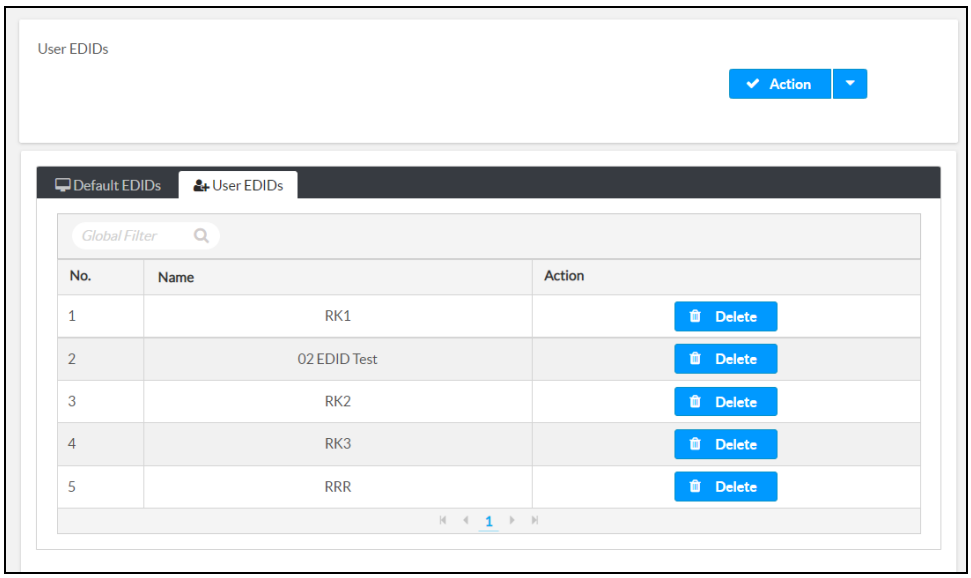
Add a Custom EDID File

To upload a custom EDID data file (in CEDID format) to XiO Cloud:

> **NOTE:** Only valid CEDID files can be uploaded. Other file types will be rejected.

1. Select the **User EDIDs** tab to display the User EDIDs page.

   EDIDs Page - User EDIDs

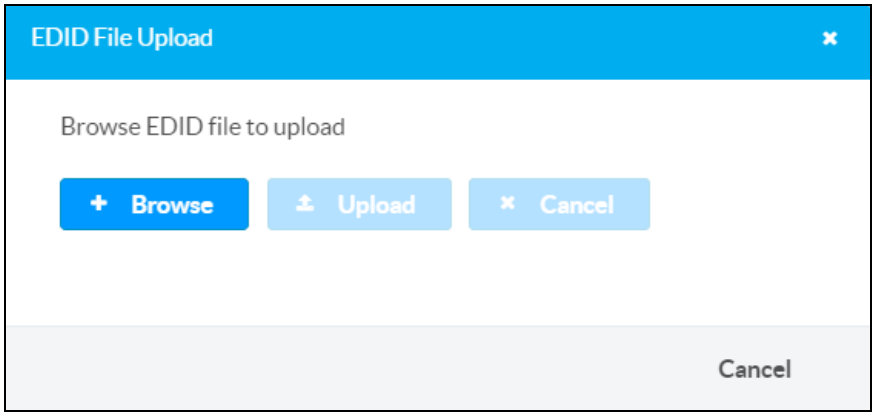


2. Select **Add EDID** from the **Action** drop-down menu.

   Drop-Down Menu with Add EDID Option

   The **EDID File Upload** dialog box is displayed.

   EDID File Upload Dialog Box



3. Select **+ Browse**, and then navigate to the CEDID file on the computer.
4. Select the CEDID file, and then select **Open**. The filename and file size are shown after the CEDID file is selected.

   > **NOTE:** Select the **x** button to discard the CEDID file.

5. Select **Upload**. Growl notifications are displayed when the upload starts and completes.

Upon successful upload, the EDID data file is added to the User EDIDs table.

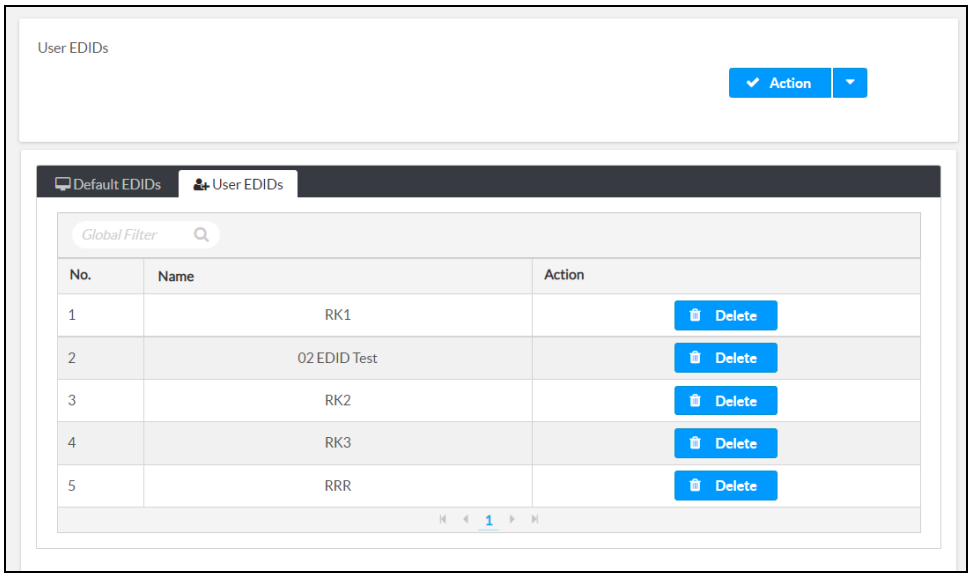
Delete a Custom EDID File

To delete a custom EDID file from XiO Cloud:

> **NOTE:** The default EDID files provided by XiO Cloud cannot be deleted.

1. Select the **User EDIDs** tab to display the User EDIDs page.

   EDIDs Page - User EDIDs

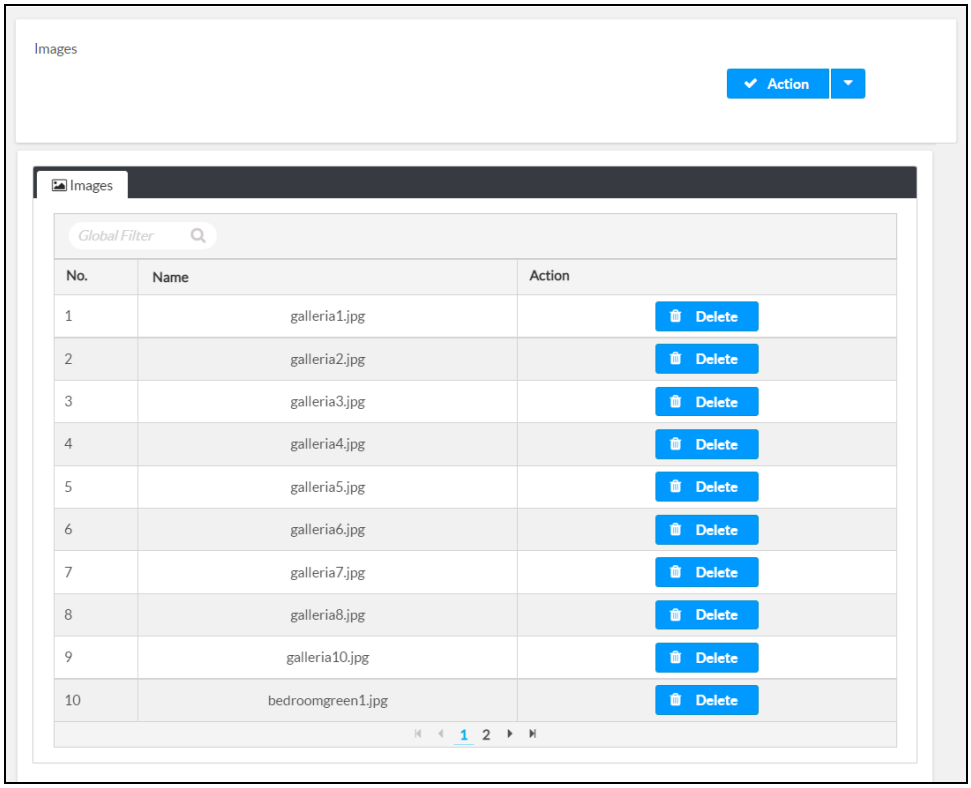


2. Navigate to the file within the User EDIDs table.
3. Select **Delete** from the corresponding table row. A dialog box is displayed confirming the deletion.
4. Select **Yes** to delete the file.

Manage Images

Select **Manage Images** from the **FILE LIBRARY** menu to display the Images page.

Images Page



Each loaded image file is represented in a table that provides the following information and controls. An **Action** drop-down menu is also provided in the top-right of the page that is used to add image files to XiO Cloud.

- **No.**: The image file number within XiO Cloud (determined by the upload order)
- **Name**: The image filename
- **Action**: Contains a **Delete** button that is used to delete the image file from XiO Cloud

Enter text in to the **Global Filter** text box to search for and display image files that match the search term(s).

If the table spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page.

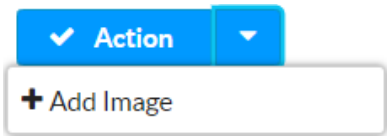
Add an Image File

To upload a custom image file to XiO Cloud:

> **NOTE:** Only valid image files can be uploaded. Other file types will be rejected.

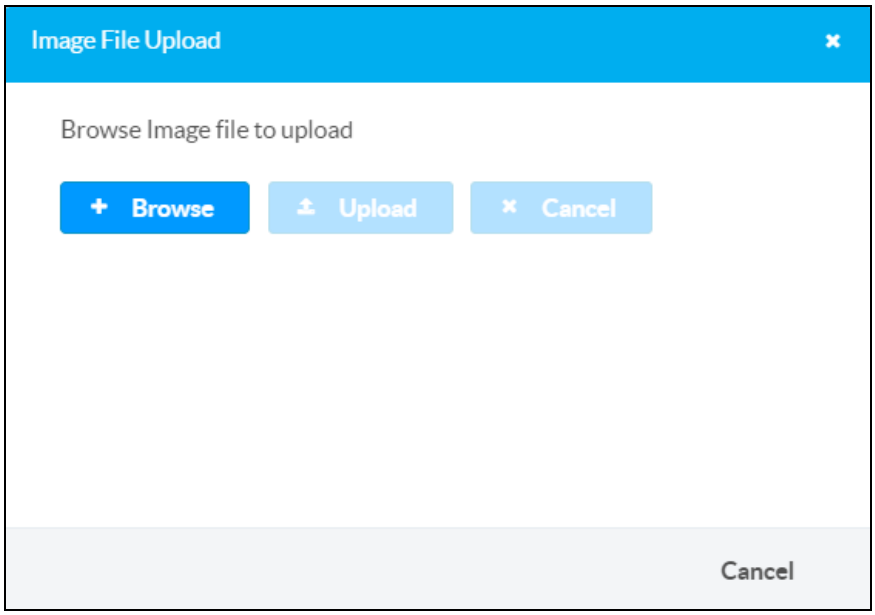
1. Select **Add Image** from the **Action** drop-down menu.

   Drop-Down Menu with Add Image Option

   The **Image File Upload** dialog box is displayed.

   Image File Upload Dialog Box

2. Select **+ Browse**, and then navigate to the image file on the computer.
3. Select the image file, and then select **Open**. The filename, file size, and a thumbnail preview of the image are shown after the image file is selected.

   > **NOTE:** Select the **x** button to discard the image file.

4. Select **Upload**. Growl notifications are displayed when the upload starts and completes.

Upon successful upload, the image file is added to the Images table.

Delete an Image File

To delete an image file from XiO Cloud:

1. Navigate to the file within the Images table.
2. Select **Delete** from the corresponding table row. A dialog box is displayed confirming the deletion.
3. Select **Yes** to delete the file.

Load a Program to a Control System

The XiO Cloud service provides controls for uploading a program file to a 3-Series® or 4-Series™ control system. Once a program has been uploaded to the XiO Cloud environment, it may be pushed to any number of control systems that have been claimed by the service.

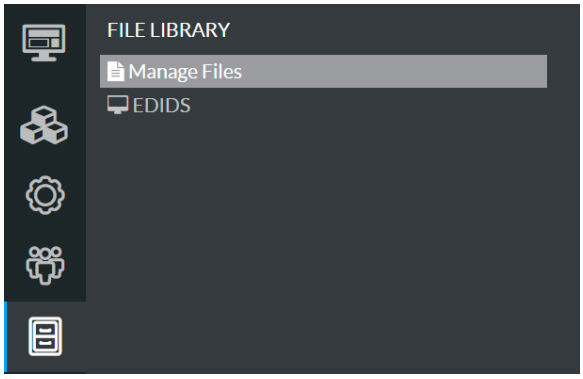
> **NOTE:** Program details will not be maintained in XiO Cloud when downgrading to an earlier 3-Series firmware version (such as 1.503.0070).

Upload a New Program

To upload a new program to the XiO Cloud environment:

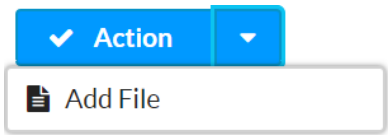
1. Select the **File Upload** button in the navigation menu to display the **FILE LIBRARY** menu.

   FILE LIBRARY Menu

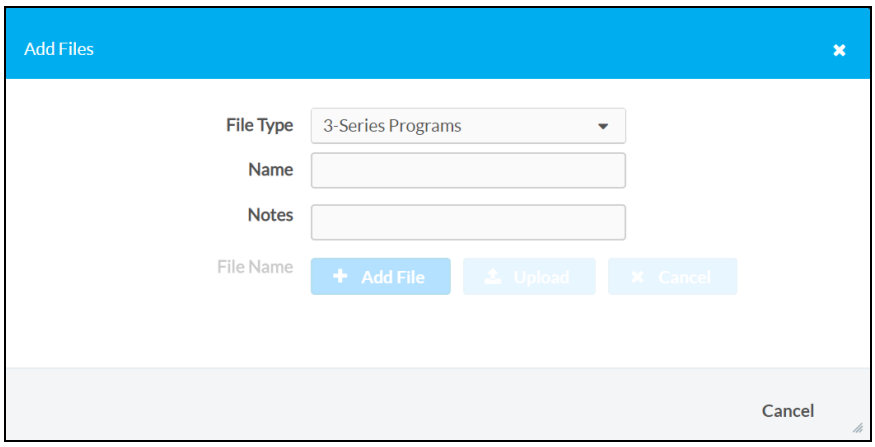
2. Select **Add File** from the **Action** drop-down menu.

   Drop-Down Menu with Add File Option

The **Add Files** dialog box is displayed.

Add Files Dialog Box

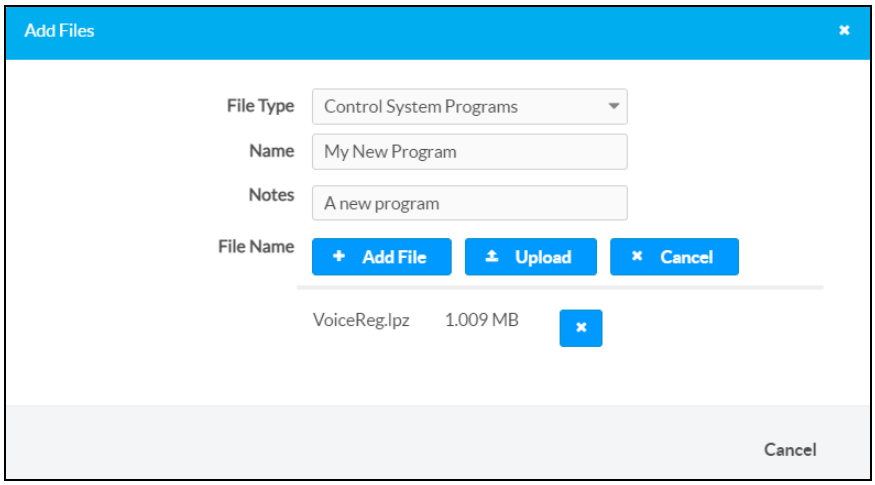


3. Enter the following information about the program:
    - **File Type**: Select **Control System Programs** from the drop-down menu
    - **Name**: Enter a name for the program.
    - **Notes**: Enter any notes about the program.

    Once the information above is entered, the **+ Add File** button can be selected.
4. Select **+ Add File**, and then navigate to the program file on a connected computer.
5. Select the program file, and then select **Open**. The filename and file size of the program is shown after the program is selected.

> **NOTE:** Select the **x** button to discard the program.

Add Files Dialog Box - Program Preview

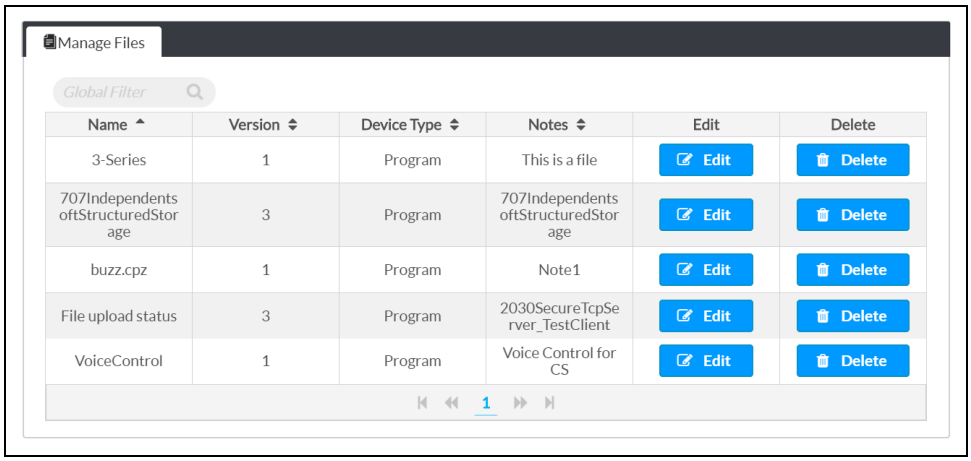


> **NOTE:** Only compiled programs may be uploaded. The program code must be compiled with a minimum version of the include4.dat file to ensure full compatibility with XiO Cloud. For more information, refer to the respective programming tool help file.

6. Select **Upload**. A window showing the status of the upload is displayed.

Upon successful upload, the program file is added to the **Manage Files** table on the right side of the screen.

Manage Files Table



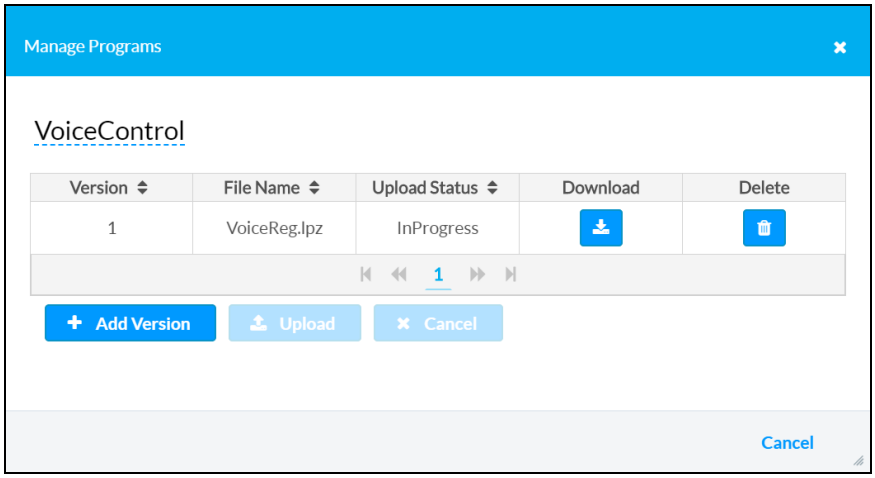
Manage Programs

Use the **Manage Files** table to manage program files after they have been uploaded to the XiO Cloud environment.

Edit a Program

Select **Edit** next to a program file to edit that program file. A **Manage Programs** dialog box is displayed.

Manage Programs Dialog Box



The **Manage Programs** dialog box provides the following information about the program in table format:

- The program version
- The program filename
- The status of the program upload
- Controls to download or delete the program file

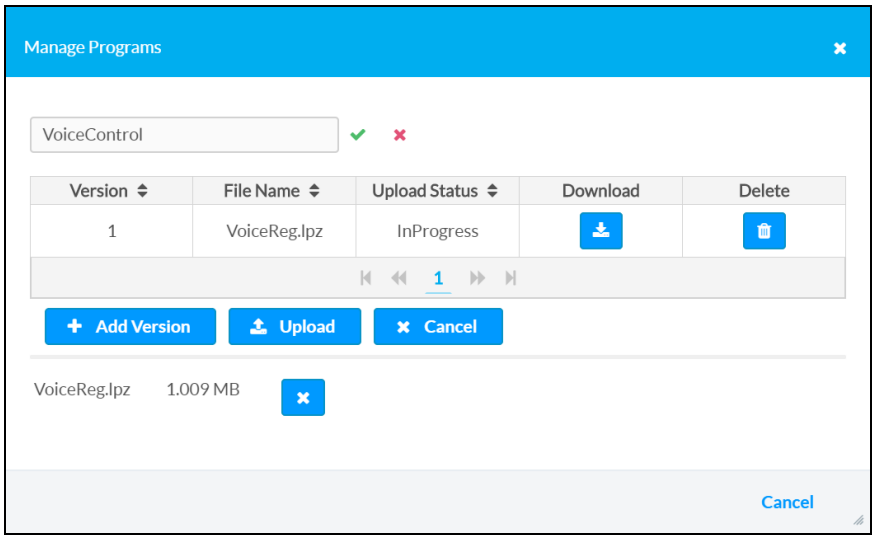
To edit the program name, click the program name in the top left corner of the dialog box. The program name becomes an editable text box. Select the green check icon or press **Enter** to save the new program name. Select the red **x** icon to discard the changes.

To add a new version of the program file:

1. Select **+ Add Version**, and then select an updated version of the program from the host computer.

   The filename and file size of the program is shown after the program is selected. Select the **x** button to discard the program.

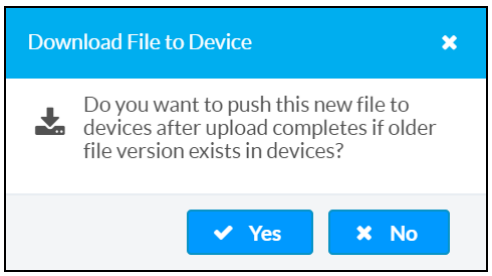
   Manage Programs Dialog Box - Program Preview



2. Select **Upload**.

   A message window is displayed asking whether the updated program file should be pushed to all devices running the older program file.

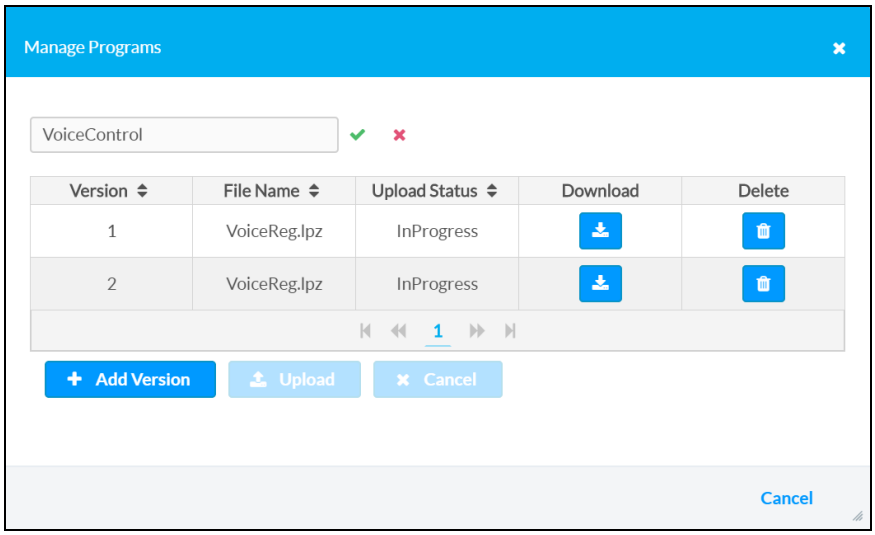
   Download File to Device Window



3. Select **Yes** to push the program file to all applicable devices, or select **No** to upload the file without pushing the program to the devices.

Upon successful upload, the new program file is added to the **Manage Programs** table with the latest iteration of the version number. All previous versions of the program file are retained in this table unless they are deleted manually.

Manage Programs Dialog Box - New Program Version Uploaded



Select the **x** button or **Cancel** to exit the **Manage Programs** dialog box.

Delete a Program

Select **Delete** next to a program file to delete that program file. A message window is displayed asking whether the program file should be deleted.

Select **Yes** to delete the program file or **No** to cancel the deletion.

> **NOTE:** If multiple versions of a program file have been uploaded, all program file versions will be deleted.

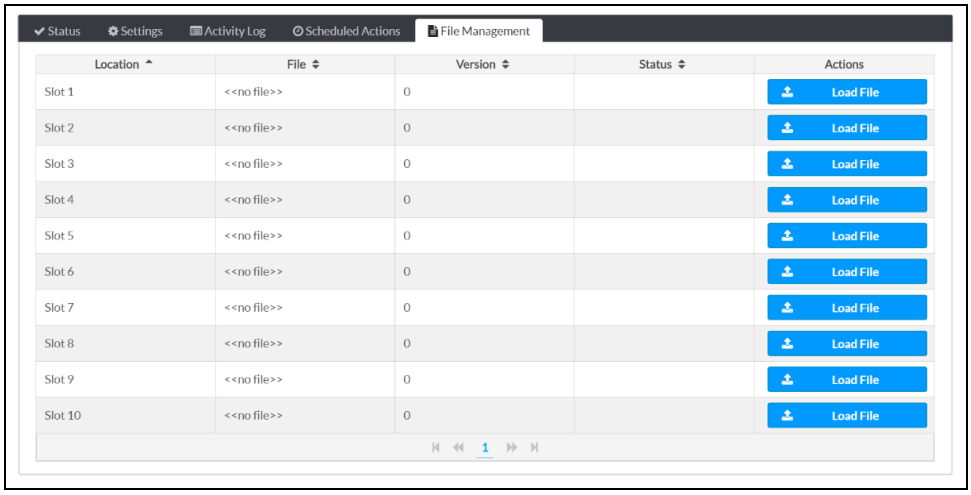
Load a Program to Device

Once a program is uploaded to the XiO Cloud environment, it may be loaded to any number of claimed 3-Series or 4-Series control systems within the environment.

To load a program to a control system:

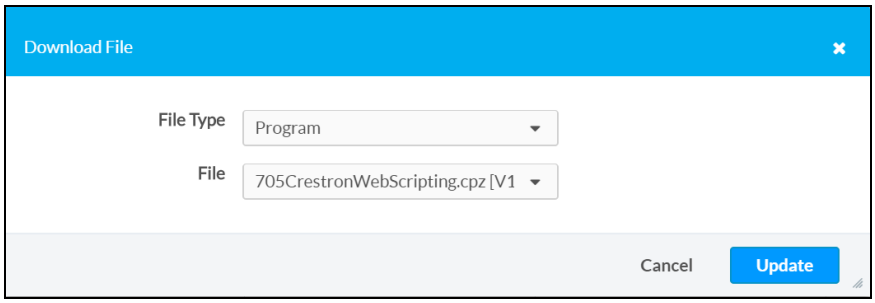
1. Select the dashboard icon on the left side of the screen.
2. Select the desired control system from the group tree to display its configuration page.
3. Select the **File Management** tab. A table showing all of the device's program slots is displayed.

   File Management Tab



4. Select **Load File** next to the desired program slot. The **Download File** dialog box is displayed.

   Download File Dialog Box

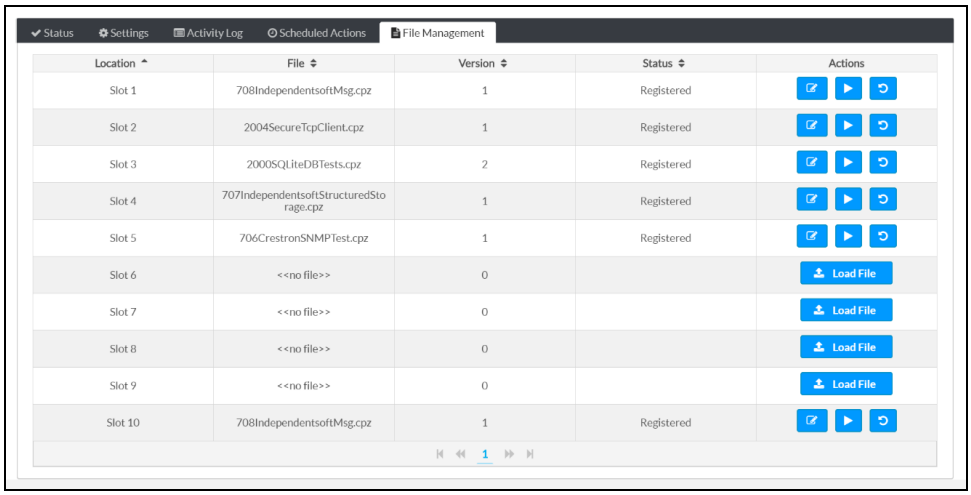


5. Enter the following information about the program file:
    - **File Type**: Select **Program** from the drop-down menu.
    - **File**: Select the uploaded program file from the drop-down menu. The program version is displayed to the left of the program file name.
6. Select **Update**. The program file is pushed to the chosen program slot of the control system.

Manage a Loaded Program

Use the **File Management** table to manage program files after they have been loaded to a 3-Series or 4-Series control system.

File Management Tab



The **File Management** table displays the following information for each program slot:

- **Location**: The program slot of the control system
- **File**: The name of the program file loaded to the control system
- **Version**: The program file version

    > **NOTE:** The **Version** column for a loaded program will also note if a newer version of the program was loaded to XiO Cloud but has not yet been loaded to the device.

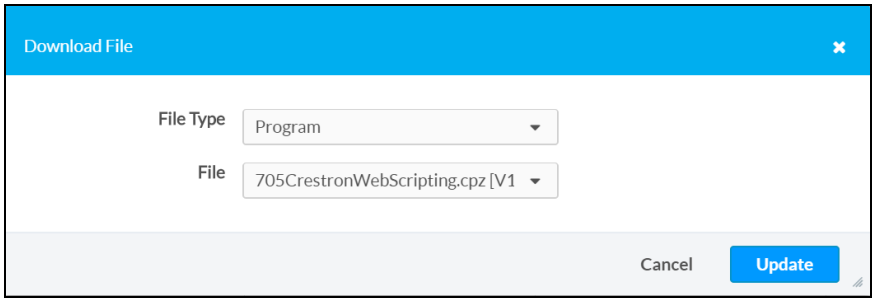
- **Status**: The registration status of the program file
- **Actions**: Controls to load a program file to the program slot or to manipulate a loaded program

Edit a Loaded Program

Select the edit button next to a loaded program file in the **Actions** column to edit the program file.

The **Download File** dialog box is displayed.

Download File Dialog Box



The following program file information may be edited:

- **File Type**: Use the drop-down menu to select the file type (**Program**)
- **File**: Use the drop-down menu to select a program file to load to the program slot.

Once all changes have been made, select **Update**. The updated program file is pushed to the chosen program slot of the control system. Select **Cancel** to cancel any changes.

Start/Stop a Loaded Program

Select the play button next to a loaded program file in the **Actions** column to start the program file. A growl notification is displayed stating that the program start command has been sent to the control system, and that there may be a small delay before the program starts.

If a program is running, select the stop button in the **Actions** column to stop the program. A growl notification is displayed stating that the program stop command has been sent to the control system, and that there may be a small delay before the program stops.

Unregister a Loaded Program

Select the circular arrow button next to a loaded program in the **Actions** column to unregister a program from the control system. A growl notification is displayed stating that the program unregister command has been sent to the control system, and that there may be a small delay before the program is unregistered.

Remote Control

Remote control functionality allows the display of a supported user control device (such as TSW-60 series touch screens, TSW-70 series touch screens, Crestron Mercury® video conference systems series, Crestron Mercury X series, and Crestron Mercury Mini series) to be viewed and controlled within XiO Cloud. Users can control the user interface directly by clicking on the virtual display, which mirrors the touch controls on the physical device.

Remote control functionality supports any programs that can run on the user control device, including custom user projects, Crestron scheduling, and partner applications. Users also have full control of the capacitive hard buttons on the user interface (if present).

> **NOTE:** Remote control for room-based accounts requires purchase of one SW-XIOC-S license per room.

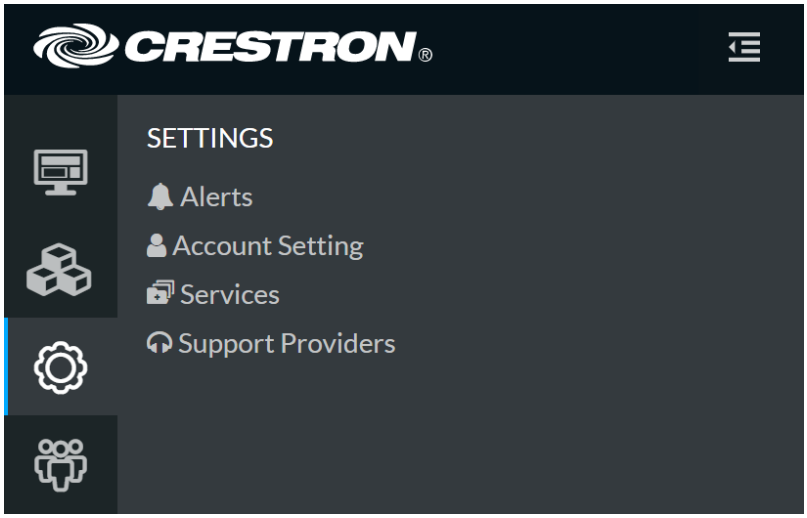
Enable Remote Control

A global administrator must enable remote control for the XiO Cloud account before users can access the functionality.

To enable remote control for an account:

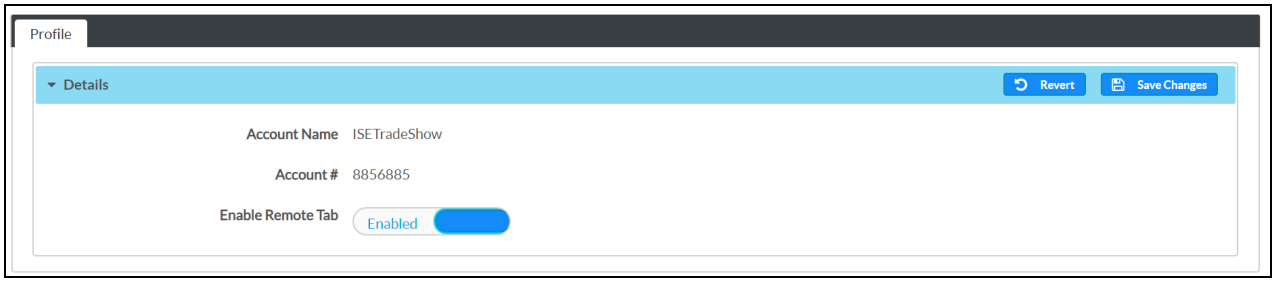
1. Select the gear icon on the left side of the screen.
2. Select **Account Setting**.

SETTINGS Menu



3. Within the **Profile** tab on the right side of the screen, turn on the **Enable Remote Tab** toggle.

Profile Tab



4. Tap **Save Changes** on the top right of the screen.

Request Remote Control Access

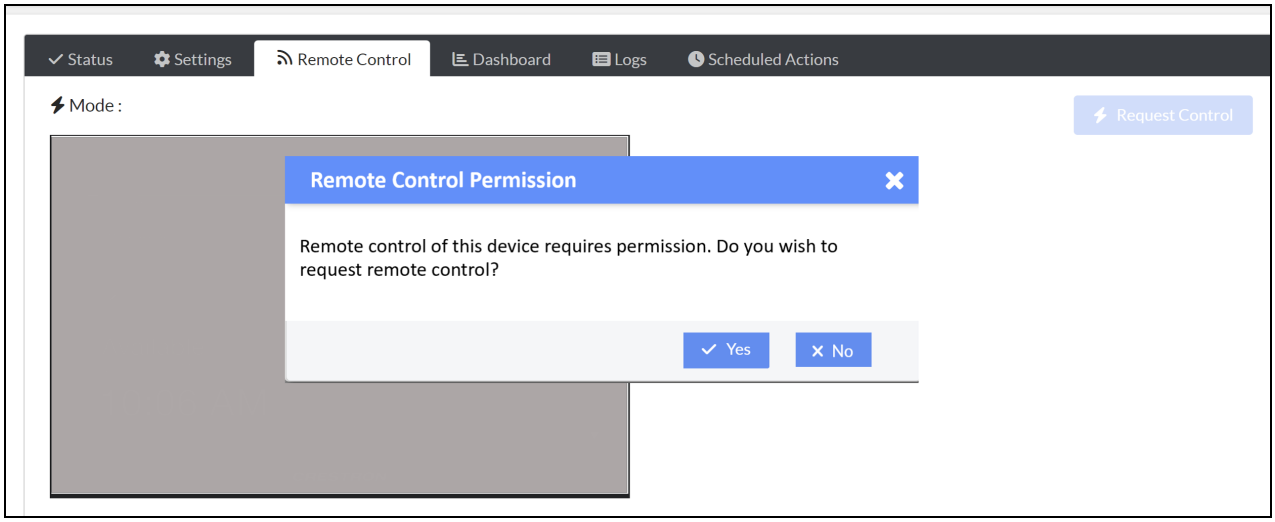
Certain device families (such as Crestron Flex phones) require a local user to approve the remote control request before access is granted. The following sections describe the procedures and work flows associated with requesting remote control access.

Initiate a Request

To initiate a remote control request from XiO Cloud:

1. Navigate to the user control device that supports remote control functionality.
2. Select the **Remote Control** tab on the right side of the screen. A **Remote Control Permission** dialog box is displayed.

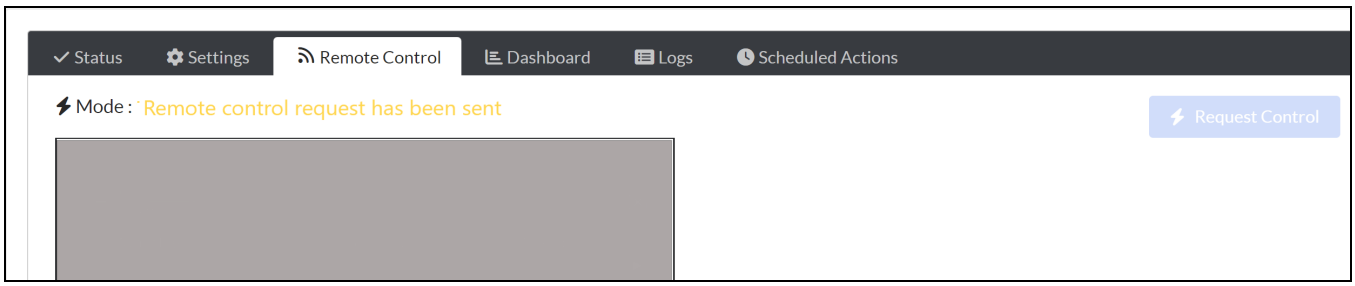
Remote Control Permission Dialog Box



3. Select **Yes** to initiate the remote control request. Selecting **No** closes the dialog box without sending the request, and the user must navigate back to the **Remote Control** tab to display the dialog box again.

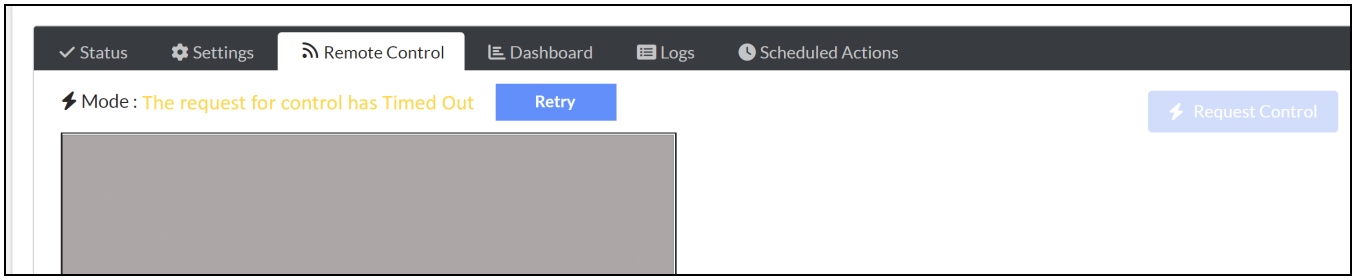
After initiating the request, the **Mode** status changes to **Remote control request has been sent**. The remote user must wait until a local user accepts or denies the request as described in Accept or Decline the Request on page 106.

Remote control request has been sent Mode



If a local user does not respond to the remote request within 30 seconds, the **Mode** status changes to **The request for control has Timed Out**, and a **Retry** button is displayed next to the **Mode**. Select **Retry** to resend the remote control request. There is no limit to the number of retries that can be sent.

The request for control has Timed Out Mode

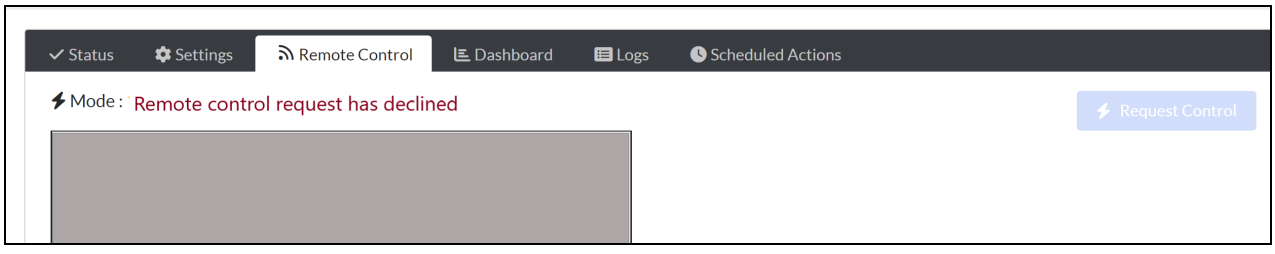


Accept or Decline the Request

After a remote control request is initiated, the user control device prompts a local user to accept or decline the request via a pop-up window.

- If the local user accepts the request, the **Mode** status changes to **View**, and the **Request Control** button can be selected. Refer to View a User Interface on page 107 and Control a User Interface on page 108 for more information.
- If the local user declines the request, the **Mode** status changes to **Remote control request has declined**, and no remote control functionality is provided. The remote user can retry the remote control request as described in Initiate a Request on page 105.

  Remote control request has declined Mode

End a Remote Control Session

The local user can end an active remote control session at any time by selecting **End Remote Support Session** on the user control device. The **Mode** status within XiO Cloud changes to **Remote control Session has ended**, and remote control functionality is no longer provided.

A remote control session times out after one hour. At that time, the local user is prompted to continue or end the session via a pop-up window on the user control device.

- If the local user selects **Continue**, the remote session continues without any interruption.
- If the local user selects **End**, the **Mode** status within XiO Cloud changes to **Remote control Session has ended**, and remote control functionality is no longer provided.
- If the local user does not respond to the prompt, the remote session times out and remote control functionality is no longer provided.

View a User Interface

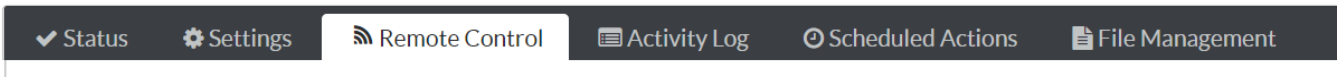
Users can view a connected user interface once remote control is enabled for the XiO Cloud account.

> **NOTE:** To access user control devices within a group, users must have **Tech** access or above.

To view a connected user interface:

1. Navigate to the user control device that supports remote control functionality.
2. Select the **Remote Control** tab on the right side of the screen.
3. If prompted, initiate a remote control request as described in Request Remote Control Access on page 105.

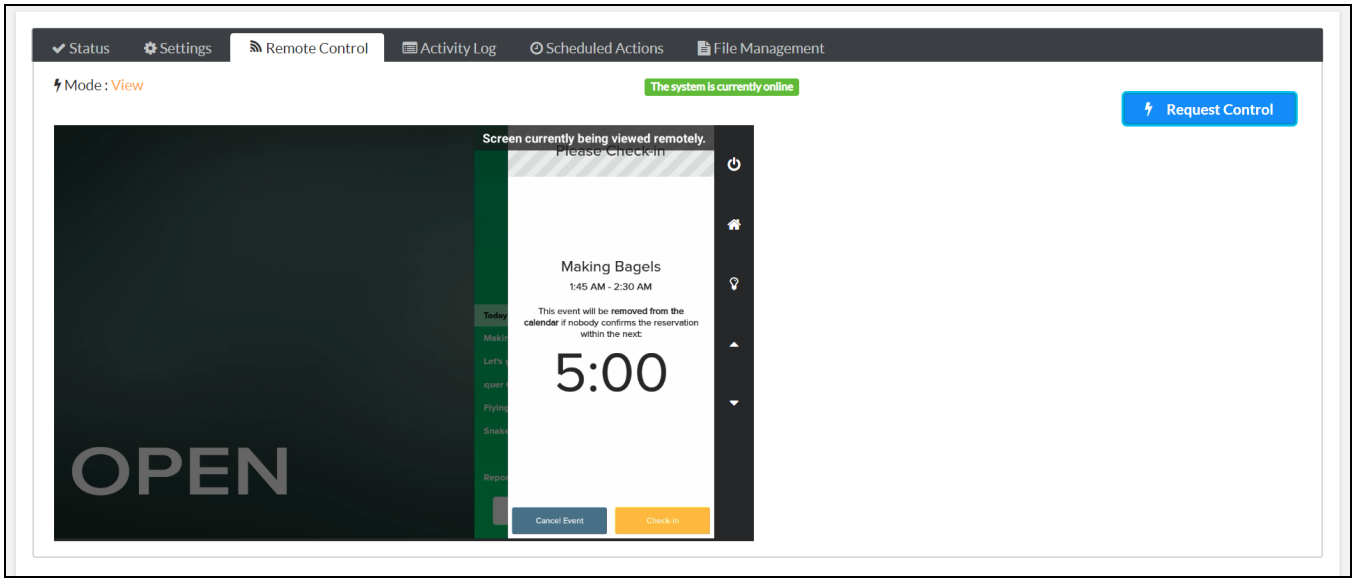
Remote Control Tab



> **NOTES:**
>
> - Remote control is available only on the device level.
> - The **Remote Control** tab is shown only if the user control device has been upgraded to a firmware version that supports this functionality. The device firmware can be updated directly through XiO Cloud if necessary.

The content that is currently displayed on the user interface is shown as an image in the **Remote Control** tab.

Remote Control Tab – User Interface (View Mode)



By default, the user interface is placed in **View** mode, which is indicated in the top left of the screen.

- The image of the remote user interface is updated approximately every five seconds.
- If the remote user interface is viewed for 15 minutes without any other activity occurring on the page, the image stops updating automatically. Refresh the page in the browser to resume viewing the user interface in real time.

Control a User Interface

To take control of a user interface:

1. Navigate to the user control device that supports remote control functionality.
2. Select the **Remote Control** tab on the right side of the screen.
3. If prompted, initiate a remote control request as described in Request Remote Control Access on page 105.
4. Select **Request Control** on the top right of the screen.

> **NOTE:** Only one user can control a remote user interface at any time. If another user requests control, the current user controlling the display is placed back in **View** mode. Users controlling the physical user interface are not affected by remote usage.

Within a few seconds, the mode switches from **View** to **Control**, and the **Request Control** button changes to a **Release Control** button.

While in **Control** mode, select anywhere on the virtual user interface, including capacitive hard buttons (if present), to send a virtual touch command to the device.

NOTE: If the user control device is in standby mode, a black screen is displayed. Click the remote screen once to wake the user control device. Normal control can resume once the image updates to show the remote user interface.

To stop controlling the user control device, select **Release Control**. The user control device, returns to **View** mode.

Privacy Considerations

Remote control functionality was designed with privacy considerations in mind.

- The remote control functionality must be enabled by a Global Administrator before it can be used.
- To access user interfaces within a group, users must have **Tech** access or above.
- Whenever a user is viewing or controlling the user interface remotely, a "Screen currently being viewed remotely" message is displayed on the physical device.
- The activity log is updated to record whenever a user starts and stops viewing or controlling a user interface.
- Remote control access can be disabled entirely on a user interface by issuing the `REMOTECONTOL DISABLE` console command in Crestron Toolbox™ software.
- No images from the user interface are stored on Crestron servers longer than is necessary to display them, and no images are accessible by Crestron staff.

Enable API Access

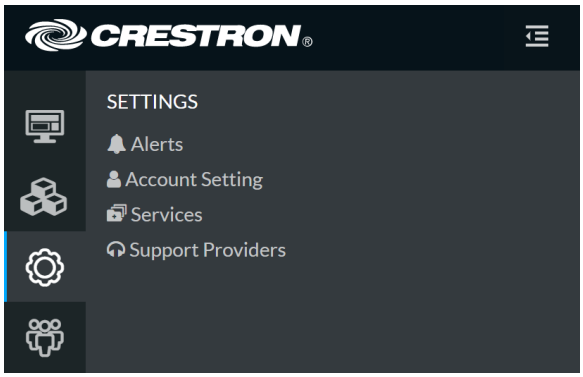
Users with Global Administrator permissions can enable the XiO Cloud REST API functionality directly from the XiO Cloud portal. For room-based accounts, enabling API access requires purchase of a SW-XIOC-API license for the account.

The XiO Cloud REST API binds to the XiO Cloud server as a new transport interface (much like a direct transport interface or a serial join interface). The REST API layer provides a translation from the XiO Cloud server. Web server requests are stateless, and all stateful information is maintained between the XiO Cloud REST API layer and account, group, and device data. For more information, refer to the XiO Cloud Service API microsite at https://developer.crestron.com.

To enable API access from the portal:

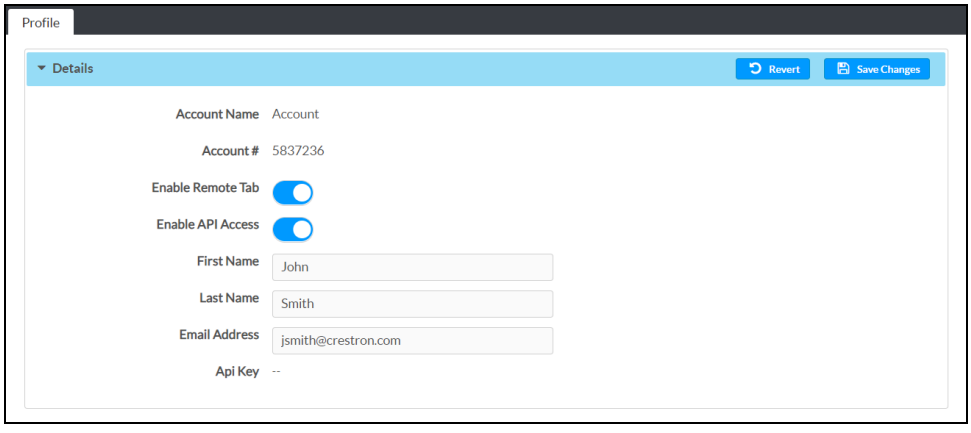
1. Select the gear icon on the left side of the screen.
2. Select **Account Setting**.

   SETTINGS Menu



3. Within the **Profile** tab on the right side of the screen, expand the **Details** accordion, then turn on the **Enable API Access** toggle.

   Profile Tab - Details Accordion



4. Enter the administrator's name and email address in the appropriate text fields.

5. Tap **Save Changes** on the top right of the accordion. An API authentication key is displayed next to **Api Key**.

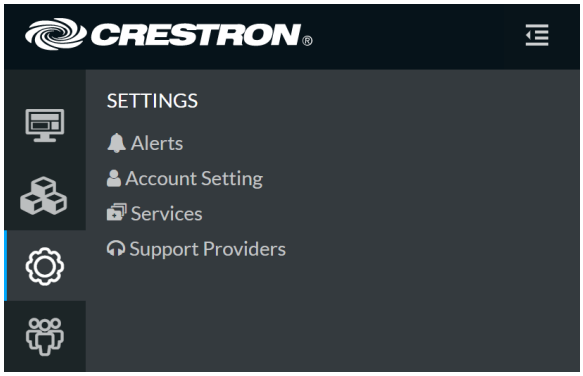
Manage Support Providers

The **Support Providers** feature allows customers to grant account access to Authorized Resellers and Crestron Service Providers (together, Authorized Support Providers). Once a support provider is granted access, the provider can view and manage the account as specified by the Global Administrator in the customer account. Customers can revoke a support provider's access to their account at any time.

> **NOTE:** Support providers must create an XiO Cloud Management Portal account to access customer accounts as described in the XiO Cloud Management Portal User Guide. Once the customer grants a support provider access to their account, portal account users that have been authorized to access the account will be added automatically as **Standard Users** with **Viewer** permissions. These permissions can be elevated by the customer Global Administrator as described in Manage User Access on page 65.

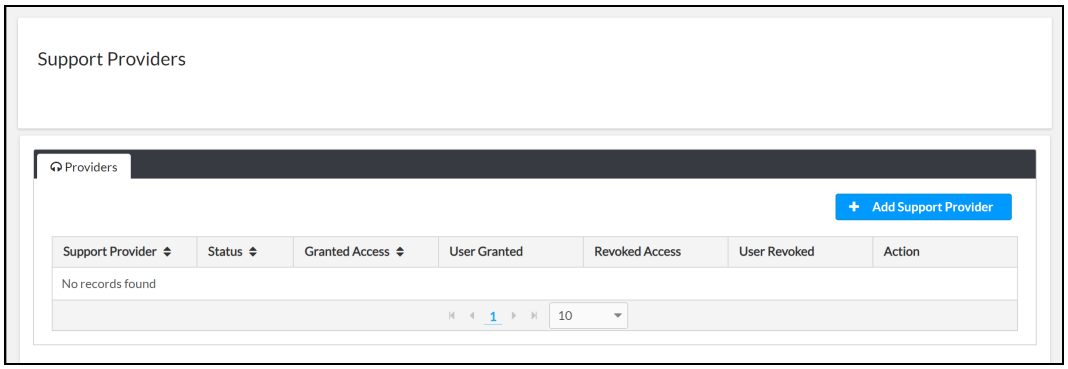
The **SETTINGS** menu for managing support providers is located in the user management panel, which may be accessed by clicking the **Settings** button in the navigation menu.

Settings – Support Providers Option



Select **Support Providers** in the **SETTINGS** menu. A **Support Providers** page is displayed to the right of the **SETTINGS** menu.

Support Providers Page



Support providers are organized by name and displayed within a table. Support provider access can be granted or revoked using the functions in this page.

Add a Support Provider

To add a new support provider to the customer account:

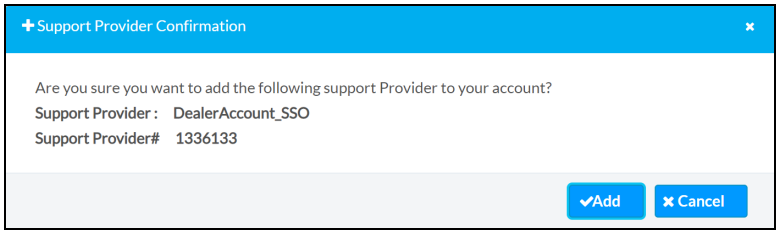
1. Select **+ Add Support Provider** at the top right of the page. The **Add Support Provider** dialog box is displayed.

   Add Support Provider Dialog Box

2. Enter a valid seven-digit support provider ID into the **Support Provider#** text field. This number will be provided by your Authorized Support Provider.
3. Select **Add**. A **Support Provider Confirmation** dialog box is displayed to confirm whether the support provider should be added.

   Support Provider Confirmation Dialog Box

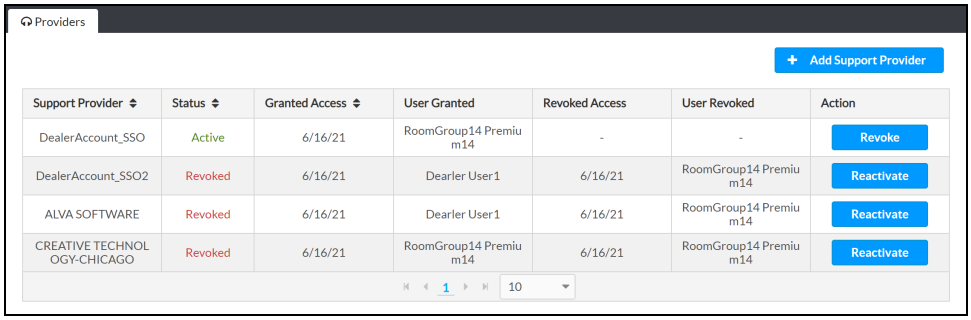
   

4. Select **Add**. The support provider is added to the table within the **Support Providers** page.

Manage Support Providers

Once support providers have been added as described in Add a Support Provider on page 113, they can be managed using the provided table.

Support Providers Table



If the support provider table spans multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page. Certain columns also provide arrow controls in the heading row that sorts the table by the data in those columns.

The following information and controls are provided for each listed room:

- **Support Provider**: The name of the Authorized Support Provider account.
- **Status**: The status of the Authorized Support Provider account within the customer account.
    - **Active**: Indicates that the Authorized Support Provider is currently authorized to access the customer account.
    - **Revoked**: Indicates that access to the customer account for the Authorized Support Provider has been revoked.
- **Granted Access**: The date when the Authorized Support Provider was granted access to the customer account.
- **User Granted**: The customer account user that granted account access to the Authorized Support Provider.
- **Revoked Access**: The date when the Authorized Support Provider's access to the customer account was revoked (if applicable).
- **User Revoked**: The customer account user that revoked account access from the Authorized Support Provider.
- **Action**: Provides an action button based on the Authorized Support Provider account status:
- **Revoke**: If the Authorized Support Provider has been granted access to the customer account, select **Revoke** to revoke their access to the customer account.
- **Reactivate**: If the Authorized Support Provider's customer account access has been revoked, select **Reactivate** to reactive their access to the customer account.

FAQs

This topic provides answers to frequently asked questions regarding the XiO Cloud service.

What is the XiO Cloud service?

The XiO Cloud service is a device management software as a service (SaaS). The XiO Cloud service allows all supported Crestron devices and certain supported third-party devices across an enterprise to be managed and configured from one central, secure location in the cloud. The XiO Cloud service may be used to view the status of a device, to configure various device and network settings, to manage licenses, and to update device firmware. After enrolling in the service, the XiO Cloud portal can be accessed at portal.crestron.io.

For more details and additional resources, refer to https://www.crestron.com/xiocloud.

What devices are supported by the XiO Cloud service?

For a list of supported Crestron devices, refer to the **Specifications** tab on any of the XiO Cloud product pages at www.crestron.com.

What minimum device firmware versions are required to connect to the XiO Cloud service?

The following table provides minimum firmware versions that must be running on a supported device in order for the device to connect to the XiO Cloud service.

> **NOTE:** If a supported device is not listed in the table below, then it does not have a minimum firmware version that is required to connect to the XiO Cloud service.

Model(s)	Firmware Versions
AV3, CP3, CP3N, DIN-AP3, DIN-AP3MEX, FT-TS600, FT-TSC600, MC3, MPC3-101, MPC3-102, MPC3-201, MPC3-302, PRO3, RMC3, TSCW-730	1.603.0001
DM-MD8X8-CPU3, DM-MD8X8-CPU3-RPS, DM-MD16X16-CPU3, DM-MD16X16-CPU3-RPS, DM-MD32X32-CPU3, DM-MD32X32-CPU3-RPS, DMPS3-200-C, DMPS3-300-C, DMPS3-300-C-AEC, DMPS3-4K-50, DMPS3-4K-100-C, DMPS3-4K-150-C, DMPS3-4K-200-C, DMPS3-4K-250-C, DMPS3-4K-300-C, DMPS3-4K-350-C	1.603.0112
TSS-7, TSS-10, TSW-560, TSW-560P, TSW-760, TSW-1060	2.009.0121
DGE-100, DM-DGE-200-C, TS-1542, TS-1542-C	1.4662.00000.000
CCS-UC-1 W/PS, CCS-UC-1-AV W/PS, CCS-UC-1-X, UC-M50-U, UC-M50-UA, UC-M70-U, UC-M70-UA, UC-MX50-U, UC-MX70-U	1.4395.00025.001

Model(s)	Firmware Versions
AM-200, AM-300	1.4493.00039.003
DM-NVX-350, DM-NVX-350C, DM-NVX-351, DM-NVX-351C, DM-NVX-352, DM-NVX-352C, DM-NVX-D30, DM-NVX-D30C, DM-NVX-E30, DM-NVX-E30C	5.1.4651.00031
AMP-2000, AMP-4000, AMP-4600, AMP-8000, AMP-8075, AMPI-8075, AMP-8150, AMPI-8150, DSP-860, DSP-1280, DSP-1281, DSP-1282, DSP-1283	1.00.380.002
CEN-ODT-C-POE	1.001.0063
AV4, CP4, CP4N, DIN-AP4, MC4, MC4-I, PRO4, RMC4	2.4508.00035
UC-ENGINE, UC-ENGINE-SD, UC-ENGINE-SD-Z	1.00.16.885 or 1.00.17.185 The minimum firmware version is dependent on the UC-ENGINE hardware. XiO Cloud and the device will select the correct version automatically.
HD-RX-4K-410-C-E, HD-RX-4K-410-C-E-SW4, HD-RX-4K-510-C-E, HD-RX-4K-510-C-E-SW4	1.0.4365.16200

What XiO Cloud features are supported by Crestron devices?

All Crestron devices that can be claimed into the XiO Cloud service support the following features at minimum:

- Online status
- Network settings
- Firmware updates
- Remote restart
- Crestron Fusion® service provisioning (enable/disable and cloudurl)
- Log file retrieval

Certain Crestron devices support additional XiO Cloud features. These additional features are implemented either when the device support is initially released or during a future update to the XiO Cloud service.

Which takes precedence: local settings made on the device, or settings made within the XiO Cloud service?

Settings enforced in the XiO Cloud service always take precedence to local settings. If a local setting is changed, it will report its new value to the XiO Cloud service, and the device will indicate that changes to its settings are pending. Refresh the device within XiO Cloud to see its updated settings.

How do I determine if the XiO Cloud service is down?

Refer to online help article 5894 for the current status of the XiO Cloud service. Subscribe to this article to get updates on any status changes.

Does the XiO Cloud service support single sign-on (SSO) solutions?

The XiO Cloud service supports both SAML and OpenID Connect for SSO, which are supported by all major identity providers including the Azure® Active Directory® service.

For more information on integrating SSO with XiO Cloud via Azure Active Directory, refer to www.crestron.com/News/Blog/April-2020/SSO-for-XiO-Cloud-using-Azure-AD.

What device ports are required to connect to the XiO Cloud service?

Devices communicate to the XiO Cloud service over TCP using port 443 (AMQP over WebSockets).

What IP addresses are used for the XiO Cloud service?

The XiO Cloud service is located within Azure's US East and West datacenters. The current list of datacenter IP addresses is available at www.microsoft.com/en-us/download/confirmation.aspx?id=56519.

For more information on the URLs and IP addresses used by the XiO Cloud service, refer to the XiO Cloud Service Security Reference Guide.

How do I check that a device is registered with the XiO Cloud service?

To check that a device is registered with the XiO Cloud service, issue the `hydrogenstatus` command to the device using the **Text Console** tool in Crestron Toolbox™ software.

A sample response is shown below indicating that the device is registered to the XiO Cloud service but not claimed.

```
MERCURY>HYDROGENSTATUS
HydrogenUrl: https://fc.crestron.io/api/device/create
This unit is online with Hydrogen
IoT Hub Url: prd-use-iothub.azure-devices.net
Last IOT connect Time: 02/08/2018 15:43:02
Hydrogen device state: REGISTRATION_SUCCESSFUL
HttpsRegistrationRetryInterval (sec): 300
IoTHeartbeatInterval (sec): 300
Empty Callback from CPH count: 0
CresNextReceiveThread: waiting on queue...
```

How to I disable a Crestron Fusion in the Cloud (FITC) connection?

The Crestron Fusion Cloud URL must be changed to the myCrestron URL (https://api.my.crestron.com/api/Registration) prior to disabling the FITC connection. This is required when moving a device from a Crestron Fusion Cloud server to an on-premesis Crestron Fusion server.

What countries currently support SMS alerts for the XiO Cloud service?

SMS (short message service) for XiO Cloud alerts is not currently supported in all countries. The following countries are supported at this time:

- American Samoa
- Anguilla
- Antigua
- Australia
- Barbuda
- Bahamas
- Barbados
- Belgium
- Bermuda
- Canada
- Cayman Islands
- Dominica
- Dominican Republic
- Ireland
- Grenada
- Grenadines
- Guam
- India
- Israel
- Jamaica
- Montserrat
- Myanmar
- North Mariana Islands
- Puerto Rico
- Sweden
- Trinadad
- Turks
- United Kingdom
- United States of America
- Virgin Islands

To inquire about SMS support for a country that is not currently listed, contact Crestron.

Troubleshooting

This topic provides troubleshooting procedures for various issues that may occur when using the XiO Cloud service.

Issue	Solution(s)
A device reports that it is registered with the XiO Cloud service but is reporting as offline within the service.	Ensure that the date and time settings on the device are correct. Incorrect date and time settings can cause the device to report as offline.
The device goes offline after roughly 12 hours.	Ensure that the date and time settings on the device are correct. Incorrect date and time settings can cause the device to report as offline. Additionally, if the device is connected to a control processor, check that the time and timezone settings on the control processor are correct.
Conflicts occur when attempting to schedule actions for a device.	Stagger the times for scheduled actions to ensure there are no conflicts with delivery.
A change to device settings from XiO Cloud is rejected by the device.	Ensure there are no IP ID conflicts within your system. IP IDs must be unique across systems. For example, if you are adding a Crestron Connected® Display at IP ID 03 to a system that is configured to use Crestron Fusion at IP ID 03, the settings will be rejected by the device due to the IP ID conflict.
Errors are received when attempting to claim a device to the XiO Cloud service.	Ensure that the device is connected to the network and has internet access. After connecting the device, wait a few minutes until the device has been registered. Issue the `hydrogenstatus` command to the device using the **Text Console** tool in Crestron Toolbox software to ensure the device is able to connect to the XiO Cloud service,
The device reports as connected but the settings in XiO Cloud are different than the local settings on the device.	Select **Refresh Device** from the **Action** drop-down menu to refresh the device connection.
The device is showing pending settings even though it is reporting as connected.	Select **Refresh Device** from the **Action** drop-down menu to refresh the device connection.

Issue	Solution(s)
Settings changed from XiO Cloud are not applied on the device.	Pushing settings while a firmware update is in progress on a device (not scheduled, but actively in progress on a device) may result in the settings not being applied to the device. To resolve, select **Refresh Device** from the **Action** drop-down menu to refresh the device connection.
A firmware upgrade fails to start.	Applying settings may cause a firmware upgrade to not start if the settings are saved around the same time that the upgrade begins. To resolve, restart the firmware upgrade.

Works with XiO Cloud

The XiO Cloud® service is designed to work with many Crestron® and third-party products.

The following device types work with XiO Cloud:

Audio

The following audio solutions are supported by the XiO Cloud® service.

Amplifiers

- AMP-2800: 2-Channel Power Amplifier, 800 W/Ch *(Discontinued)*
- AMP-4600: 4-Channel Power Amplifier, 600 W/Ch
- AMP-8075: 8-Channel Power Amplifier, 75 W/Ch, 4/8 Ω or 70V, North America and Japan, 100–120V
- AMPI-8075: 8-Channel Power Amplifier, 75 W/Ch, 4/8 Ω or 70V, International, 220–240V
- AMP-8150: 8-Channel Power Amplifier, 150 W/Ch, 4/8 Ω or 70V, North America and Japan, 100–120V
- AMPI-8150: 8-Channel Power Amplifier, 150 W/Ch, 4/8 Ω or 70V, International, 220–240V

Digital Signal Processors

- DSP-860: Crestron Avia® 8x6 Digital Signal Processor
- DSP-1280: Crestron Avia® 12x8 Digital Signal Processor
- DSP-1281: Crestron Avia® 12x8 Digital Signal Processor with Dante® Audio Networking
- DSP-1282: Crestron Avia® 12x8 Digital Signal Processor with USB Audio, AEC, and Audio Conferencing Interface *(Discontinued)*
- DSP-1283: Crestron Avia® 12x8 Digital Signal Processor with Dante® Audio Networking, USB Audio, AEC, and Audio Conferencing Interface *(Discontinued)*

Conferencing

The following conferencing solutions are supported by the XiO Cloud® service.

AirMedia Wireless Presentation and Conferencing

- AM-200: AirMedia® Presentation System 200 *(Discontinued)*
- AM-300: AirMedia® Presentation System 300 *(Discontinued)*
- AM-3000-WF: AirMedia® Receiver 3000 with Wi-Fi® Network Connectivity
- AM-3000-WF-I: AirMedia® Receiver 3100 with Wi-Fi® Network Connectivity, International
- AM-3100-WF: AirMedia® Series 3 Receiver 100 with Wi-Fi® Connectivity
- AM-3100-WF-I: AirMedia® Series 3 Receiver 100 with Wi-Fi® Connectivity, International
- AM-3200: AirMedia® Series 3 Receiver 200
- AM-3200-WF: AirMedia® Series 3 Receiver 200 with Wi-Fi® Connectivity
- AM-3200-WF-I: AirMedia® Series 3 Receiver 200 with Wi-Fi® Connectivity, International

Crestron Flex Solutions

The following Crestron Flex solutions are supported by the XiO Cloud® service.

Crestron Flex Accessories

- UC-ENGINE: UC Engine for Microsoft Teams® Software *(Discontinued)*
- UC-ENGINE-D-T: UC Engine for Microsoft Teams® Software *(Not Sold Separately)*
- UC-ENGINE-D-Z: UC Engine for Zoom Rooms™ Software *(Not Sold Separately)*
- UC-ENGINE-P-T: UC Engine for Microsoft Teams® Software *(Not Sold Separately)*
- UC-ENGINE-P-Z: UC Engine for Zoom Rooms™ Software *(Not Sold Separately)*
- UC-ENGINE-S-T: UC Engine for Microsoft Teams® Software *(Not Sold Separately)*
- UC-ENGINE-S-Z: UC Engine for Zoom Rooms™ Software *(Not Sold Separately)*
- UC-ENGINE-SD: UC Engine for Microsoft Teams® Software *(Discontinued)*
- UC-ENGINE-SD-Z: UC Engine for Zoom Rooms™ Software *(Discontinued)*

Crestron Flex Phones

- UC-P8-T: Crestron Flex 8 in. Audio Desk Phone for Microsoft Teams® Software *(Discontinued)*
- UC-P8-T-I: Crestron Flex 8 in. Audio Desk Phone for Microsoft Teams® Software, International *(Discontinued)*
- UC-P8-T-C: Crestron Flex 8 in. Video Desk Phone for Microsoft Teams® Software *(Discontinued)*
- UC-P8-T-C-I: Crestron Flex 8 in. Video Desk Phone for Microsoft Teams® Software, International *(Discontinued)*
- UC-P8-T-HS: Crestron Flex 8 in. Audio Desk Phone with Handset for Microsoft Teams® Software

- UC-P8-T-HS-I: Crestron Flex 8 in. Audio Desk Phone with Handset for Microsoft Teams® Software, International
- UC-P8-T-C-HS: Crestron Flex 8 in. Video Desk Phone with Handset for Microsoft Teams® Software
- UC-P8-T-C-HS-I: Crestron Flex 8 in. Video Desk Phone with Handset for Microsoft Teams® Software, International
- UC-P8-TD: Crestron Flex 8 in. Display for Microsoft Teams® Software
- UC-P8-TD-I: Crestron Flex 8 in. Display for Microsoft Teams® Software, International
- UC-P10-T: Crestron Flex 10 in. Audio Desk Phone for Microsoft Teams® Software *(Discontinued)*
- UC-P10-T-I: Crestron Flex 10 in. Audio Desk Phone for Microsoft Teams® Software, International *(Discontinued)*
- UC-P10-T-C: Crestron Flex 10 in. Video Desk Phone for Microsoft Teams® Software *(Discontinued)*
- UC-P10-T-C-I: Crestron Flex 10 in. Video Desk Phone for Microsoft Teams® Software, International *(Discontinued)*
- UC-P10-T-HS: Crestron Flex 10 in. Audio Desk Phone with Handset for Microsoft Teams® Software
- UC-P10-T-HS-I: Crestron Flex 10 in. Audio Desk Phone with Handset for Microsoft Teams® Software, International
- UC-P10-T-C-HS: Crestron Flex 10 in. Video Desk Phone with Handset for Microsoft Teams® Software
- UC-P10-T-C-HS-I: Crestron Flex 10 in. Video Desk Phone with Handset for Microsoft Teams® Software, International
- UC-P10-TD: Crestron Flex 10 in. Display for Microsoft Teams® Software
- UC-P10-TD-I: Crestron Flex 10 in. Display for Microsoft Teams® Software, International
- UC-P100-T: Crestron Flex VoIP Desk Phone for Microsoft Teams® Software *(Discontinued)*
- UC-P110-T: Crestron Flex VoIP Desk Phone with Tilt Screen for Microsoft Teams® Software *(Discontinued)*

Crestron Mercury Conference Consoles

- CCS-UC-1: Crestron Mercury® Tabletop UC Audio Conference Console *(Not Sold Separately)*
- CCS-UC-1-AV: Crestron Mercury® Tabletop UC Video Conference Console *(Not Sold Separately)*
- CCS-UC-1-T: Crestron Mercury® Tabletop UC Audio Conference Console for Microsoft Teams® Software *(Discontinued)*
- CCS-UC-1-T-V: Crestron Mercury® Tabletop UC Video Conference Console for Microsoft Teams® Software *(Not Sold Separately)*
- CCS-UC-1-X: Crestron Mercury® X Tabletop Conference Console *(Not Sold Separately)*

Control

The following control solutions are supported by the XiO Cloud® service.

3-Series Control Systems

- AV3: 3-Series® Control System *(Discontinued)*
- CP3: 3-Series® Control System *(Discontinued)*
- CP3N: 3-Series® Control System *(Discontinued)*
- DIN-AP3: 3-Series® DIN Rail Control System *(Discontinued)*
- DIN-AP3MEX: 3-Series® DIN Rail Control System with infiNET EX® and ER Wireless Gateway *(Discontinued)*
- PRO3: 3-Series® Control System *(Discontinued)*
- RMC3: 3-Series® Control System *(Discontinued)*

4-Series Control Systems

- AV4: 4-Series™ Control System *(Discontinued)*
- CP4: 4-Series™ Control System
- CP4N: 4-Series™ Control System
- DIN-AP4: 4-Series™ DIN Rail Control System
- MC4: 4-Series™ Control System
- MC4-I: 4-Series™ Control System, International
- PRO4: 4-Series™ Control System *(Discontinued)*
- RMC4: 4-Series™ Control System

Crestron Virtual Control Server-Based Control Systems

- VC-4-PC-3: Computer with Crestron Virtual Control Server Software
- VC-4-ROOM: Crestron Virtual Control Server Software - Single-Room License

Media Presentation Controllers

- MPC3-101-B: 3-Series® Media Presentation Controller 101, Black *(Discontinued)*
- MPC3-102-B: 3-Series® Media Presentation Controller 102, Black
- MPC3-201-B: 3-Series® Media Presentation Controller 201, Black
- MPC3-302-B: 3-Series® Media Presentation Controller 302, Black
- MPC3-302-W: 3-Series® Media Presentation Controller 302, White

Lighting and Environmental

The following lighting and environmental solutions are supported by the XiO Cloud® service.

Lighting Control Systems

- ZUM-HUB4: Zūm® Lighting Control System, Hub4

Power

The following power solutions are supported by the XiO Cloud® service.

Power Conditioners

- PC-350V-12: 12-Outlet Vertical Networked Power Controller and Conditioner with Surge Protection and Metering
- PC-350V-18: 18-Outlet Vertical Networked Power Controller and Conditioner with Surge Protection and Metering

Scheduling

The following scheduling solutions are supported by the XiO Cloud® service.

Room Scheduling Touch Screens

- TSS-7-B-S: 7 in. Room Scheduling Screen, Black Smooth *(Discontinued)*
- TSS-7-W-S: 7 in. Room Scheduling Screen, White Smooth *(Discontinued)*
- TSS-10-B-S: 10.1 in. Room Scheduling Screen, Black Smooth *(Discontinued)*
- TSS-10-W-S: 10.1 in. Room Scheduling Screen, White Smooth *(Discontinued)*
- TSS-770-B-S: 7 in. Room Scheduling Screen, Black Smooth
- TSS-770-W-S: 7 in. Room Scheduling Screen, White Smooth
- TSS-1070-B-S: 10.1 in. Room Scheduling Screen, Black Smooth
- TSS-1070-W-S: 10.1 in. Room Scheduling Screen, White Smooth

Sensors

The following sensors are supported by the XiO Cloud® service.

Occupancy Sensors

- CEN-ODT-C-POE: Dual-Technology Occupancy Sensor, PoE, 2,000 Sq Ft

Table Connectivity

The following table connectivity solutions are supported by the XiO Cloud® service.

FlipTop Cable Compartments

- FT-TS600-B: FlipTop™ Touch Screen, Black Anodized *(Discontinued)*
- FT-TS600-BALUM: FlipTop™ Touch Screen, Brushed Aluminum *(Discontinued)*
- FT-TSC600-B: FlipTop™ Touch Screen Control System, Black Anodized *(Discontinued)*
- FT-TSC600-BALUM: FlipTop™ Touch Screen Control System, Brushed Aluminum *(Discontinued)*

Third-Party Devices

The following third-party devices are supported by the XiO Cloud® service via the Crestron Connected® protocol or the Crestron XiO Cloud™ Third-Party Device Monitoring Gateway.

> **NOTE:** For more information on using third-party devices to the XiO Cloud service, refer to the XiO Cloud® Service Third-Party Device Monitoring Configuration Guide.

Crestron Connected Devices

Supported third-party devices that use the Crestron Connected® communications protocol can be claimed to the XiO Cloud service directly without requiring a Crestron control processor, including the following:

- Acer® displays
- Barco® displays
- Christie® displays
- Epson® displays
- Legrand® PDUs
- LG® displays
- Optoma® displays
- Phillips® displays
- Raritan® PDUs
- Samsung® displays
- Sony® displays

For a list of third-party device models that have been certified to connect to XiO Cloud, refer to Crestron Online Help answer ID 1001716.

Crestron Driver Devices

The XiO Cloud® service provides monitoring capabilities for supported third-party devices within a Crestron® system using the Crestron Drivers framework. The devices will appear in the XiO Cloud service and need only to be claimed to start monitoring.

Crestron Driver support in XiO Cloud is available for the following device types:

- A/V Receivers
- A/V Switchers
- Audio Mixers
- Blu-ray® Disc Players
- Cable Boxes
- Displays

- Polycom® Video Codec
- Projectors
- Video Servers

To view the available Crestron Drivers for these device types, visit the Crestron Driver Portal at drivers.crestron.io.

Third-Party Device Monitoring Gateway Software

Crestron XiO Cloud™ Gateway Software provides expanded configuration and monitoring capabilities for supported third-party devices not connected directly to a Crestron® control processor. This configuration allows for monitoring via Ping, TCP, SNMP, and the Crestron Drivers framework over Ethernet.

Touch Screens

The following touch screens are supported by the XiO Cloud® service.

Tabletop Touch Screens

- TS-770-B-S: 7 in. Tabletop Touch Screen, Black Smooth
- TS-770-W-S: 7 in. Tabletop Touch Screen, White Smooth
- TS-770-GV-B-S: 7 in. Tabletop Touch Screen, Government Version, Black Smooth
- TS-770-GV-W-S: 7 in. Tabletop Touch Screen, Government Version, White Smooth
- TS-1070-B-S: 10.1 in. Tabletop Touch Screen, Black Smooth
- TS-1070-W-S: 10.1 in. Tabletop Touch Screen, White Smooth
- TS-1070-GV-B-S: 10.1 in. Tabletop Touch Screen, Government Version, Black Smooth
- TS-1070-GV-W-S: 10.1 in. Tabletop Touch Screen, Government Version, White Smooth
- TS-1542-TILT-B-S: 15.6 in. HD Touch Screen, Tabletop Tilt, Black Smooth *(Discontinued)*
- TS-1542-TILT-W-S: 15.6 in. HD Touch Screen, Tabletop Tilt, White Smooth *(Discontinued)*
- TS-1542-TILT-SSB: 15.6 in. HD Touch Screen, Tabletop Tilt, Signature Series Black *(Discontinued)*
- TS-1542-TILT-SSW: 15.6 in. HD Touch Screen, Tabletop Tilt, Signature Series White *(Discontinued)*
- TS-1542-TILT-C-B-S: 15.6 in. HD Touch Screen with DM 8G+® Input, Tabletop Tilt, Black Smooth *(Discontinued)*
- TS-1542-TILT-C-W-S: 15.6 in. HD Touch Screen with DM 8G+® Input, Tabletop Tilt, White Smooth *(Discontinued)*
- TS-1542-TILT-C-SSB: 15.6 in. HD Touch Screen with DM 8G+® Input, Tabletop Tilt, Signature Series Black *(Discontinued)*
- TS-1542-TILT-C-SSW: 15.6 in. HD Touch Screen with DM 8G+® Input, Tabletop Tilt, Signature Series White *(Discontinued)*

Touch Screen Control Systems

- TSCW-730-B-S: 7 in. Touch Screen Control System, Black Smooth *(Discontinued)*
- TSCW-730-W-S: 7 in. Touch Screen Control System, White Smooth *(Discontinued)*

Wall Mount Touch Screens

- TS-1542-B-S: 15.6 in. HD Touch Screen, Wall Mount or VESA, Black Smooth *(Discontinued)*
- TS-1542-W-S: 15.6 in. HD Touch Screen, Wall Mount or VESA, White Smooth *(Discontinued)*
- TS-1542-C-B-S: 15.6 in. HD Touch Screen with DM 8G+® Input, Wall Mount or VESA, Black Smooth *(Discontinued)*
- TS-1542-C-W-S: 15.6 in. HD Touch Screen with DM 8G+® Input, Wall Mount or VESA, White Smooth *(Discontinued)*

- TSW-560-B-S: 5 in. Touch Screen, Black Smooth *(Discontinued)*
- TSW-560-W-S: 5 in. Touch Screen, White Smooth *(Discontinued)*
- TSW-560-NC-B-S: 5 in. Touch Screen without Camera or Microphone, Black Smooth *(Discontinued)*
- TSW-560-NC-W-S: 5 in. Touch Screen without Camera or Microphone, White Smooth *(Discontinued)*
- TSW-560P-B-S: 5 in. Touch Screen, Portrait, Black Smooth *(Discontinued)*
- TSW-560P-W-S: 5 in. Touch Screen, Portrait, White Smooth *(Discontinued)*
- TSW-570-B-S: 5 in. Touch Screen, Black Smooth
- TSW-570-W-S: 5 in. Touch Screen, White Smooth
- TSW-570P-B-S: 5 in. Touch Screen, Portrait, Black Smooth
- TSW-570P-W-S: 5 in. Touch Screen, Portrait, White Smooth
- TSW-760-B-S: 7 in. Touch Screen, Black Smooth *(Discontinued)*
- TSW-760-W-S: 7 in. Touch Screen, White Smooth *(Discontinued)*
- TSW-760-NC-B-S: 7 in. Touch Screen without Camera or Microphone, Black Smooth *(Discontinued)*
- TSW-760-NC-W-S: 7 in. Touch Screen without Camera or Microphone, White Smooth *(Discontinued)*
- TSW-770-B-S: 7 in. Wall Mount Touch Screen, Black Smooth
- TSW-770-W-S: 7 in. Wall Mount Touch Screen, White Smooth
- TSW-770-GV-B-S: 7 in. Wall Mount Touch Screen, Government Version, Black Smooth
- TSW-770-GV-W-S: 7 in. Wall Mount Touch Screen, Government Version, White Smooth
- TSW-1060-B-S: 10.1 in. Touch Screen, Black Smooth *(Discontinued)*
- TSW-1060-W-S: 10.1 in. Touch Screen, White Smooth *(Discontinued)*
- TSW-1060-NC-B-S: 10.1 in. Touch Screen without Camera or Microphone, Black Smooth *(Discontinued)*
- TSW-1060-NC-W-S: 10.1 in. Touch Screen without Camera or Microphone, White Smooth *(Discontinued)*
- TSW-1070-B-S: 10.1 in. Wall Mount Touch Screen, Black Smooth
- TSW-1070-W-S: 10.1 in. Wall Mount Touch Screen, White Smooth
- TSW-1070-GV-B-S: 10.1 in. Wall Mount Touch Screen, Government Version, Black Smooth
- TSW-1070-GV-W-S: 10.1 in. Wall Mount Touch Screen, Government Version, White Smooth

Video

The following video solutions are supported by the XiO Cloud® service.

AirMedia Wireless Presentation and Conferencing

- AM-200: AirMedia® Presentation System 200 *(Discontinued)*
- AM-300: AirMedia® Presentation System 300 *(Discontinued)*
- AM-3000-WF: AirMedia® Receiver 3000 with Wi-Fi® Network Connectivity
- AM-3000-WF-I: AirMedia® Receiver 3100 with Wi-Fi® Network Connectivity, International
- AM-3100-WF: AirMedia® Series 3 Receiver 100 with Wi-Fi® Connectivity
- AM-3100-WF-I: AirMedia® Series 3 Receiver 100 with Wi-Fi® Connectivity, International
- AM-3200: AirMedia® Series 3 Receiver 200
- AM-3200-WF: AirMedia® Series 3 Receiver 200 with Wi-Fi® Connectivity
- AM-3200-WF-I: AirMedia® Series 3 Receiver 200 with Wi-Fi® Connectivity, International

Digital Graphics Engines

- DGE-100: Digital Graphics Engine 100
- DM-DGE-200-C: Digital Graphics Engine 200 with 4K DM 8G+® Input

DigitalMedia Solutions

The following DigitalMedia™ solutions supported by the XiO Cloud® service.

DigitalMedia Presentation Systems

- DMPS3-4K-50: 3-Series® 4K DigitalMedia™ Presentation System 50 *(Discontinued)*
- DMPS3-4K-100-C: 3-Series® 4K DigitalMedia™ Presentation System 100 *(Discontinued)*
- DMPS3-4K-150-C: 3-Series® 4K DigitalMedia™ Presentation System 150 *(Discontinued)*
- DMPS3-4K-200-C: 3-Series® 4K DigitalMedia™ Presentation System 200 *(Discontinued)*
- DMPS3-4K-250-C: 3-Series® 4K DigitalMedia™ Presentation System 250
- DMPS3-4K-250-C-AIRMEDIA: 3-Series® 4K DigitalMedia™ Presentation System 250 with AirMedia® *(Discontinued)*
- DMPS3-4K-300-C: 3-Series® 4K DigitalMedia™ Presentation System 300 *(Discontinued)*
- DMPS3-4K-350-C: 3-Series® 4K DigitalMedia™ Presentation System 350
- DMPS3-4K-350-C-AIRMEDIA: 3-Series® 4K DigitalMedia™ Presentation System 350 with AirMedia® *(Discontinued)*
- DMPS3-200-C: 3-Series® DigitalMedia™ Presentation System 200 *(Discontinued)*
- DMPS3-300-C: 3-Series® DigitalMedia™ Presentation System 300 *(Discontinued)*

- DMPS3-300-C-AEC: 3-Series® DigitalMedia™ Presentation System 300 with Audio Conferencing Interface *(Discontinued)*

DigitalMedia Switchers

- DM-MD8X8-CPU3: 8x8 DigitalMedia™ Switcher
- DM-MD8X8-CPU3-RPS: 8x8 DigitalMedia™ Switcher with Redundant Power Supplies
- DM-MD16X16-CPU3: 16x16 DigitalMedia™ Switcher
- DM-MD16X16-CPU3-RPS: 16x16 DigitalMedia™ Switcher with Redundant Power Supplies
- DM-MD32X32-CPU3: 32x32 DigitalMedia™ Switcher
- DM-MD32X32-CPU3-RPS: 32x2 DigitalMedia™ Switcher with Redundant Power Supplies

DM NVX AV-over-IP Solutions

- DM-NVX-350: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder *(Discontinued)*
- DM-NVX-350C: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder Card *(Discontinued)*
- DM-NVX-351: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder with Downmixing
- DM-NVX-351C: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder Card with Downmixing
- DM-NVX-352: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder with Dante® Audio *(Discontinued)*
- DM-NVX-352C: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder Card with Dante® Audio *(Discontinued)*
- DM-NVX-360: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder
- DM-NVX-360C: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder Card
- DM-NVX-363: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder with Downmixing and Dante® Audio
- DM-NVX-363C: DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder Card with Downmixing and Dante® Audio
- DM-NVX-D10: DM NVX® 1080p60 4:4:4 Network AV Decoder
- DM-NVX-D20: DM NVX® 4K60 4:2:0 Network AV Decoder
- DM-NVX-D30: DM NVX® 4K60 4:4:4 HDR Network AV Decoder
- DM-NVX-D30C: DM NVX® 4K60 4:4:4 HDR Network AV Decoder Card
- DM-NVX-D200: DM NVX® 4K60 4:2:0 Network AV Decoder with Scaler
- DM-NVX-D80-IOAV: DM NVX® 4K60 4:4:4 HDR Network AV OPS Decoder
- DM-NVX-E10: DM NVX® 1080p60 4:4:4 Network AV Encoder
- DM-NVX-E20: DM NVX® 4K60 4:2:0 Network AV Encoder
- DM-NVX-E30: DM NVX® 4K60 4:4:4 HDR Network AV Encoder
- DM-NVX-E30C: DM NVX® 4K60 4:4:4 HDR Network AV Encoder Card
- DM-NVX-E760: DM NVX® 4K60 4:4:4 HDR Network AV Encoder with DM® Input
- DM-NVX-E760C: DM NVX® 4K60 4:4:4 HDR Network AV Encoder Card with DM® Input

HDMI Solutions

The following HDMI® solutions supported by the XiO Cloud® service.

HDMI Extenders

- HD-RX-4K-210-C-E: DMPS Lite™ 4K Multiformat 2x1 AV Switch and Receiver
- HD-RX-4K-210-C-E-POE: DMPS Lite™ 4K Multiformat 2x1 AV Switch and Receiver with PoE+
- HD-RX-4K-410-C-E: DMPS Lite™ 4K Multiformat 4x1 AV Switch and Receiver *(Discontinued)*
- HD-RX-4K-410-C-E-SW4: DMPS Lite™ 4K Multiformat 4x1 AV Switch and Receiver with 4-Port Ethernet Switch
- HD-RX-4K-510-C-E: DMPS Lite™ 4K Multiformat 5x1 AV Switch and Receiver
- HD-RX-4K-510-C-E-SW4: DMPS Lite™ 4K Multiformat 5x1 AV Switch and Receiver with 4-Port Ethernet Switch

HDMI Switchers

- HD-MD4X1-4KZ-E: 4x1 4K60 4:4:4 HDR AV Switcher
- HD-MD4X2-4KZ-E: 4x2 4K60 4:4:4 HDR AV Switcher
- HD-MD4X4-4KZ-E: 4x2 4K60 4:4:4 HDR AV Switcher
- HD-MD8X4-4KZ-E: 8x4 4K60 4:4:4 HDR AV Switcher
- HD-MD8X8-4KZ-E: 8x8 4K60 4:4:4 HDR AV Switcher
- HD-PS401: 4x1 4K60 4:4:4 HDR Presentation System
- HD-PS402: 4x2 4K60 4:4:4 HDR Presentation System
- HD-PS621: 8x1 4K60 4:4:4 HDR Presentation System
- HD-PS622: 8x2 4K60 4:4:4 HDR Presentation System

Appendix A: Configure ServiceNow for XiO Cloud Alerts

As of XiO Cloud version 1.23, XiO Cloud alerts can be integrated with ServiceNow® software instances. Once alerts have been configured for your XiO Cloud account (as described in Alerts on page 78), the ServiceNow administrator for your system must make configuration changes to allow XiO Cloud to communicate with your ServiceNow instance. The administrator must implement two new inbound actions and modify the scripts/incident form in accordance with your system and requirements. These configuration tasks are described in the following sections.

Client Prerequisites

Ensure the following client-side prerequisites have been met prior to configuring your ServiceNow instance for XiO Cloud alerts:

- A working ServiceNow instance that is permitted to receive emails
- A ServiceNow system administrator that has been granted the **Admin** role
- ServiceNow has been enabled in the XiO Cloud account settings.
- Basic knowledge of ServiceNow incident form development
- Basic knowledge of ServiceNow scripting and JavaScript® coding

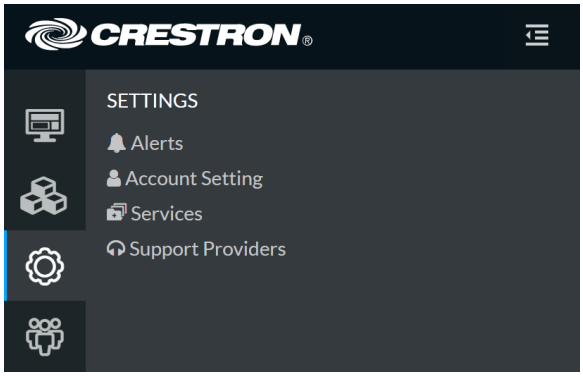
Turn on ServiceNow Within XiO Cloud

Users with Global Administrator permissions can turn on a connection to a ServiceNow instance directly from the XiO Cloud portal.

To turn on ServiceNow within XiO Cloud from the portal:

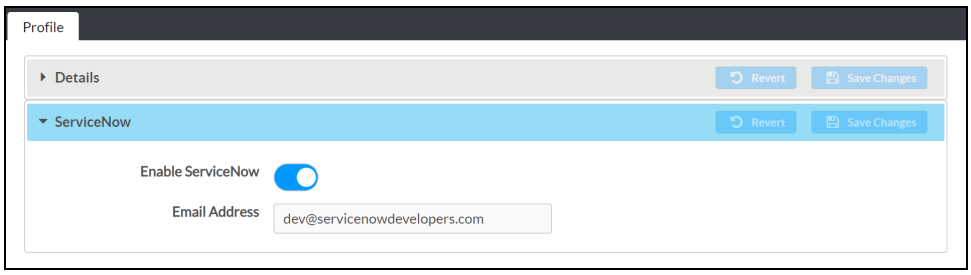
1. Select the gear icon on the left side of the screen.
2. Select **Account Setting**.

SETTINGS Menu



3. Within the **Profile** tab on the right side of the screen, expand the **ServiceNow** accordion, then turn on the **Enable ServiceNow** toggle.

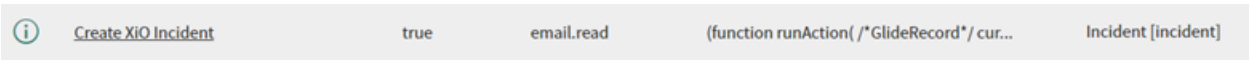
   Profile Tab - ServiceNow Accordion



4. Enter the email address for the ServiceNow instance in the **Email Address** text field.
5. Tap **Save Changes** on the top right of the accordion.

Create XiO Incident Script

To allow XiO Cloud to create an alert email within your system, you must implement the **Create XiO Incident** inbound action within your ServiceNow instance. This rule takes emails received from XiO Cloud and converts them into incidents within your system automatically, allowing specified data points to map to fields within your instance. Selecting the inbound action rule shows the details associated with it, including the condition that triggers the inbound action and the script that maps it to your incident table.



When to Run Tab

Select the **When to Run** tab to view and configure conditions that will trigger the **Create XiO Incident** inbound action to run. Sending an email to the ServiceNow instance with a subject that contains "Crestron-XIO: NEW Incident" triggers the inbound action to run.

NOTE: Do not change the subject condition, as it may cause your system to incorrectly triage your XiO Cloud incidents and, therefore, to not trigger the rule.

Actions Tab

Select the **Actions** tab to view and configure action scripts for the **Create XiO Incident** inbound action. The provided script parses through the email and correctly allocates data to certain fields based on the content of the XiO Cloud alert.

Each section of the script is described below.

```
//Parse Table Content to Description

var parseBody = email.body_text.split(',').join('\n');
current.description = parseBody;
```

The code under the "Parse Table Content to Description" comment is used to parse the information within the comma-delimited email sent from XiO Cloud and adds it to the description field of the created incident.

```
//Populate Email content to Fields

current.short_description = email.subject;
current.caller_id = gs.getUserID();
current.contact_type = "Email";
current.comments = "recieved from: " + email.origemail + "\n\n" + email.body_text;
current.category = "xio";
current.subcategory = "Email";
current.cmbd_ci.setDisplayValue('XiO');
```

The code under the "Populate Email content to Fields" section shows the logic used to populate other key fields on the incident form, including **Caller ID**, **Contact Type**, **Comments**, **Category**, **Subcategory**, and **Configuration Item**.

NOTES:

- You must add the **Category**, **Subcategory**, and **Configuration Item** values to your system if they do not already exist. Custom categories, subcategories, or configuration items can also be used. In this case, the code must be modified to match the values that will be used in the current system. Additional information on how to add these values is provided in the ServiceNow documentation.
- The **Caller ID** field will populate as "Guest" unless you create an account associated with the XiO Cloud email. For more information, refer to the ServiceNow documentation.

```
//Parse Correlation ID from Email

var rsubject = email.subject;
var keyword = "CorrelationID#";
var key = rsubject.indexOf(keyword); //Assuming this text would never change
gs.log(key, 'Did it work');

if (key > 0) {

    var number = rsubject.substring(47);

    gs.log(number, "TEST"); //Try logging number

    current.correlation_id = number;
    gs.log(number, "TEST AGAIN");
    current.insert();

}
```

The code under the "Parse Correlation ID from Email" section shows the logic used to populate incidents with the **Correlation ID** needed to link the XiO Cloud alert emails with your ServiceNow instance. This field must be added to your Incident form through the Form Designer tool if has not been already added.

> **NOTE:** Modifying the provided logic is not recommended, as the code will likely break and will prevent the field from being populated.

Additional information on how to add certain fields to your incident form, such as Correlation ID, is provided in the ServiceNow documentation.

```
//Logic to Define Priority

if (email.body_text.toLowerCase().indexOf("critical") >= 0) {
    current.impact = 1;
    current.urgency = 1;
}
if (email.body_text.toLowerCase().indexOf("warning") >= 0) {
    current.impact = 2;
    current.urgency = 2;
}
```

The code under the "Logic to Define Priority" section is showing the logic that will populate the **Impact** and **Urgency** fields on the incident form, which will result in populating the **Priority** field based on the impact/urgency matrix that your incident is configured with.

Currently, there are only two variables within the script that will modify the **Priority** field:

- If an XiO Cloud alert email is of type "Critical" or of type "Warning", the priorities will be set to 1 or 3, respectively.
- If an XiO Cloud alert email is of a type other than "Warning" or "Critical", the default priority of 5 is assigned.

If you would like to modify this logic to better adhere to your instance processes, change the values of current.impact or current.urgency in accordance with the matrix below to get the desired priority for incoming incidents.

Impact/Urgency	1 – Critical	2 – High	3 – Medium	4 – Low
1 – Extensive	Priority 1	Priority 2	Priority 2	Priority 3
2 – Significant	Priority 2	Priority 2	Priority 3	Priority 4
3 – Moderate	Priority 2	Priority 3	Priority 4	Priority 4
4 – Minor	Priority 3	Priority 4	Priority 4	Priority 4

Close Incident XiO Script

After the XiO Cloud alert is resolved, the system will send a follow-up email to your ServiceNow instance. After this email is sent, the **Close Incident XiO** script will trigger and close the associated incident automatically. The primary function of the script is to locate the correct incident that the XiO Cloud email is referencing, and it does so by searching the system for the corresponding correlation ID that links the ServiceNow Incident to the XiO Cloud email.

When to Run Tab

Select the **When to Run** tab to view and configure conditions that will trigger the **Close Incident XiO** inbound action to run. Sending any email to the ServiceNow instance with a subject that contains "Closed incident with CorrelationID#" triggers the inbound action to run.

> **NOTE:** Do not change the subject condition, as it may cause your system to incorrectly triage your XiO Cloud incidents and therefore not trigger the rule.

Actions Tab

Select the **Actions** tab to view and configure action scripts for the **Close Incident XiO** inbound action. The provided script parses through an XiO Cloud alert email and associates its correlation ID (located in the email subject) with the correlated incident and its matching ID.

Each section of the script is described on the following page.

```
//Logic to parse Correlation ID

var rsubject = email.subject;
var keyword = "CorrelationID#";
var key = rsubject.indexOf(keyword); //Assuming this text would never change
if (key > 0) {
    var myID = rsubject.substring(50);
    gs.log(myID);
}
```

The first snippet of code under the "Logic to parse Correlation ID" section is used to parse the correlation ID from the email subject and save it as a variable called "Keyword". An *If* statement is then run to check if the Keyword "Correlation ID#" exists. If this keyword exists, the index of the keyword is parsed from the email subject and saved as the variable "MyID." A log function, `gs.log(myID)`, is also provided.

```
var myTask = new GlideRecord('incident');
myTask.addQuery("correlation_id", myID.toString());
myTask.query();
if (myTask.next()) {
    myTask.incident_state = IncidentState.CLOSED;
    gs.log('Task Completed');
    myTask.update();
} else {
    // No match found so log an error
    gs.info('No Match found');
}
```

The second snippet of code under the "Logic to parse Correlation ID" section takes the saved Correlation ID (MyID) and uses it in a new GlideRecord to find any existing incidents with a matching Correlation ID. Once it is queried using `MyTask.query()`; the system searches your instance for any incidents that have a Correlation ID matching the variable saved from the **Close Incident XiO** email. Once a match is found, the system will set the Incident State to Closed. If no updated occurs, it will log "No Match found" in your system logs.

> **NOTE:** Do not modify the close incident script, as any modifications to it may jeopardize the functionality of this script.

Close ServiceNow Incidents in XiO Cloud

When a ServiceNow incident is closed, the corresponding alert is not automatically resolved in XiO Cloud. In order for a closed incident to resolve the corresponding alert in XiO Cloud, a secure connection must be established between ServiceNow and XiO Cloud via REST API calls to the following endpoint:

https://api.crestron.io/api/v2/servicenowcallback/ServicenowCallBack

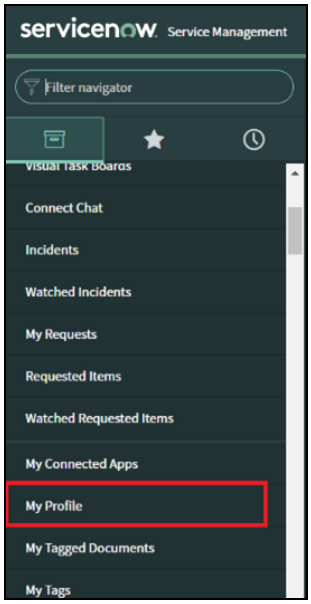
The REST API call is configured in ServiceNow as described in the following sections.

Add a Subscription Key to ServiceNow

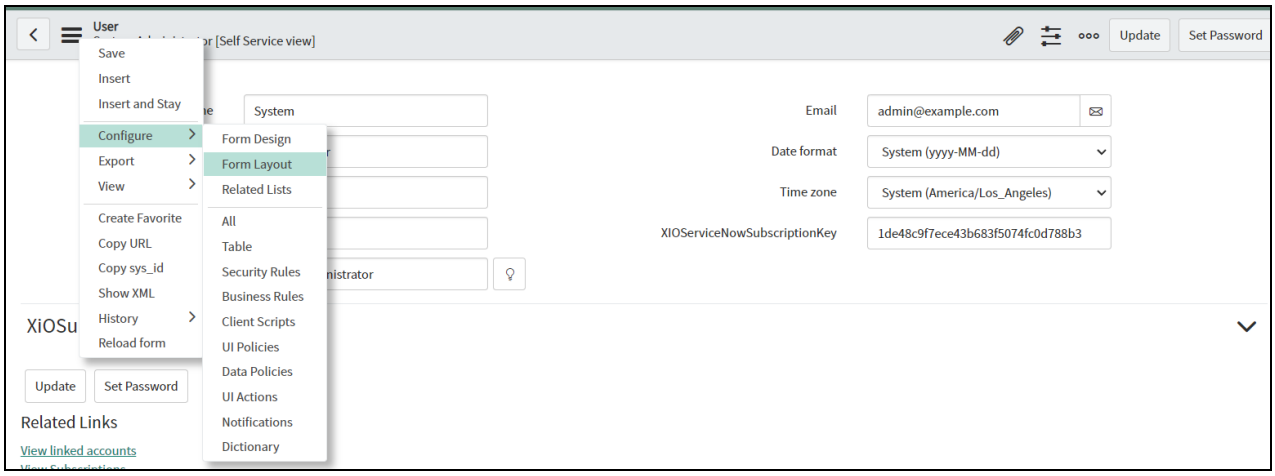
A subscription key must be added to your ServiceNow instance to establish a connection between ServiceNow and XiO Cloud.

To add the required subscription key:

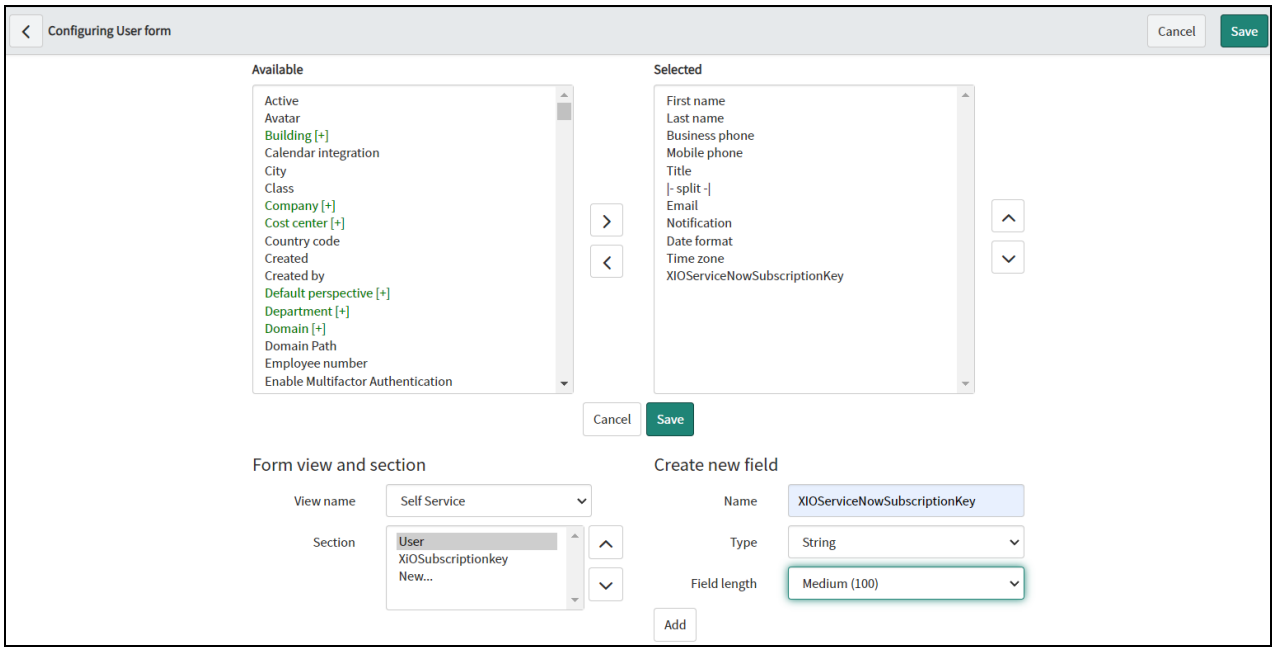
1. Log in to your ServiceNow instance.
2. Select **My Profile** from the right-hand navigation menu.



3. Using the hamburger menu in the top-left corner, navigate to **Configure** > **Form Layout**.



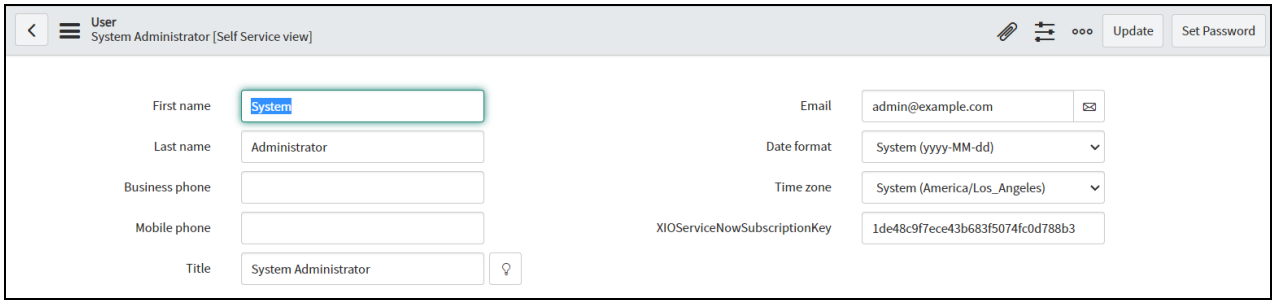
The **Configuring User form** page is displayed.



4. Enter the following information into the **Create new field** section.
    - **Name:** Enter "XIOServiceNowSubscriptionKey" into the text field.
    - **Type**: Select **String** from the drop-down menu.
    - **Field Length**: Select **Medium (100)** from the drop-down menu.
5. Select **Add**. The **XiOServiceNowSubscriptionKey** field is added to the **Available** fields list.
6. Select **XiOServiceNowSubscriptionKey** in the **Available** fields list, and then select the right arrow (**>**) button to move it into the **Selected** fields list.

7. Select **Save**. The **XiOServiceNowSubscriptionKey** field is now shown in the **User** profile page, and the subscription key is populated automatically as long as ServiceNow is turned on in the XiO Cloud tenant.

> **NOTE:** If ServiceNow is already turned on in the XiO Cloud tenant and the subscription key is not populating after completing the steps above, turn off the **Enable ServiceNow** toggle in XiO Cloud and then turn it back on. For more information, refer to Turn on ServiceNow Within XiO Cloud on page 139.

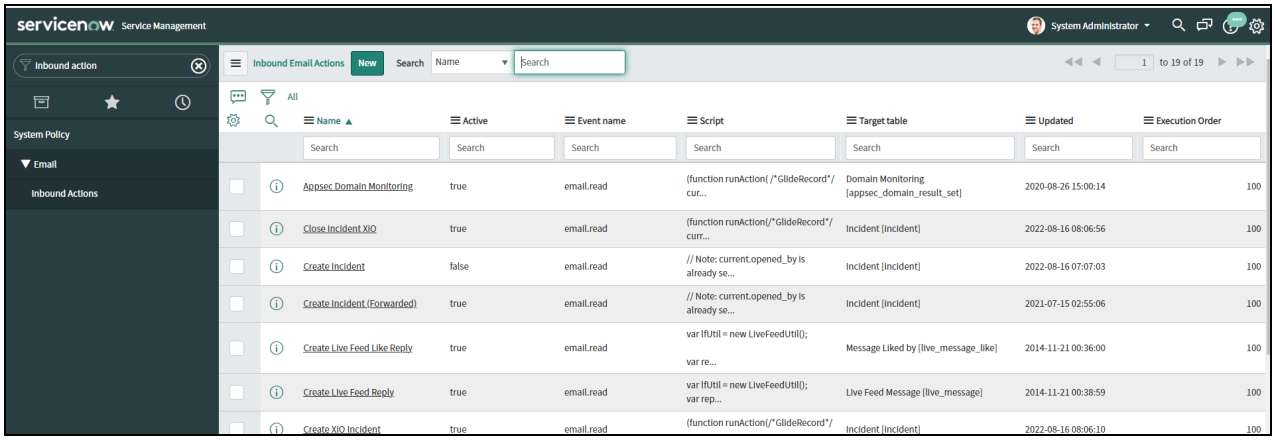


Inbound Actions Setup

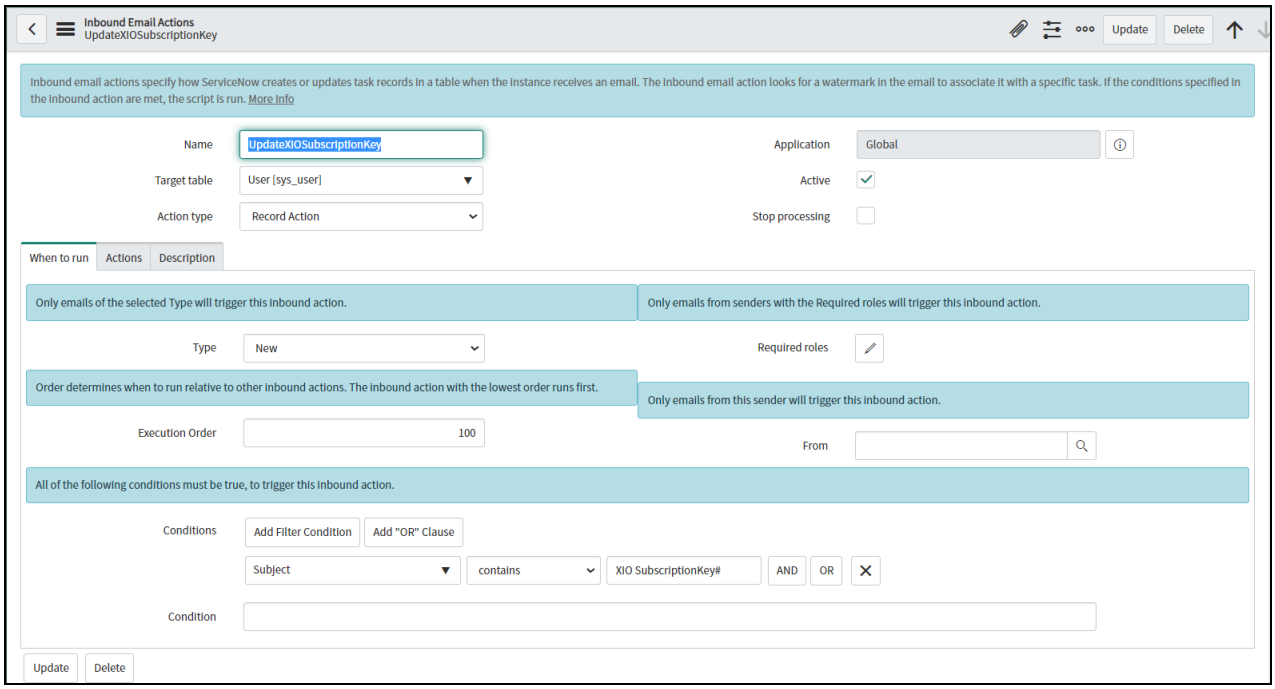
An new inbound action must be created and configured that includes a script for updating the XiO Cloud subscription key within the ServiceNow user profile page.

To create and configure the required inbound action:

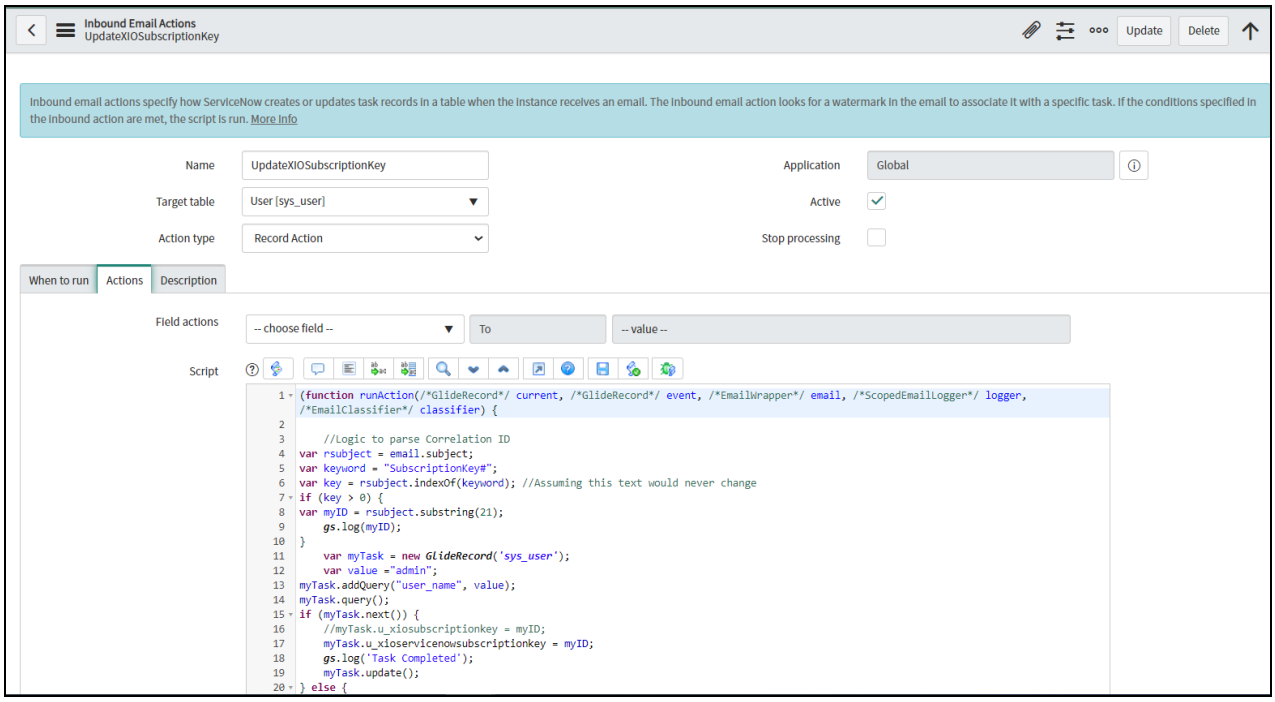
1. Select **Inbound Actions** from the **System Policy** section of the right-hand navigation menu to display all inbound actions for the ServiceNow instance.



2. Select **New** from the top of the inbound actions list. A page for configuring a new inbound action is displayed.



3. Configure the following information for the inbound action:
    - **Name**: Enter "UpdateXiOSubscriptionKey" into the text field.
    - **Target table**: Select **User [sys_user]** from the drop-down menu.
    - **Action type**: Select **Record Action** from the drop-down menu.
4. Select the **When to run** tab (if is not already selected).
5. Create the following new condition: **Subject** / **contains** / **XIO SubscriptionKey#** / **AND** / **OR**.
6. Select the **Actions** tab.
7. Enter the script located within the Processing Script on page 154 topic into the **Script** text box.



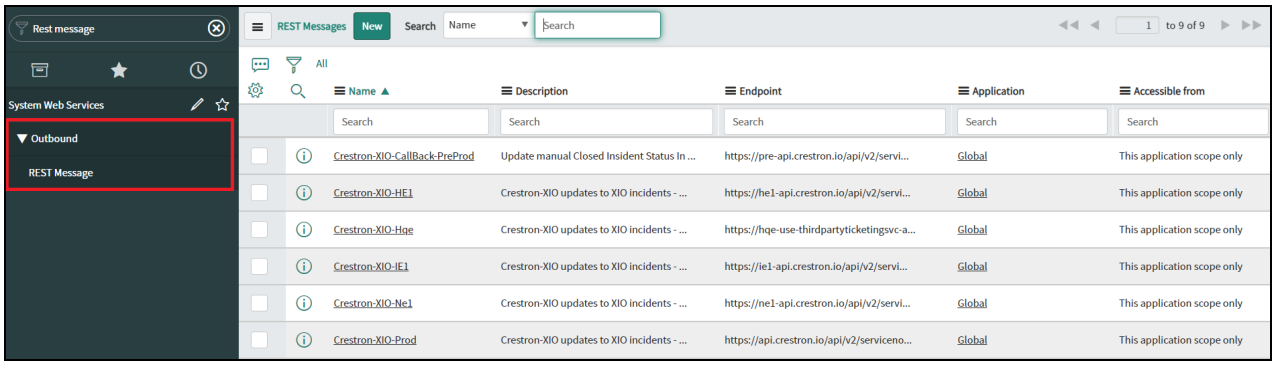
8. Select **Submit** to save the new inbound action. The **UpdateXiOSubscriptionKey** inbound action is added to the ServiceNow instance.

REST Message Setup

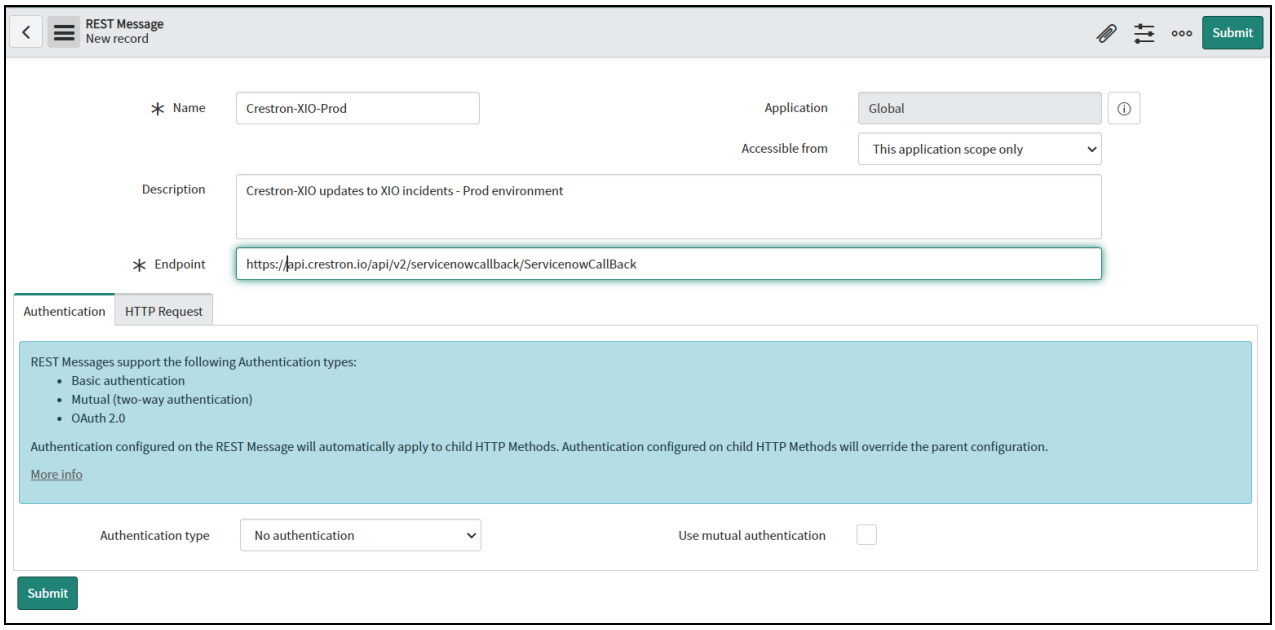
A REST message must be created and configured that invokes the XiO Cloud service when a user changes an incident status to **Closed** from the ServiceNow portal.

To create and configure the required REST message:

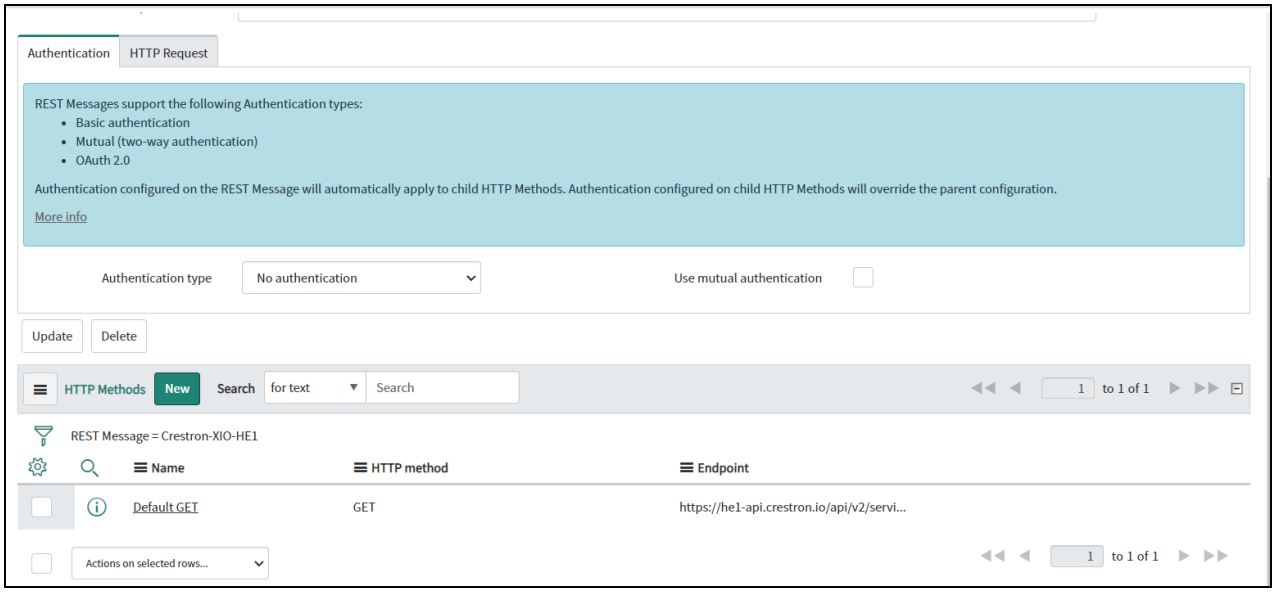
1. Select **Outbound** > **REST Message** from the **System Web Services** section of the right-hand navigation menu to display all REST messages for the ServiceNow instance.



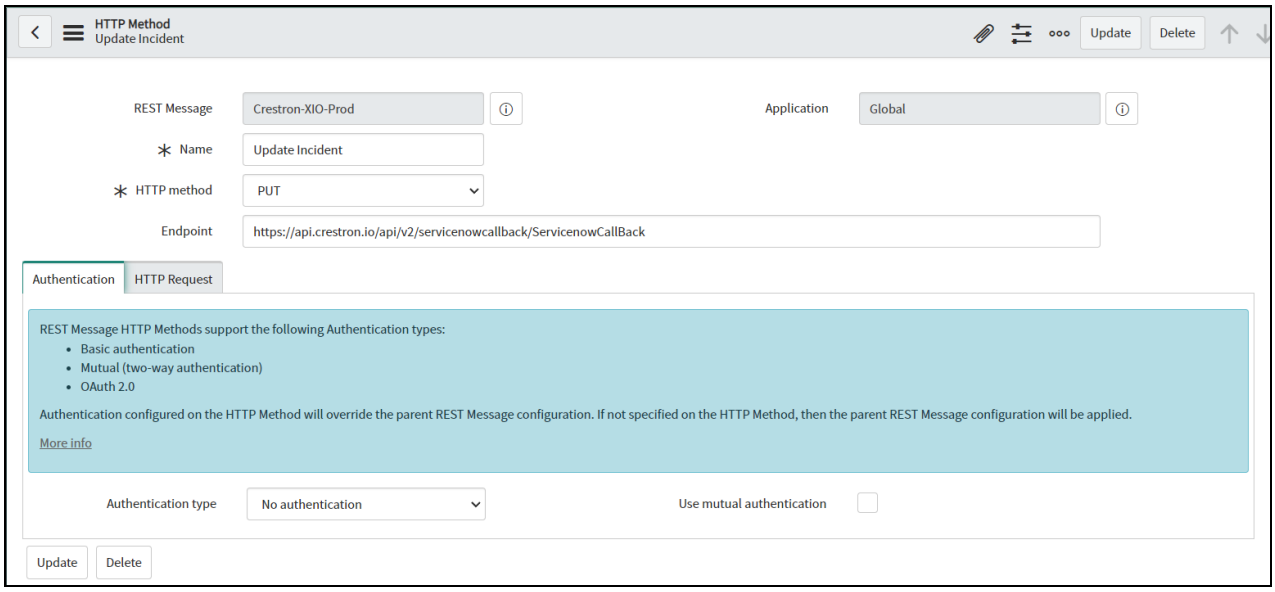
2. Select **New** from the top of the REST messages list. A page for configuring a new REST message is displayed.



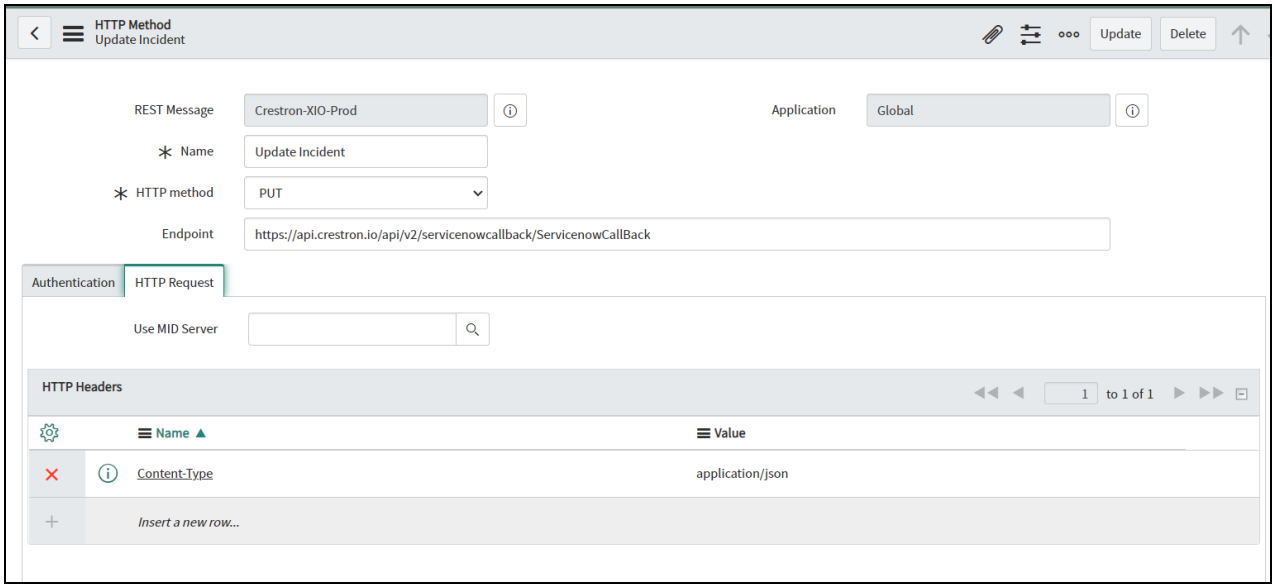
3. Create the new REST message by entering the following information in the provided fields exactly as shown:
    - **Name**: Crestron-XIO-Prod
    - **Description**: Crestron-XIO updates to XIO incidents - prod environment
    - **Endpoint**: https://api.crestron.io/api/v2/servicenowcallback/ServicenowCallBack
4. Select **Submit** to save the new REST message. The **Crestron-XIO-Prod** REST message is added to the ServiceNow instance.
5. Reopen the **Crestron-XIO-Prod** REST message.



6. Under the **HTTP Methods** section, select the **Default Get** method. A page for editing the REST message method is displayed.



7. Enter the following information for the HTTP method in the provided fields:
    - **Name**: Update Incident
    - **HTTP Method**: PUT
    - **Endpoint**: https://api.crestron.io/api/v2/servicenowcallback/ServicenowCallBack
    - **Authentication type**: No authentication
8. Select the **HTTP Request** tab.

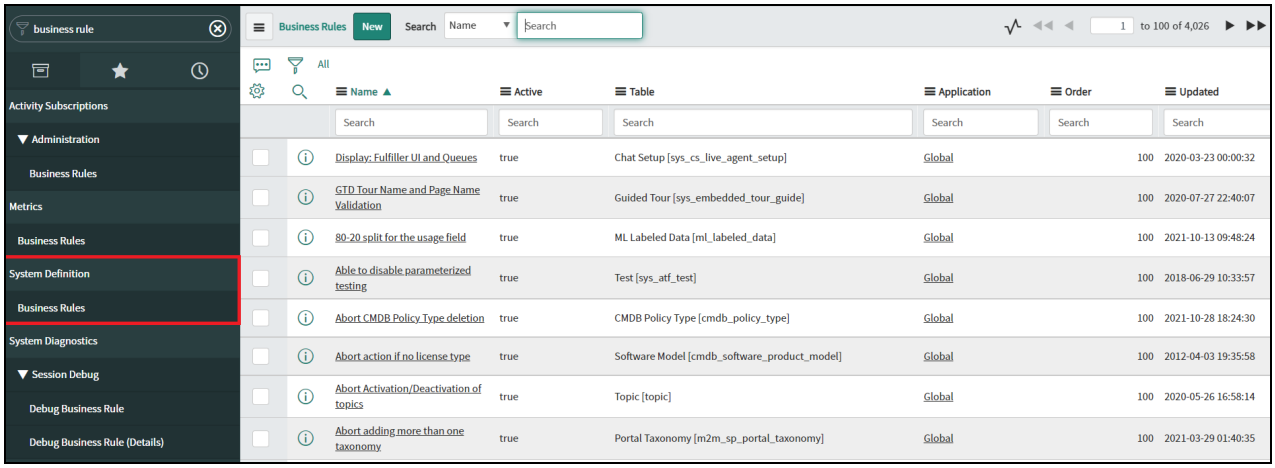


9. Add the following new HTTP header:
    - **Name**: Content-Type
    - **Value**: application/json
10. Select **Update** to save the REST message.

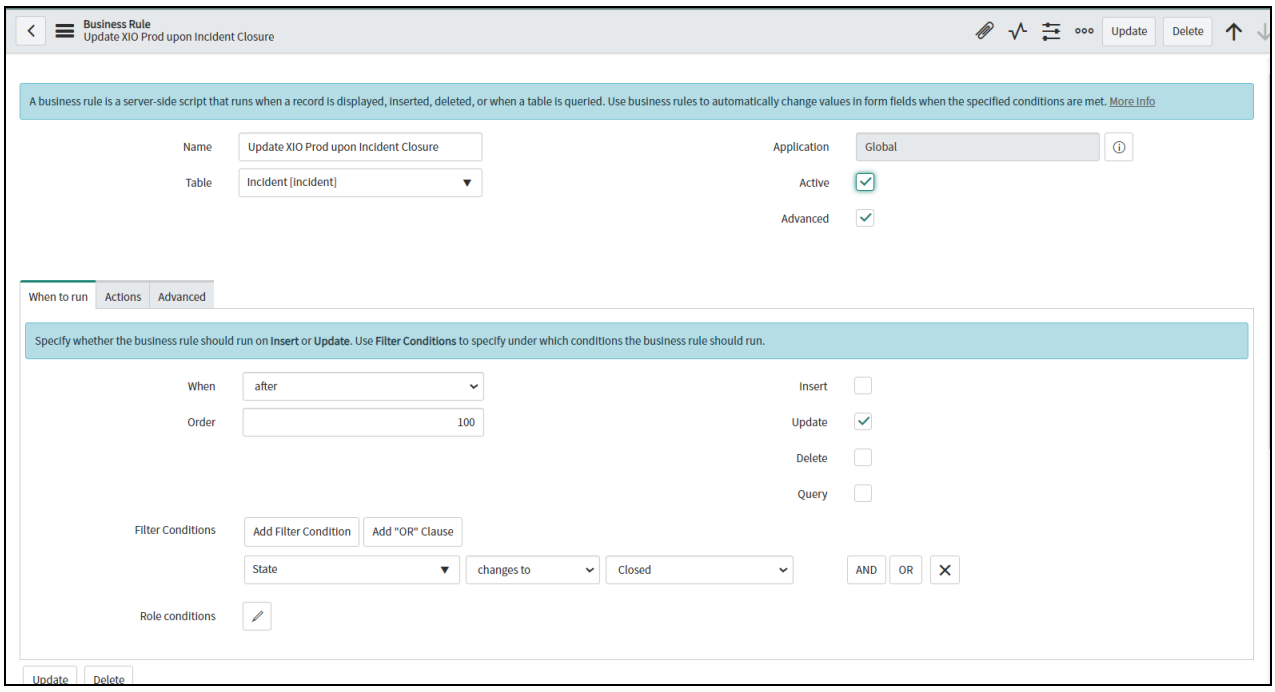
Business Rule Setup

A business rule must be created and configured that includes a script for calling the REST message when an incident status is changed to **Closed** within the **Incident Table** in ServiceNow.

1. Select **Business Rules** from the **System Definition** section of the right-hand navigation menu to display all system definition business rules for the ServiceNow instance.



2. Select **New** from the top of the business rules list. A page for configuring a new business rule is displayed.



3. Enter the following information for the business rule in the provided fields:
    - **Name**: Update XIO Prod upon Incident Closure
    - **Table**: Incident [Incident]
    - **Application**: Global
    - **Active**: Fill the check box
    - **Advanced**: Fill the check box
4. Populate the business rule data by selecting the **Advanced** tab and then adding the XML script located within the Business Rule Script on page 155 topic.
5. Select **Submit** to save the new business rule.

Test the Connection

To test that the incident closing behavior works as expected, create a new incident in ServiceNow, and then toggle the state from **New** to a different state and then back to **New**. A request for a new correlation ID will be generated. Then, update the incident with the new correlation ID and mark the incident as **Closed**. The incident should also be closed in XiO Cloud following this test.

Processing Script

The following script is used when configuring an inbound action to update the XiO Cloud subscription key within the ServiceNow user profile page. Refer to Inbound Actions Setup on page 147 for more information.

```
(function runAction(/*GlideRecord*/ current, /*GlideRecord*/ event, /*EmailWrapper*/ email,
/*ScopedEmailLogger*/ logger, /*EmailClassifier*/ classifier) {

    //Logic to parse Correlation ID
var rsubject = email.subject;
var keyword = "SubscriptionKey#";
var key = rsubject.indexOf(keyword); //Assuming this text would never change
if (key > 0) {
var myID = rsubject.substring(21);
    gs.log(myID);
}
    var myTask = new GlideRecord('sys_user');
    var value ="admin";
myTask.addQuery("user_name", value);
myTask.query();
if (myTask.next()) {
    //myTask.u_xiosubscriptionkey = myID;
    myTask.u_xioservicenowsubscriptionkey = myID;
    gs.log('Task Completed');
    myTask.update();
} else {
// No match found so log an error
    gs.info('No Match found');
}

})(current, event, email, logger, classifier);
```

Business Rule Script

The following script is used when creating a new business rule to set the incident closing behavior. Refer to Business Rule Setup on page 152 for more information.

```
(function executeRule(current, previous /*null when async*/) {

    var myTask = new GlideRecord('sys_user');
    var value ="admin";
myTask.addQuery("user_name", value);
myTask.query();
if (myTask.next()) {
    var XiOSubscriptionKey = myTask.getValue('u_xioservicenowsubscriptionkey');
    gs.log('Task Completed');
} else {
// No match found so log an error
    gs.info('No Match found');
}

    try {

        if (XiOSubscriptionKey) {
            var incObj = {
                sys_id: current.getUniqueValue(),
                state: current.getDisplayValue('state'),
                short_description: current.getValue('short_description'),
                number: current.getDisplayValue('number'),
                assignment_group: current.getDisplayValue('assignment_group'),
                assigned_to: current.getDisplayValue('assigned_to'),
                correlation_id: current.getValue('correlation_id'),
                XiO_subscription_key: XiOSubscriptionKey,
            };

            try {
                var xioRequest = new sn_ws.RESTMessageV2('Crestron-XIO-Prod', 'Update Incident');
//Specific name of the Rest Endpoint
                xioRequest.setRequestBody(JSON.stringify(incObj));
                xioRequest.setRequestHeader("XiO-subscription-key",XiOSubscriptionKey);
                var response = xioRequest.execute();
                var responseBody = response.getBody();
                var httpStatus = response.getStatusCode();
                gs.addInfoMessage(responseBody); //Remove upon conclusion of testing
            } catch (ex) {
                var message = ex.message;
                gs.error("Unexpected error encountered during XIO Update Incident.  " + message);
            }
        }
    } catch (e) {
        gs.error("Unexpected error encountered during XIO Token Request. " + e.message);
    }

})(current, previous);
```

Additional Resources

The following resources are provided to assist users with implementing this functionality.

- ServiceNow Paris Platform Documentation
- ServiceNow Development Documentation
- ServiceNow Inbound Action Documentation
- ServiceNow Community Form
- JavaScript Documentation

Appendix B: User Access Matrix

The following table shows the tasks that can be performed for different user access levels.

Task	Global Admin	Standard User	Standard User (Admin)	Standard User (Tech)	Standard User (Viewer)	Standard User (Hidden)
View devices in device tree	✓	Use groups	✓	✓	✓	✗
View **Status** tab	✓	Use groups	✓	✓	✓	✗
View **Settings** tab	✓	Use groups	✓	✓	✓	✗
View **Licenses** tab	✓	Use groups	✓	✓	✓	✗
View **Activity Log** tab	✓	Use groups	✓	✓	✓	✗
View **Dashboard** tab	✓	Use groups	✓	✓	✓	✗
View **Scheduled Actions** tab	✓	Use groups	✓	✓	✓	✗
View **File Management** tab	✓	Use groups	✓	✓	✓	✗
View **Remote Control** tab	✓	Use groups	✓	✓	✗	✗
Change device or group settings	✓	Use groups	✓	✓	✗	✗
Add or remove licenses on devices	✓	Use groups	✓	✓	✗	✗
Create scheduled actions	✓	Use groups	✓	✓	✗	✗
Control devices remotely	✓	Use groups	✓	✓	✗	✗
Load a file to a device slot	✓	Use groups	✓	✓	✗	✗
Start/stop or register/unregister a device program	✓	Use groups	✓	✓	✗	✗
Update firmware	✓	Use groups	✓	✓	✗	✗
Reboot devices	✓	Use groups	✓	✓	✗	✗
Clear alerts	✓	Use groups	✓	✓	✗	✗

Task	Global Admin	Standard User	Standard User (Admin)	Standard User (Tech)	Standard User (Viewer)	Standard User (Hidden)
Add devices to a group	✓	Use groups	✓	✓	✗	✗
Rename a group	✓	Use groups	✓	✓	✗	✗
Delete a group	✓	Use groups	✓	✓	✗	✗
Add or modify program and project files	✓	Use groups	✓	✓	✗	✗
Change user access to a group	✓	✗	N/A	N/A	N/A	N/A
Add subgroups	✓	Use groups	✓	✗	✗	✗
Add top-level groups	✓	✗	N/A	N/A	N/A	N/A
Claim devices	✓	✗	N/A	N/A	N/A	N/A
Download inventory	✓	✗	N/A	N/A	N/A	N/A
Add alerts	✓	✗	N/A	N/A	N/A	N/A
Enable remote control functionality	✓	✗	N/A	N/A	N/A	N/A
Invite new users	✓	✗	N/A	N/A	N/A	N/A
Delete users	✓	✗	N/A	N/A	N/A	N/A
Change user roles	✓	✗	N/A	N/A	N/A	N/A
Change user profile information	✓ (any user)	✓ (for self)	N/A	N/A	N/A	N/A
Change alerts received by a user	✓ (any user)	✓ (for self)	N/A	N/A	N/A	N/A
View cloud activity logs	✓	Use groups	✓	✓	✓	✗
Request device logs	✓	Use groups	✓	✓	✗	✗
View downloaded device logs	✓	Use groups	✓	✓	✓	✗
Modify alerts	✓	✗	N/A	N/A	N/A	N/A
Modify account settings	✓	✗	N/A	N/A	N/A	N/A
Modify services (room licensing)	✓	✗	N/A	N/A	N/A	N/A
Modify support providers	✓	✗	N/A	N/A	N/A	N/A

Task	Global Admin	Standard User	Standard User (Admin)	Standard User (Tech)	Standard User (Viewer)	Standard User (Hidden)
Manage files	✓	✗ (read only)	N/A	N/A	N/A	N/A
Manage EDIDs	✓	✗ (read only)	N/A	N/A	N/A	N/A
Manage images	✓	✗ (read only)	N/A	N/A	N/A	N/A
Add users	✓	✗	N/A	N/A	N/A	N/A
Delete users	✓	✗	N/A	N/A	N/A	N/A
Reset user account password	✓ (any user)	✓ (for self)	N/A	N/A	N/A	N/A
Power on/off (displays)	✓	Use groups	✓	✓	✓	✗
Power on/off (PDUs)	✓	Use groups	✓	✓	✓	✗
Source routing	✓	Use groups	✓	✓	✓	✗

Crestron Electronics, Inc.
15 Volvo Drive, Rockleigh, NJ 07647
Tel: 888.CRESTRON
Fax: 201.767.7656
www.crestron.com

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04/24/23
Specifications subject to
change without notice.