Connect+

Advanced User Guide

EMERSON

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1 What is Connect+

Connect+ is an Enterprise Management Software designed to monitor your store or region performance in real time. Currently Connect+ supports Emerson Controllers E2, Site Supervisor and E3 and distributed controllers.

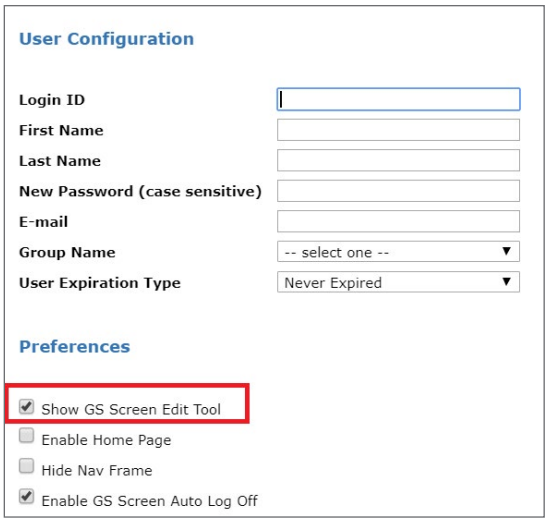
This document provides a **step-by-step guide for Power Users** on how to use Connect+ to create floor plans and optimize your store operation. The below topics are covered in this guide:

- How to create Floor Plans and Summary Screens
- How to configure Advisory Notifications using Forward Advisory
- How to edit an Application Instance from Connect+
- How to change Enterprise Lighting Schedule, User Access, Case Controller settings and other parameters with Setpoint Broadcast.
- How to backup and restore Controller Setpoint Files
- How to upload description files and language packages to a controller.
- How to perform a firmware upgrade through Connect+

2 Create Customized Graphical Screens

A **Graphical Status Screen** is a customized floor plan that can be drawn according to user requirements. It can show all points on a single page with real-time value for multiple entities within the store for your quick view.

Show GS Screen Edit Tool from user profile. The default **Show GS Screen Edit Tool** is disabled. You should click the check box to enable it.

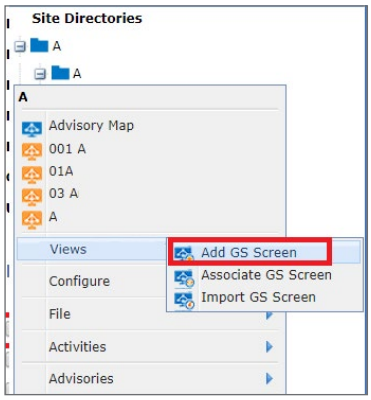


Graphical Status Screen

GS screens can be kept private or published to the Navigation Tree for other users to access. When a GS screen is published, all Connect+ users will be able to view it. The context menu will allow you to view existing GS Screens or build new ones at every level in the Navigation Tree.

For example, if you need a screen for a condenser, all screens must be created specific to their level. In other words, there will be nothing generic because all GS pages that are associated with a certain node in the tree will be visible on that node's context menu.

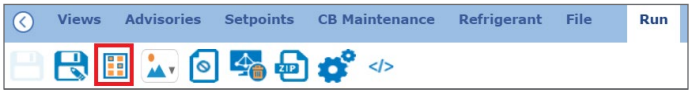
Select **Views** > **Add GS Screen** from the right-click menu on the Navigation Tree.



Adding GS Screen

2.1 Quick Create GS Screen

After selecting the **Add GS Screen**, you will see the GS Screen toolbar. Click the **Add Widgets Palette** to create your own GS screen.

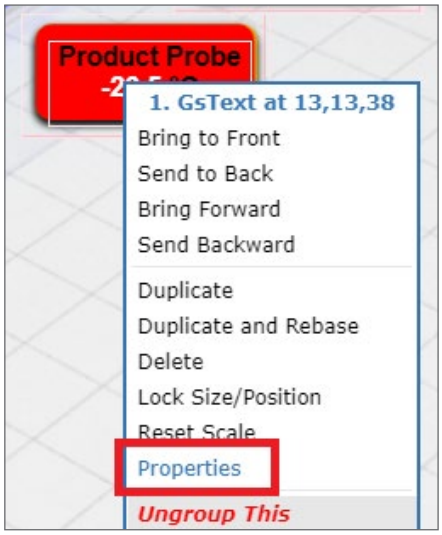


Widget Palette

Select the desired widget.

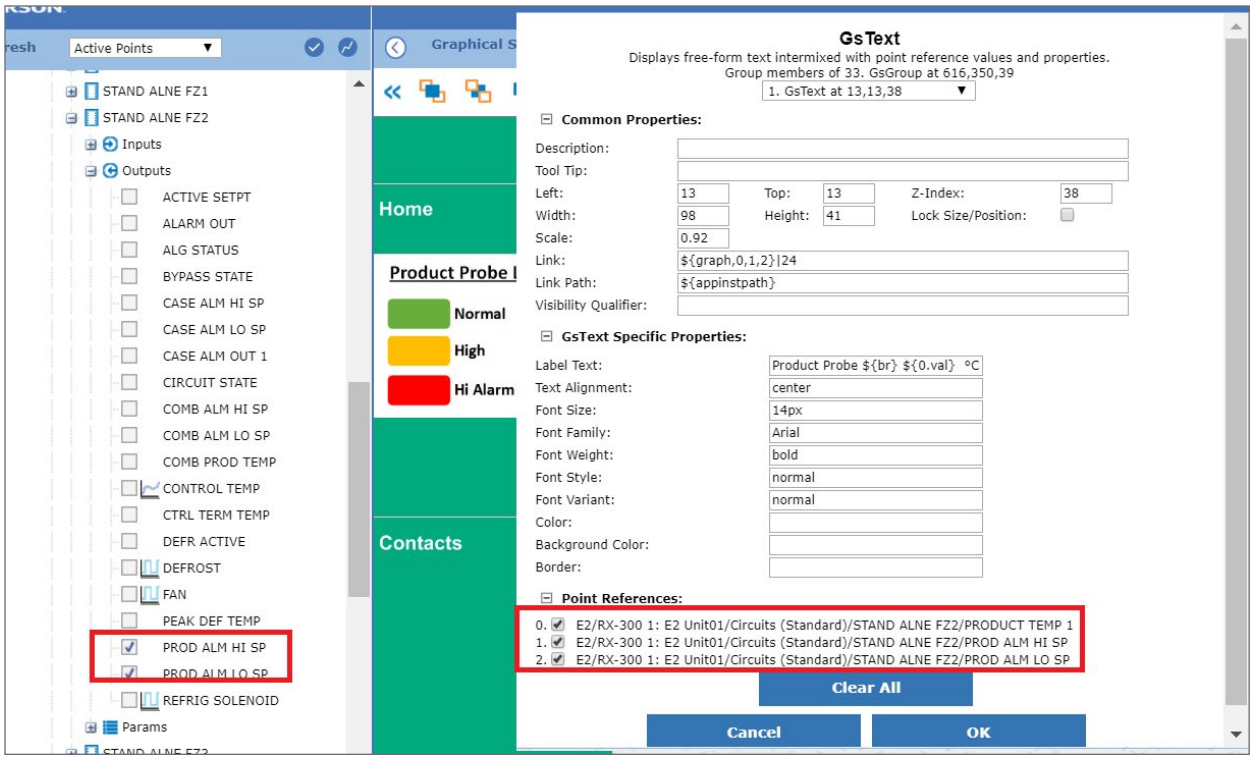
Selecting Desired Widgets

Right-click on the widget for editing capabilities and properties, you can select **Properties** to open the Editor.



Properties

Add any desired points by selecting the point check-boxes in the navigation tree. After you select the points from navigation tree, the points will automatically show under **Point Reference** on the **Properties** page. That means the point is associate to the widget. The widget will show associated points and value.

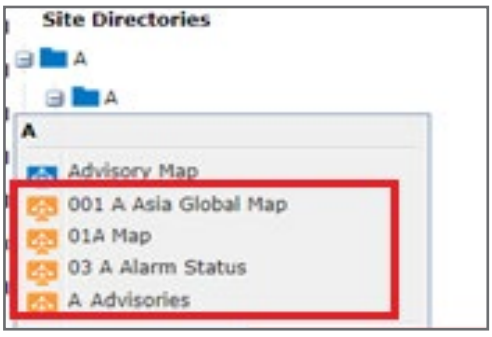


Point Reference

2.2 Save GS Screen

After the GS screen is completed, you can click the **Save** icon to save your own GS screen. A Save GS Screen window opens and will ask you to name your GS Screen.

Enter a name for the GS Screen and click **OK**. Your GS Screen will be saved. You can check the new GS screen from the tree node menu (right click on the tree node).



Save GS Screen

Once you have saved the GS Screen, the save icon will be gray and cannot be selected.

Screen Widget

After creating a GS Screen, toggle the **Edit** button to **Run** mode to see the GS Screen become active and show real-time values.

2.3 Run/Edit GS Screen

Edit Mode: If you are adding or creating a GS Screen, you are automatically in **Edit** mode when you first arrive at this page. The Run button indicates that you are in Edit mode. In this mode, you can edit the GS Screen.

Run Mode: After a GS Screen has been created and you arrive at a saved GS Screen, you are automatically in Run mode. **Run** mode shows the GS Screen operating in real-time. You can see the **Edit** button shows in the menu.

Toggle this button to go back and forth between modes.

Edit GS Screen

Run GS Screen

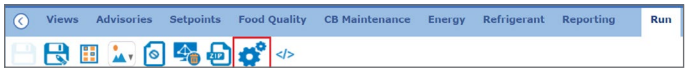
2.4 Delete GS Screen

If you want to delete a GS Screen, you can click the **Run/Edit** toolbar to edit the GS Screen. Click the **Delete** icon to remove the GS Screen.

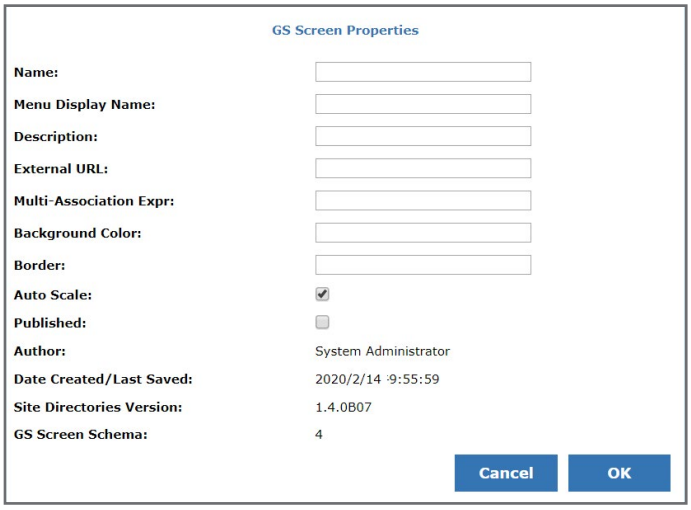
Deleting GS Screen

2.5 Property of GS

In **GS Screen Edit** mode, this GS Screens properties menu is located on the **GS Screens** tool bar. Selecting the **Properties** icon will open the **GS Screen Properties** window and display all properties that belong to the GS Screen currently being viewed.



GS Screen for Properties



GS Screen Properties

Properties:

- The **Name** given to the GS Screen is displayed.
- **Menu Display Name** is how the GS Screen name will appear when displayed on the menu.
- **Description** is a brief description of the GS Screen.
- **External URL** is the GS Screen URL that can be used for referencing the GS Screen location externally.
  - » **Multi-Association Expr** is the Javascript expression that is evaluated by the tree in order to create a rule for associating a screen to multiple tree nodes or location.
  - » **Background Color**: Specify a color value to set the background color of the screen, defined like any other CSS color is defined (for example, blue, green, red, or #fabc09 can be entered).
- **Border**: Specify this property to add a border around the GS Screen. For example, entering "5px solid blue" would create a 5-pixel solid blue border (CSS style).
- With **Auto Scaling** enabled, the GS Screen automatically scales up to fit the size of the window.
- When this **Published** check box is checked, the GS Screen will be made public
- **Author**: Read-only field that shows the author of the GS Screen (the originator of the screen or who imported it).
- **Date Created/Last Saved**: Read-only field that shows the date/time the GS Screen was created or last imported.
- **Site Directories Version**: Read-only field that shows the current Connect+ software version.
- **GS Screen Schema**: It indicates the version number of the GS Schema. This number changes whenever structural changes to the screen design changes.

2.6 Copy/Paste GS Screen

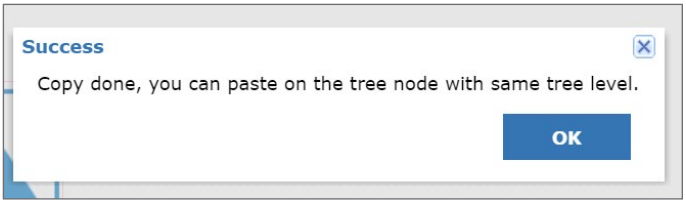
If you want to create one Graphical Screen and use the similar screen on another same-level tree node but with different point mapping, you can use Copy/Paste GS Screen function.

Copy/Paste can only be used on a customized Graphical Screen.

In GS Screen Edit mode, you can see the **Copy** menu is located on the **GS Screens** tool bar.

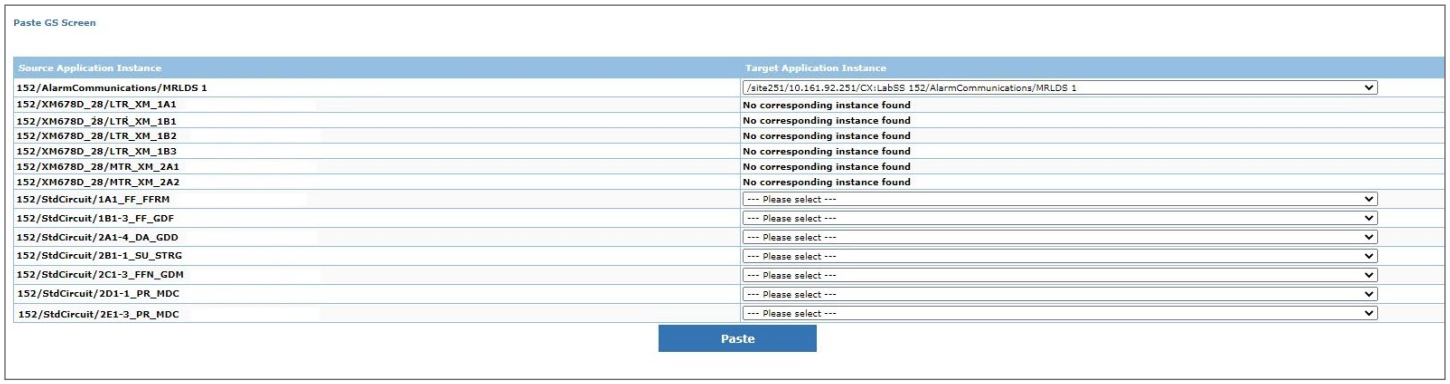
GS Screen Copy and Pasting

Click the **Copy** menu and a copy completed message appears, which you can paste on another same-level tree node



Copy Competed Message

You can right-click the tree node of the same level and select **Views** > **Paste GS Screen**. A mapping table will appear and allow you to choose the correct mapping instance.



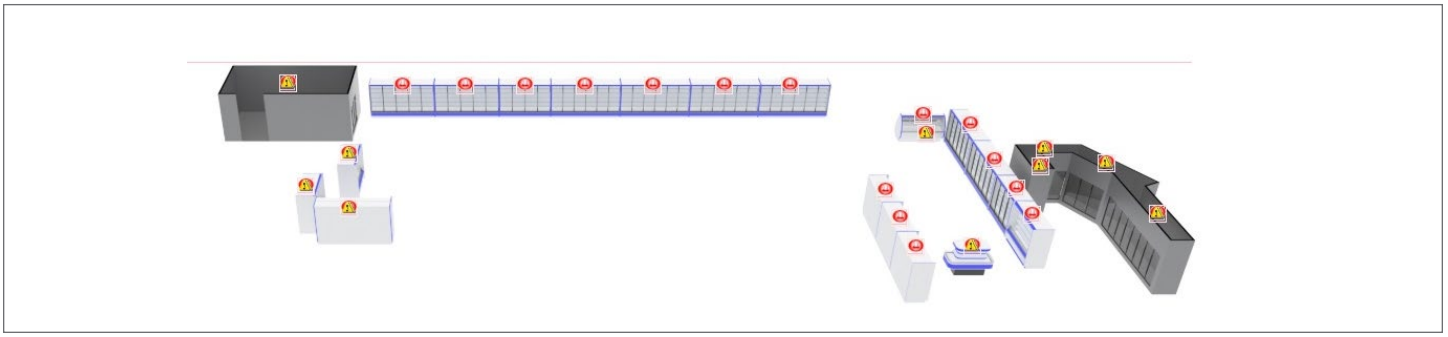
Mapping Table

Source Application Instance: The path of the application instance that is associated in the copied Graphical Screen.

Target Application Instance: The path of the application instance that will be associated to the copied Graphical Screen. The instance whose type is same as the Source Application Instance will be listed in the **Target Application Instance** drop-down. Choose the desired Instance for mapping.

If the target Application Instance name is same as the source Application Instance name, it will be pre-filled. You can change the Instance by selecting another one from the drop-down list. But if there is no corresponding Application Instance of the Target Application Instance, a **No corresponding Instance found** message will appear.

After the mapping configuration is done, click the **Paste** button. The copied GS Screen will be displayed.



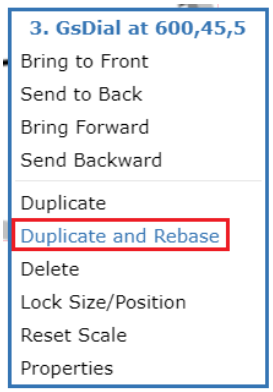
Graphical Screen

After pasting the GA Screen, widgets with exclamation marks may appear. This indicates the point associated to the widget cannot be found for the pasted tree node.

Right- click on the widget, and select **Properties** to remove the existing points and re-map them, or use **Duplicate and Rebase** to replace the point.

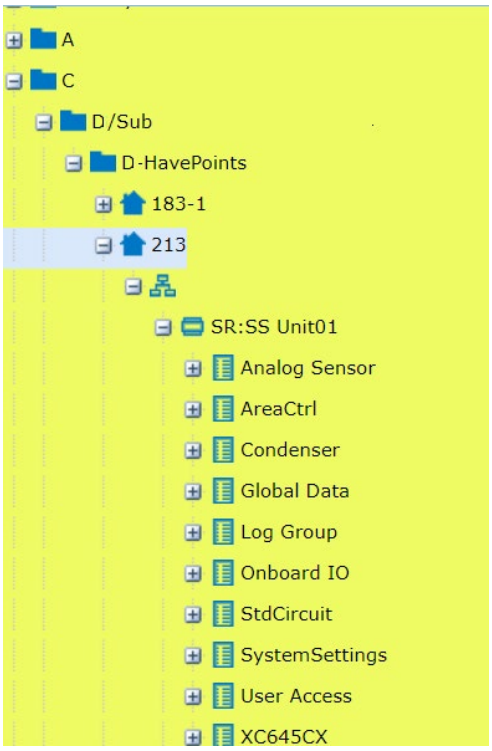
Duplicate and Rebase:

Right- click on the **widget,** and select **Duplicate and Rebase**.



Duplicate and Rebase

You will see a duplicate widget and at the same time the tree background will be highlighted yellow.



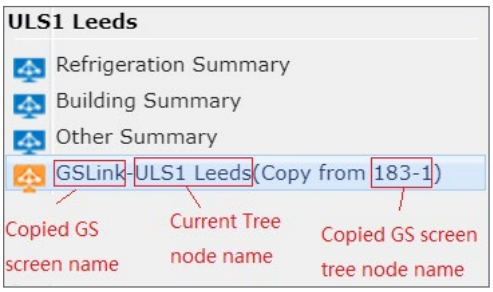
Tree Background

Clicking one desired application instance whose application type is same as the original one will cause the background to disappear.

Go to the **Properties** of the widget, to see points are automatically synced to the selected Instances.

For the pasted GS screen name, you can see it displayed as ***Copied GS Screen name-tree node name***

(copied from ***old tree node name***) from the right-click menu of the tree node.

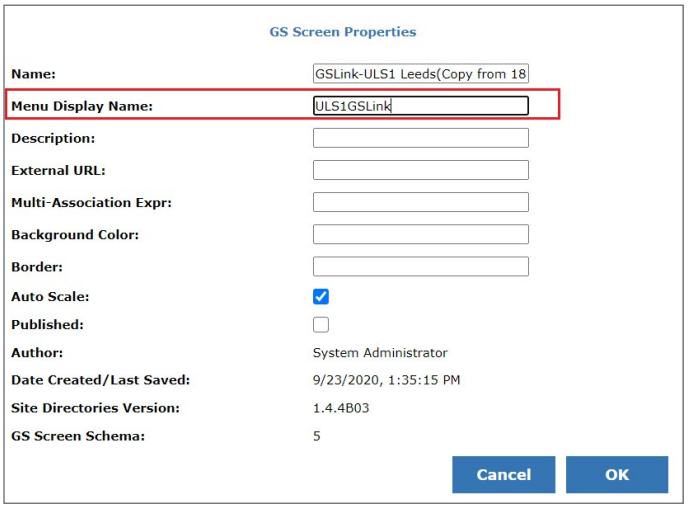


Tree Node

If you want to change the GS screen name, you can click **Properties** menu from GS Screen tool bar.

Changing GS Name

And provide a **Menu Display Name**.



Providing Menu Display Name

Click **OK** from the Properties page and click **Save** the GS Screen.

Saving GS Screen

You will see the menu is updated from the tree node.

Updated Tree Node

2.7 Export GS Screen

You can export a GS screen and send the floor plan to another user for viewing. All GS Screens that are exported will be saved in .ZIP format.

To export the GS Screen, click the export icon in **Edit** mode.

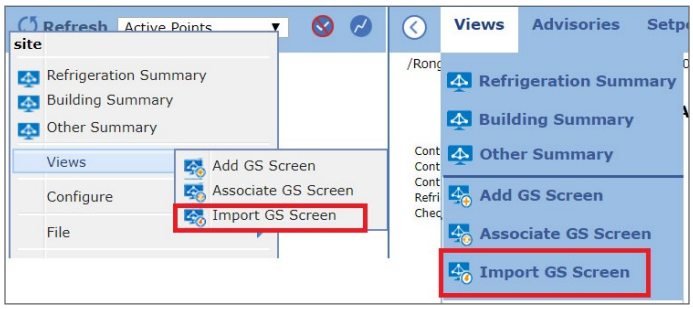
Export GS Screen

After exporting the GS screen, you will see a zip file with the GS screen name that has been downloaded.

2.8 Import GS Screen

Importing a GS screen allows you to view and work with a GS screen (that another user may have sent to you) before it is published in the system for all users to see. It will be visible in your Navigation Tree view, but not to other users.

You can import the GS Screen from its associated place on the navigation tree or toolbar manual.

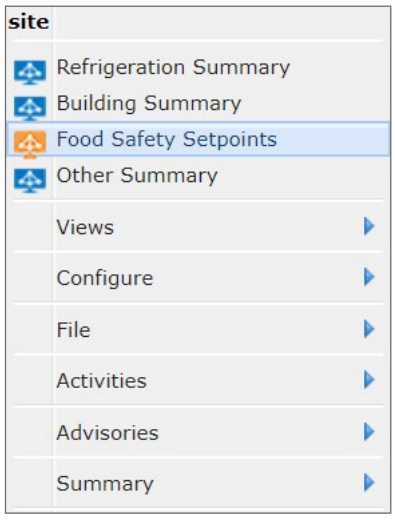


Import GS Screen

Choose a file that you want to import and click the **Import** button.

Choose a file to Import

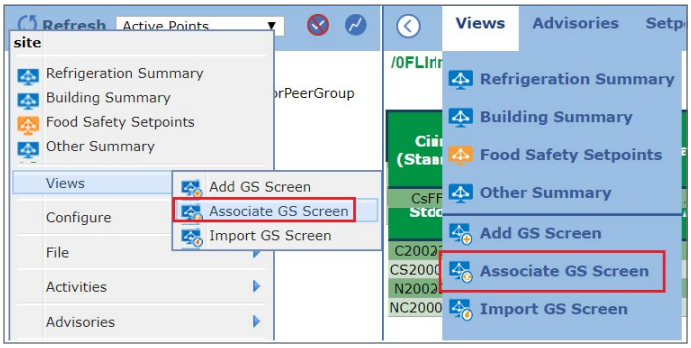
After importing is complete, the new GS screen will be listed on the context menu for that node in the navigation tree.



Navigation Tree

2.9 Associate GS Screen

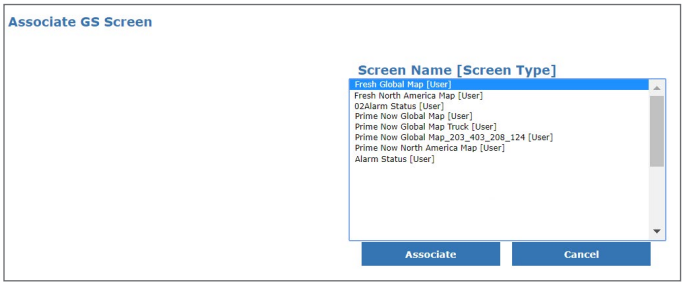
GS Screens can be associated with more than one node or position on the navigation tree. To associate a GS Screen to a particular node or position on the navigation tree, click **Associate GS Screen** from the navigation tree menu or the toolbar menu.



Associate GS Screen

The list is restricted to display only the appropriate level GS Screens. Only the GS Screens that have been published or GS Screens that were created by logged-in users are included in the list. If no screens are listed, no screens have been created for the selected navigation tree-level node. Once a screen has been associated to a specific node on the tree, it will be removed from the list for that node.

Select one GS Screen from the table to associate. After the selection is complete, click the **Associate** button.



Associate Button

When associating is done, the selected GS Screen can be associated to the tree.

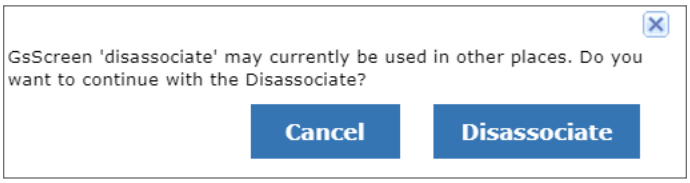
Associating GS Screen to the Tree

2.10 Disassociate the GS Screen

You can disassociate a GS Screen from the node on the navigation tree it is associated with. Open the GS Screen you would like to disassociate with its current node. Make sure you are in Edit mode and click **Disassociate** from GS Screen menu.

Disassociating from the GS Screen Menu

You will see a message to confirm if you wish to disassociate the GS Screen.



Disassociate the GS Screen

Click the **Disassociate** button. The GS Screen will be disassociated from the current node and can then be associated with another node somewhere else on the tree.

2.11 Print GS Screen

While viewing a GS Screen, you will see a **Print** icon at the topmost right corner of the screen.

Print Icon

Click the icon to export GS Screen a PDF.

2.12 Widgets

2.12.1 Widget Properties

The widget context menu allows you to change the layer positioning of the widget on the GS Screen, duplicate (create additional copies of the widget on the page), delete the widget, or go to the Image Properties editor of the widget, which gives you further configuration options. Right-click on a widget in Edit mode to show the widget context menu.

Widget Content Menu

You can change the settings of each widget with these actions:

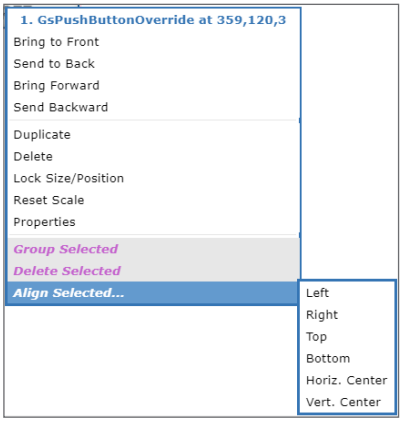
- **Bring to Front**: Positions the widget to the top, in front of all other widgets.
- **Send to Back**: Positions the widget behind all other widgets.
- **Bring Forward:** Positions the widget one layer down.
- **Send Backward**: Positions the widget one layer up.
- **Duplicate**: Creates a copy of the widget along with its properties.
- **Delete**: Removes the widget from the screen. Selected widgets and grouped widgets can also be deleted by pressing the **Delete** or **Del** keys on your keyboard.
- **Lock Size/Position**: Saves and holds the most recently set size and position of the widget so it is locked out of clicking, dragging, and other changes. The widget selection handles will turn purple to indicate the widget is locked. When the widget is in lock mode, this menu option will read Unlock Size/Position. Click **Unlock** to release the widget.
- **Properties**: Displays the widget **Property** menu for more configuration options for each widget. The Properties menu options for widgets will vary depending on which type of widget you choose.
- **Reset Scale**: Click this option to return to the previously configured widget size.
- **Convert to Sub-Screen (if available)**: Zone widgets allow you to create a new GS screen based on a portion of another screen.
- **Duplicate and Rebase (if available)**: Click this option to duplicate the widget. Just as the **Duplicate** option, but additionally the widget will enter a special mode where you can select a different Application Instance (or any node except a point node) to use as a new base for all the references in the widget.

Any previously selected widgets will be unselected and the new duplicated widget will be selected (the Duplicate action by itself will not do this) and the screen editor and main tree will go into a special mode where you must now select a new node from the main tree to use as a base for all the references in the widget(s). The tree background will be highlighted yellow, and a pop up bubble will display with instructions and a **Cancel** link to exit this mode. Canceling will not remove the duplicated widget but will cause the widget to have the same references based on where they were in the widget from which it was duplicated from.

The tree will automatically synchronize to the application instance of the first reference of the widget being duplicated when first entering this mode (because in most cases the designer would probably want to select the next application instance in sequence after it.) You may continue to edit widgets in any way while in this special mode, and even select other widgets. Once clicking on a node in the tree, all selected widgets will be "rebased" to that node. Group widgets that are selected will also have all their sub-widgets rebased in this way. Undo by pressing Ctrl+Z just like any other editing action can be undone.

2.12.2 More Widget Editing

- **Selecting Multiple Widgets**: Multiple widgets can be selected by using the mouse to click and drag to enclose widgets within a selection rectangle, or by pressing the **Shift** key while clicking desired widgets. After you have selected multiple widgets, they can be grouped using the right-click menu option.
- **Deselecting**: To deselect widgets, click the area outside the widget(s).
- **Resizing/Scaling**: All widget types can be resized by clicking on the widget and using the red selection handles that appear on the edges. Drag the edges to resize and the entire image will scale. Note that real-time indication of x, y position is shown automatically when moving widgets. (Reminder: Click **Reset Scale** return to the last saved widget size.)
- **Alignment**: Before grouping widgets, you can fine-tune the widgets' placement right by selecting **Align Selected** on the widget's right-click menu. Widgets move in one-pixel increments.



Widget Menu

  - » **Left**: Aligns selected widgets to the left.
  - » **Right**: Aligns selected widgets to the right.
  - » **Top**: Aligns the top of the widgets equal (flush) with each other.
  - » **Bottom**: Aligns the bottom of the widgets equal (flush) with each other.
  - » **Horiz. Center**: Centers the widgets equally horizontal depending on the starting position of the widgets. For example, if the widgets are vertical to each other to begin, one will be placed on top of the other, hiding the widget. To undo, click the area outside of the widgets.
  - » **Vert. Center**: Stacks the widgets equally vertical (one above the other) depending on the starting position of the widgets. For example, if enough space separates the widgets to begin, they will be stacked one directly above the other. Widgets will overlap if there is a negligible amount of space separating them before vertically centering occurs. To undo, click the area outside of the widgets.
- **Grouping:** After selecting the widgets to be grouped, click the **Group Selected** option on the widget right-click menu. The selected widgets are now grouped together and will allow you to move them as a whole. Red boxes will appear around the grouped widgets as a whole and disappear from around individual widgets. To undo, choose from two options that appear on the widget right-click menu:
  - » **Ungroup This**: Ungroups a single widget with-in the group. Place the cursor on the widget you wish to ungroup and select **Ungroup This**. To finish separating, click off the widget and then reselect it to move. Red boxes will reappear at the corners of the widget to indicate it has been ungrouped.
  - » **Ungroup Group**: Ungroups all widgets within a group. Red boxes will reappear at the corners of individual widgets.
- **Duplicating**: Right-click the widget you wish to duplicate and select **Duplicate** from the menu. Finish by clicking outside the newly created widget to deselect from the first widget. If this option is chosen on grouped widgets, the entire group will be duplicated.
- **Deleting**: After multiple widgets have been selected (two or more), they can be deleted by clicking **Delete Selected.** This will remove all selected widgets from the screen.

2.12.3 Image Library

For some widgets, it allows you to upload your image for your system. For example, GsImage, GsImageCircuitStatus, GsImageOnOff, etc.

You can right- click the widget and select **Properties.**

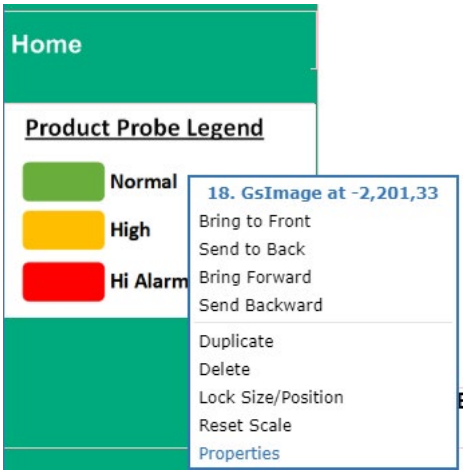


Image Uploading

You will see an **Images** section: click the **Browse** button to open the Image database\library to begin using images by the user.

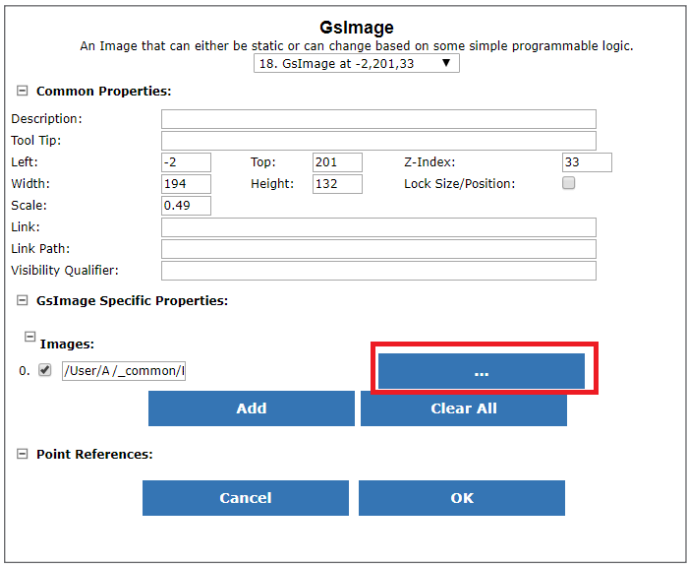


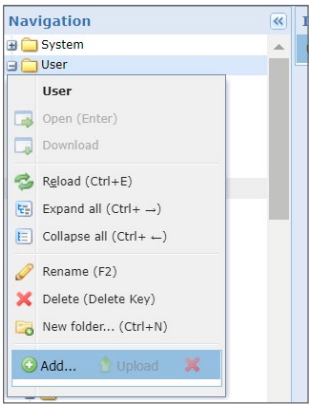
Image Section

There are two types of images in the database: preset system images and user images the user imports by right-clicking the **User** folder. All are listed in alphabetical order. **User** images are images created, modified, and/or uploaded by the user and may also be deleted from the database.

User Images Database

User images can be found in folders created by users, or in the **User** folder. **System** images may not be changed or deleted from the database because they are preset in the system.

To add your own image, right-click on **User** and select **Add to**, choose an image from your computer.



Adding Image

The image will be displayed at the bottom of the menu.

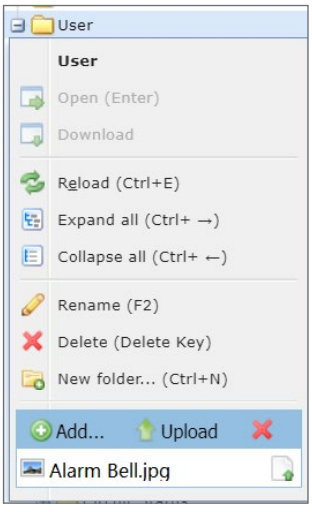
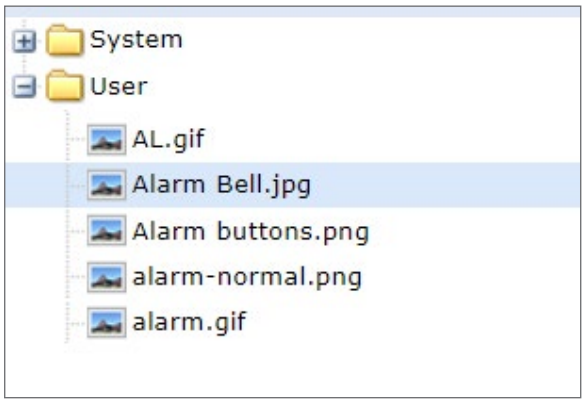


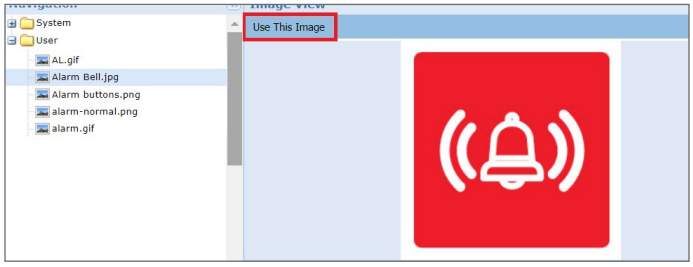
Image is displayed on Bottom Menu

Click **Upload** and you will see the image is added to the **User** folder.



Uploading Image to the User Folder

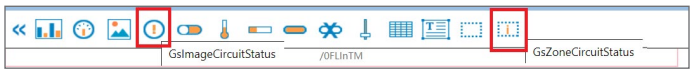
Use the image database\library to add images to your widgets. Choose images from **System** and **User** directories on the **Navigation** side and create your own directories to store the user images you create. Use and edit images from the image database by selecting the image from the tree and clicking **Use This Image**.



Use this Image Menu

Each widget has its own unique functionality depending on how you want the widget to behave and what points the GS Screen will be connected to. For example, ON/OFF states, defrost overrides, values (text widgets), analog and digital states.

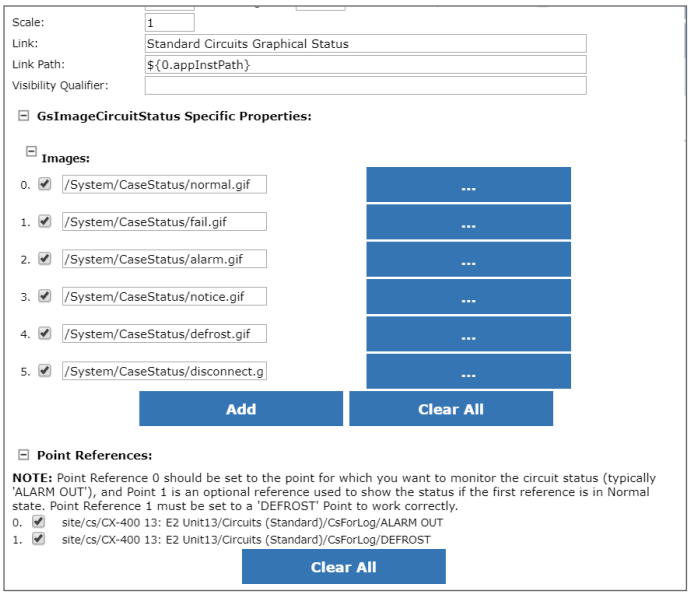
2.12.4 Point References for Image Circuit Status and Zone Circuit Status Widgets



Point Reference in Menu

For both **GSImageCircuitStatus** and **GsZoneCircuitStatus** widgets, only the Alarm Out and Defrost points can be associated with these two widgets in this order:

1. 1st point reference is ALARM OUT
2. 2nd point reference is DEFROST



Alarm Out/ Defrost

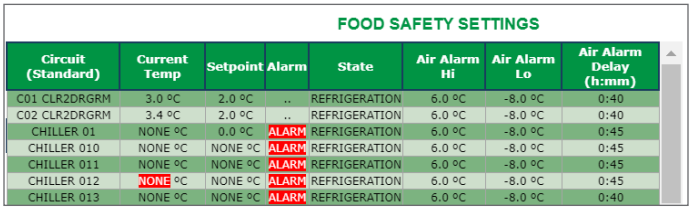
The **GSImageCircuitStatus** and **GsZoneCircuitStatus** widgets have color indicators that will change based on the point being in alarm or defrost. For example, **GsZoneCircuitStatus** can be used to cover a zone or area on the floor plan. The colors will change depending on the information received from the controller regarding alarm and defrost states. Upload and use any image to show the state of the point.

The **GsImageCircuitStatus** and **GsZoneCircuitStatus** widgets have a default **Link of Standard Circuits Graphical Status** and a default **Link Path** of **${0.appInstPath}**.

This means when **GsImageCircuitStatus** and **GsZoneCircuitStatus** widget types are newly added, when clicked, they will go to the Standard Circuits graphical status screen for the application on the first point reference on the widget by default.

2.12.5 GsText and GsTable Widgets

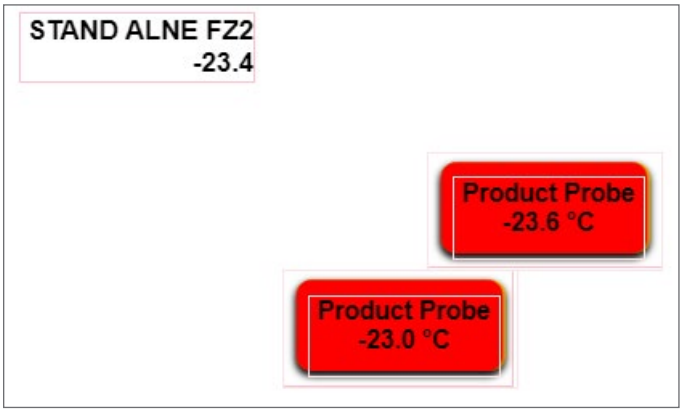
GsTable:

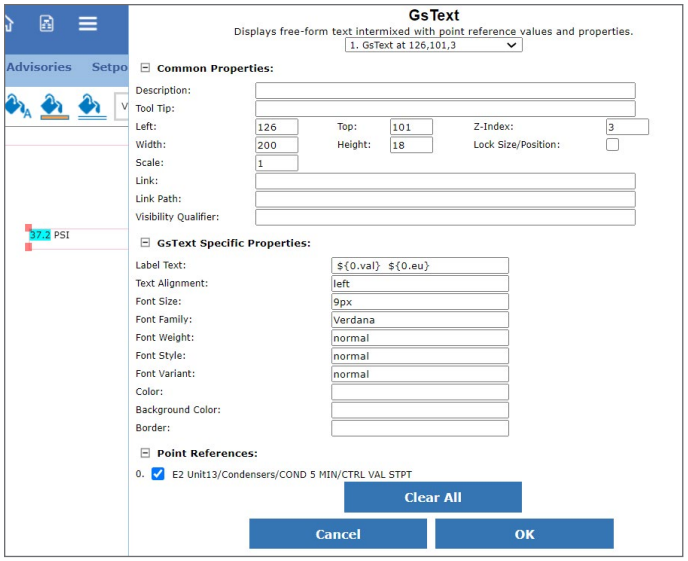


FOOD SAFETY SETTINGS

Circuit (Standard)	Current Temp	Setpoint	Alarm	State	Air Alarm Hi	Air Alarm Lo	Air Alarm Delay (h:mm)
C01 CLR2DRGRM	3.0 °C	2.0 °C	..	REFRIGERATION	6.0 °C	-8.0 °C	0:40
C02 CLR2DRGRM	3.4 °C	2.0 °C	..	REFRIGERATION	6.0 °C	-8.0 °C	0:40
CHILLER 01	NONE °C	0.0 °C	ALARM	REFRIGERATION	6.0 °C	-8.0 °C	0:45
CHILLER 010	NONE °C	NONE °C	ALARM	REFRIGERATION	6.0 °C	-8.0 °C	0:45
CHILLER 011	NONE °C	NONE °C	ALARM	REFRIGERATION	6.0 °C	-8.0 °C	0:45
CHILLER 012	NONE °C	NONE °C	ALARM	REFRIGERATION	6.0 °C	-8.0 °C	0:45
CHILLER 013	NONE °C	NONE °C	ALARM	REFRIGERATION	6.0 °C	-8.0 °C	0:40

GsText:





For text and table widgets, some of the text features you will see on screen are listed in the **Property** column. The options you can enter manually are listed in the **Description** column.

Property	Description
Text Alignment	Center, Left, Right
Font Size	9px, 10px, 12px
Font Family	Times, Courier, Arial
Font Variant	Normal, Small Caps
Font Style	Italic, Normal, Oblique
Font Weight	Normal, Bold, Bolder, Lighter, or enter a numeric value from 100 -900 (normal = 100, bold = 700)
Header Color	Enter a color value in this field: blue, green, etc.
Header Background Color	Enter a color value in this field to set the color of the background header: Blue, Green, d0d0d0, etc.
Header Boarder	Enter a pixel size and color value in this field to specify the header border attributes, for example: 2px solid blue
Header Inside Boarder	Enter a pixel size and color value in this field to specify the header inside border attributes, for example: 1px solid black
Row Header	Specify the values to appear in the row header separated by commas, for example: Unit, Application, Point, Type, Value

The GS Table widget has a **Column Widths** feature so that the width of each column can be set manually. This list is a comma-separated list of pixel widths for each column. Each column can have its visibility controlled if the header item for that column has a reference to a point reference and that point reference is not visible.

2.12.6 GsAppSummaryTable Widget

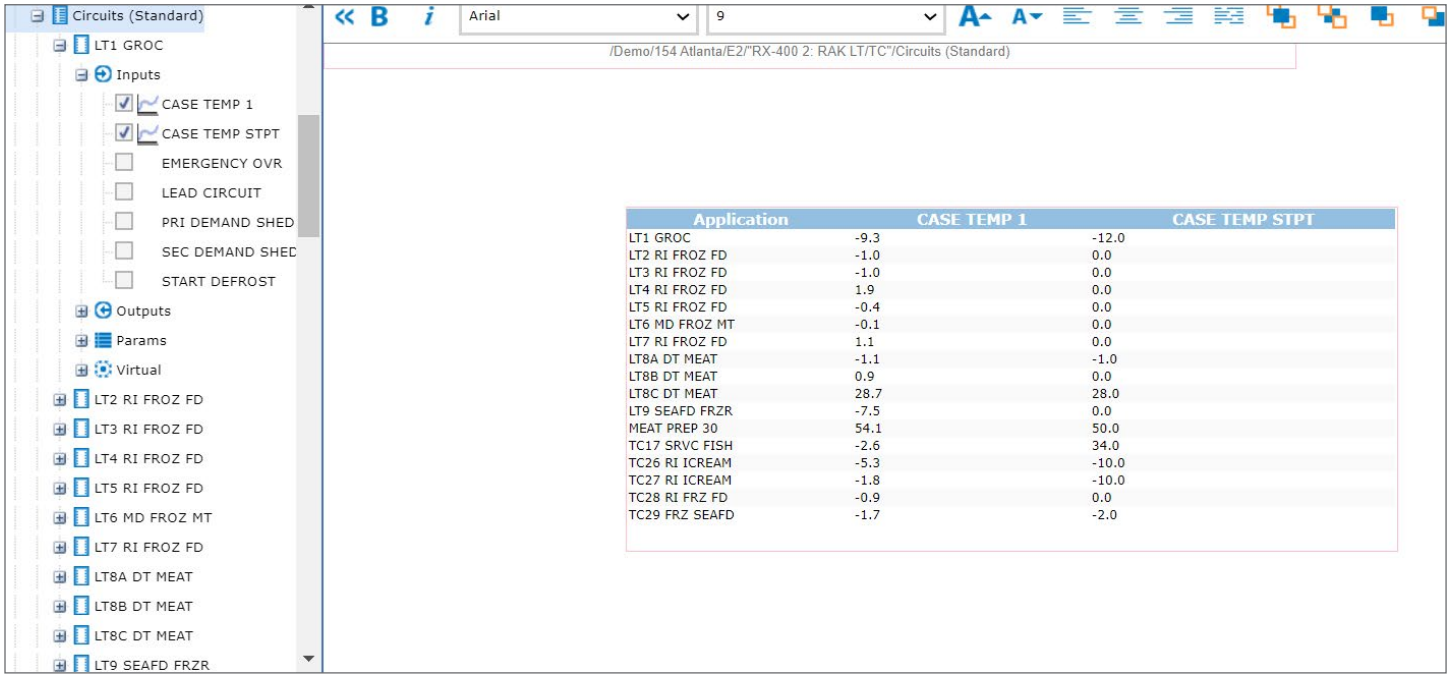
The Summary Screen widget **GsAppSummaryTable** will be available on the GS Screen at the control system, unit, and application type levels on the tree. It will not appear on the widget menu for screens at directory, site, and application instance levels.

GsAppSummaryTable Widget

Click **GsAppSummaryTable** on the **Add Widget** palette to add this widget to your GS screen.

GsAppSummaryTable can list all the same points of one unit's same application types in the table. Points to be associated with this widget can be pre-selected before selecting the widget.

For example, when you select CASE TEMP1 and CASE TEMP STPT from one Circuits (Standard), after clicking GsAppSummaryTable, you will see all Circuits (Standard) instances listed in the table with CASE TEMP1 and CASE TEMP STPT points.



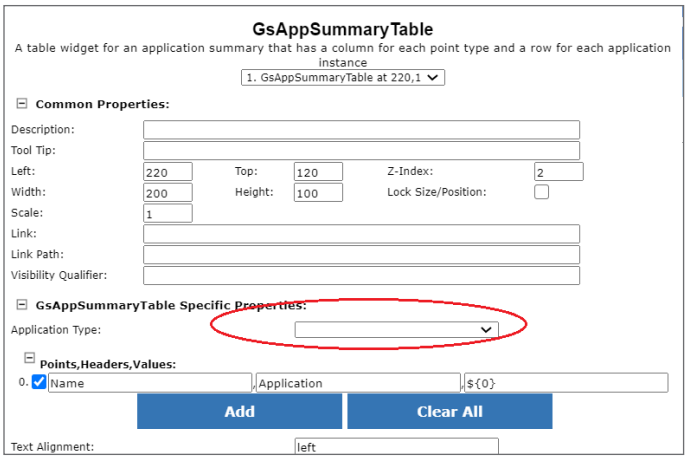
Editing Widgets Property

To edit the widget's properties, right-click the widget and click **Properties**.

The **Application Type** is auto selected for the widget.There is only one valid application type if the GS screen is at that level of the tree.

Application rows will be generated for all corresponding application types found for the specified application type where the GS screen is located. This can span multiple units if the GS screen is at control system level.

Note that the widget will not show any application rows until an **Application Type** is selected from the **Properties** page.



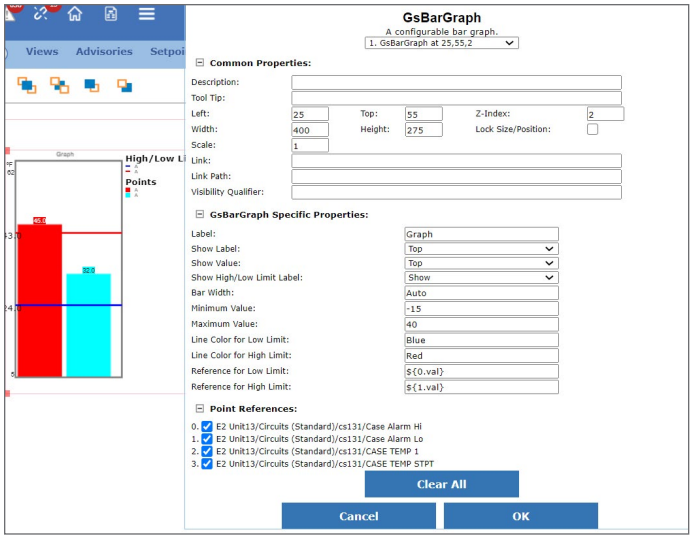
GsAppSummary Table

2.12.7 GsBarGraph

The GsBarGraph widget uses bars as a representation of point reference status. Each colored bar on the graph along the X-axis represents a point reference and the height of the bars corresponds to the point value on the Y-axis. High and low limits are indicated by the lines across the graph.

GsBarGraph Widget

Click **GsBarGraph** on the **Add Widget** palette to add this widget to your GS screen. To edit the widget's properties, right-click the **Widget** and click **Properties**.



GsBarGraph

Property	Description
Label	The name or description that will appear on the widget. The default setting is **Graph**.
Show Label	Location on the widget where the label will be displayed.
Show Value	Select whether to display the actual values or not, and lets you select where to display values on the widget.
Bar Width	Width of the bars in pixels. The default value is Auto, which means the bar width will adjust automatically based on the number of bars displayed.
Minimum Value	The lowest number that the Y-axis can display if it cannot be determined automatically from setpoint values.
Maximum Value	The highest number that the Y-axis can display if it cannot be determined automatically from setpoint values.
Line Color for Low Limit	The line color of the low limit across the graph from left to right. Default color is blue.
Line Color for High Limit	The line color of the high limit across the graph from left to right. Default color is red.
Reference for Low Limit	Low limit reference point on the Y-axis.
Reference for High Limit	High limit reference point on the Y-axis.

Use the legend on the right-hand side of the graph to reference the points associated with each bar.

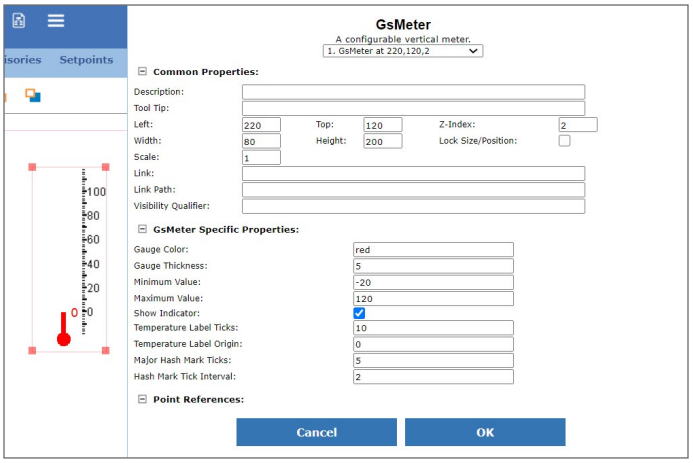
Note that if the widget is associated with more than one point in the navigation tree, only the primary point reference value will be displayed.

2.12.8 GSMeter

The GsMeter is a vertical scale widget that can display a point value (usually a temperature or pressure reading) by referencing or associating the widget with a point in the navigation tree. The gauge indicator moves up or down as the value of the point being referenced changes in real time.

GsMeter Widget

Click **GsMeter** from the **Add Widgets** palette to add the widget to your GS Screen. Right-click the **Widget** and click **Properties** to change the widget's properties (for example, image dimensions, gauge color, scale values, and more).



GsMeter

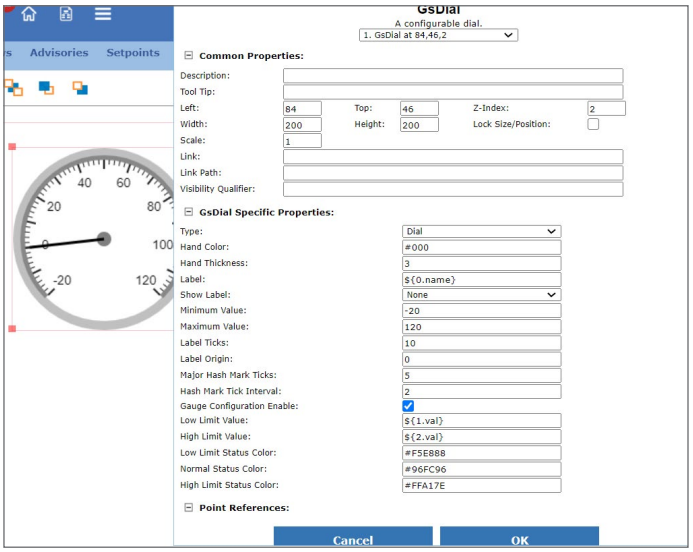
Property	Description
Gauge Color	The color of the gauge indicator. The default color is red. To change the color, enter the name of the color into the field.
Gauge Thickness	The thickness of the indicator in pixels.
Minimum Value	The lowest possible value that the scale can display (at what number the scale starts).
Maximum Value	The highest possible value that the scale can display (at what number the scale ends).
Show Indicator	Enable the check-box to show the actual point value on the indicator or disable to hide the value.
Temperature Label Ticks	The number of tick marks between to major tick mark labels on the meter.
Temperature Label Origin	With what value the scale starts to show the number.
Major Hash Mark Ticks	The number of ticks a mark stands for.
Hash Mark Tick Interval	The number of units a tick stands for.

2.12.9 GSDial

Similar to the GsMeter, the **GsDial** widget displays real-time point value by associating the widget or referencing it to a point in the navigation tree. This widget has a pointer (indicator) that moves and points to a value in the scale depending on the current value of the widget's point reference.

GsDial Widget

To add this widget to a GS Screen, click **GsDial** on the **Add Widgets** palette. To modify the widget's properties, right-click the **Widget** and click **Properties**.

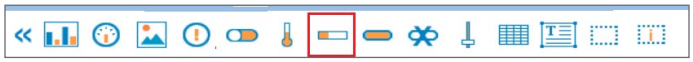


GsDial

Property	Description
Type	The kind of GsDial to use (**Dial** or **Meter**).
Hand Color	The color of the gauge indicator or hand. The default color is blue. To change the color, enter the name of the color into the field.
Hand Thickness	The thickness of the indicator in pixels.
Label	The name or description that will be displayed for the widget. This defaults to **${0.name}**, which is the name of the point as it appears in the Navigation tree or context menu title.
Show Label	Location of the widget where the label will be displayed.
Minimum Value	The lowest possible value that the scale can display (at what number the scale starts).
Maximum Value	The highest possible value that the scale can display (at what number the scale ends).
Label Ticks	The number of tick marks between two major tick-mark label on the dial.
Label Origin	With what value the scale starts to show the number.
Major Hash Mark Ticks	The number of ticks each mark stands for.

Property	Description
Hash Mark Tick Interval	The number of units a tick stands for.
Gauge Configuration Enable	Enable the check-box to enable additional gauge configuration.
Low Limit Value	Ceiling/Upper limit value for the low limit range.
High Limit Value	Starting/Lower limit value for the high limit range.
Low Limit Status Color	Color that represents the low limit range.
Normal Status Color	Color that represents the normal value range.
High Limit Status Color	Color that represents the high limit range.

2.12.10 GSPercentageBar



GsPercentageBar Widget

The **GsPercentBar** widget displays point reference value in percentage.

To add this widget to a GS Screen, click **GsPercentBar** on the **Add Widget** palette. To edit the widget's properties, right-click the **Widget** and click **Properties**.

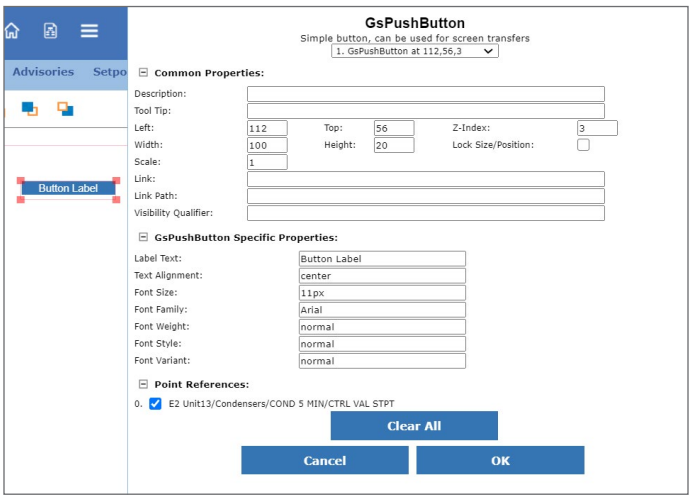
Note that if the widget is associated with more than one point in the navigation tree, only the primary point reference value will be displayed.

Property	Description
Label	The name or description that will be displayed for the widget. This defaults to ${0.name}, which is the name of the point as it appears in the Navigation tree or context menu title.
Show Label	Location on the widget where the label will be displayed (Top, Bottom, Left, or Right).
Show Value	Allows you to select whether to display the actual value of the point reference and measurement. Unit or not, and lets you select where to display the value on the widget.
Bar Fill Color	The color of the percentage bar. The default color is blue. To change the color, enter the name of the color into the field.
Show Percentage	Enable the check-box to show the percentage number value.
Show Low/High Value	Enable the check-box to show the low and high values at the bottom of the widget.
Low Value	The low reference point value.
High Value	The high reference point value.

2.12.11 GsPushButton

GsPushButton Widget

To jump to another GS Screen, you can use **GsPushButton**. To add this widget to a GS Screen, click **GsPushButton** on the Add Widget palette. To edit the widget's properties, right-click the **Widget** and click **Properties**.



GsPushButton

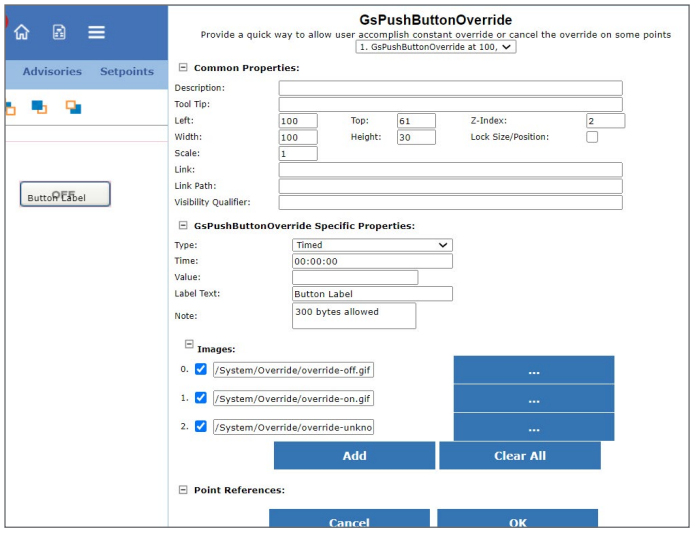
Property	Description
Label Text	The label name will be displayed on the button.
Text Alignment	Center, Left, Right
Font Size	9px, 10px, 12px
Font Family	Times, Courier, Arial
Font Variant	Normal, Small caps
Font Style	Italic, Normal, Oblique
Font Weight	Normal, Bold, Bolder, Lighter, or enter a numeric value from 100 -900 (normal = 100, bold = 700)

2.12.12 GsPushButtonOverride

GSPushButtonOverride widget type provides a constant override or will cancel the override on the referenced point.

GsPushButtonOverride Widget

To add this widget to a GS Screen, click **GSPushButtonOverride** on the **Add Widget** palette. To edit the widget's properties, right-click the **Widget** and click **Properties**.



GsPushButtonOverride

When the GS screen is created, properties will be configured for the point to be used for the override, as well as the value being overridden to, and also the length of time to override. The images can be changed to "On" and "Off." At screen runtime, selecting the image or button will initiate an override of the selected point all the way to the controller. Note also that the status of the override widget will change when the state is read from the controller.

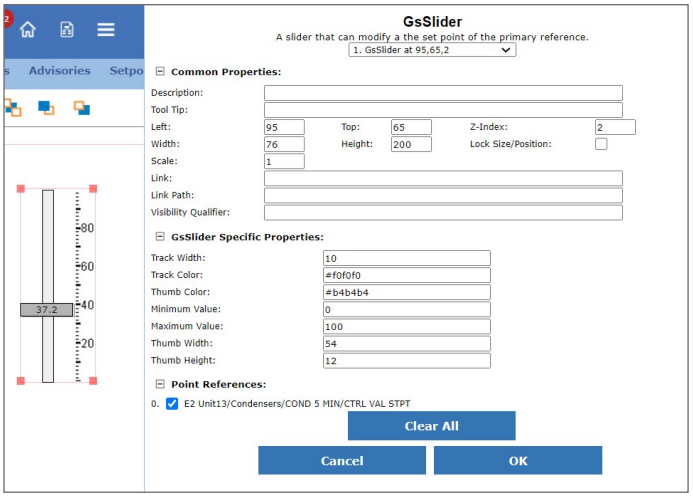
Property	Description
Type	Could be Timed or Fixed for E2 points and only support Timed for Site Supervisor and E3 points.
Time	The field will be displayed once the type is selected as Timed.
Value	The override value.
Label Text	The label will show on the button.
Note	Indicates the label can only support 300 bytes. This information cannot be updated.

2.12.13 GsSlider

View and change the setpoint setting of a point reference using the **GsSlider** widget. The **GsSlider** widget has a slider control/bar that can be moved up and down to adjust setpoint.

GsSlider Widget

To add this widget to a GS Screen, click **GsSlider** on the **Add Widget** palette. To edit the widget's properties, right-click the **Widget** and click **Properties**.



GsSlider

Property	Description
Track Width	Width of the slider track in pixels.
Track Color	The color of the slider track. To change the track's color, enter the name of the color into the field.
Thumb Color	The color of the slider control/bar. To change the color, enter the name of the color into the field.
Minimum Value	The lowest possible value that the widget can display.
Maximum Value	The highest possible value that the widget can display.
Thumb Width	Width of the slider control/bar in pixels.
Thumb Height	Height of the slider control/bar in pixels.

To change the value of a setpoint, click the **slider bar** and drag it up or down to the new setpoint. It will pop up an override window for you to override the point value. After that, the new overridden setpoint value will be displayed on the widget.

2.12.14 Zone Widgets

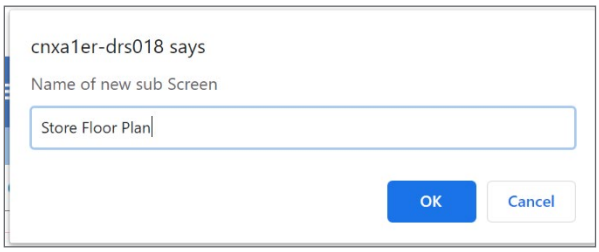
Zone widgets allow you to create a new GS screen based on a portion of another screen.

Zone Widgets

To use this feature, add a new **GsZone** or **GsZoneCircuitStatus** widget, move and size it to cover the area that the new screen should be based on, and then on the widget's right-click menu, click **Convert to Sub-Screen**.

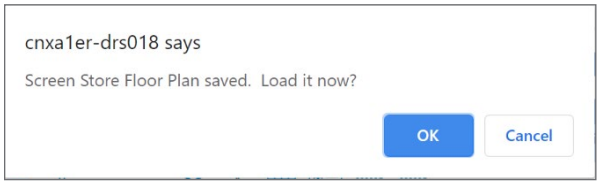
Converting to Sub-Screen

Naming the sub-screen.



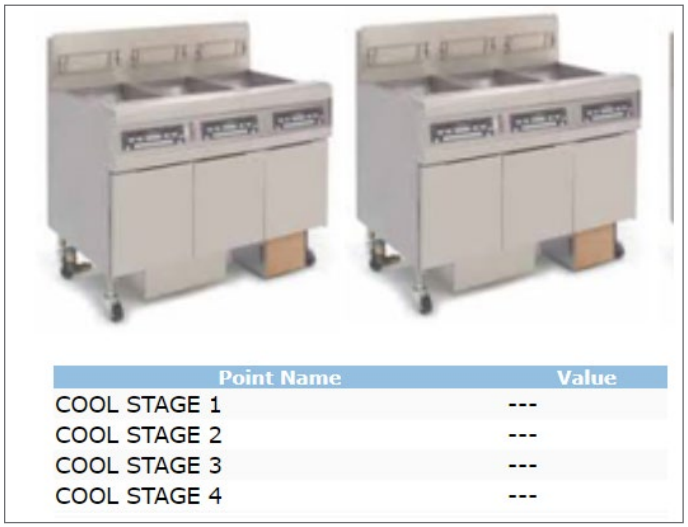
Name the Sub-Screen

Saving the sub-screen and reload it.



Save the Sub-Screen

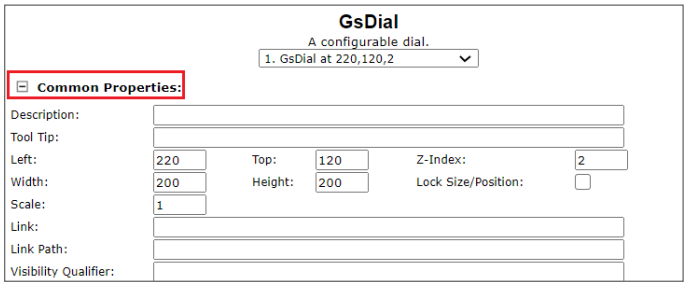
After clicking **OK** button in pop-up window. The subscreen will be shown.



Sub-Screen

2.12.15 Common Properties

Right-click on any **Widget**, click **Properties**, and you will see Common Properties section displayed in the first area in the widget properties. It applies to all types of widgets.



Common Properties

Property	Description
Description	Short descriptive information or name of the widget.
Tool Tip	The text you enter in this field will appear when you mouse over the widget. Information about particular points associated with the widget, widget name, and more, can be entered in this field. If no text is entered, the regular menu will be available.
Left	The number of pixels the widget is from the left.
Top	The number of pixels the widget is from the top.
Z-Index	Reflects the stacking order of position.
Width	The width of the widget in pixels.
Height	The height of the widget in pixels.
Lock Size/Position check-box	If enabled, values entered in the size and position properties fields will be locked. Any more changes made to these properties will not apply as long as the check box is enabled. To unlock and disable, click to remove the check-mark.
Visibility Qualifier	When true, it will make the widget or group visible, and when false, will make the widget or group disappear.

Link GS Screen

Linking GS Screens: If you link from one widget to another GS Screen, enter the link path and link screen (simply the actual name of the GS Screen). For example, add a push-button widget (GsPushButton) that will allow you to jump to another GS Screen. For the push-button widget on its **Properties** menu, enter the name of the GS Screen you wish to link to in the **Link** field.

Linking Gs Screen

Reverse-direction linking: To link a GS screen in the reverse direction (backwards) from where you are on the tree, enter ../ in the **Link Path** field for each node of the tree you are going up, including the node you start from. Then add the name of the last tree node the GS Screen will be linked to. For example, if you begin at the Unit level in the tree and the GS screen is to be linked at the Site level:

- Site - Test Site 1 (your ending point)
- CS - Control System 1
- Unit - Controller 1 (your starting point)

Enter ../../../Test Site 1 in the Link Path field.

- **Link**: If the GS screen you wish to add to is named "AHU", type the text "AHU" into this field. Note that a URL address can also be entered into this field. When in Run mode, click that widget to go to the link you entered. Be sure to include "http://" or "https://" in the URL address.
- **Link Path**: The link path is how to get to the node of the tree you want to go to from where you are now. If the **Link Path** field is blank, it is assumed that the screen will be loaded at the same Tree node where the current screen has been loaded. This can be done by entering a "relative" path (preferred) or an "absolute" path. For example, the fields would be populated with the "relative" path information below when linking the push-button widget to the AHU GS Screen:

  Links: **AHU**

  Link Path: **ABC Bldg/ABC E2 Bldg/BX-400 1: Suite 101/ Air Handlers (AHUs)/RTU1 - OFFICES**

  Unique parameters that can be specified as the **Link** on any widget:

  - **${home}** when this link is clicked on the widget, it causes you to leave the current screen and go to the GS screen home page (if defined). If no home page is defined, or if you are already on the home pages, a pop-up error message will appear.
  - **${back}** when this link is clicked on the widget, it causes you to leave the current screen and go back a page (just like the browser back button).
  - **${forward}** when this link is clicked on the widget, it causes you to leave the current screen and go forward a page (just like the browser forward button).
  - **${graph}** when this link is clicked on the widget, the associated points will be graphed that opens in a separate window. If no points have been associated, an "Invalid Reference" message will appear.

- **${graph,N...}** will graph a different point (where N is a reference number for a valid reference in the widget). For example, **${graph,1}** will graph the point specified by reference 1. You can include multiple references in the graph by separating them with commas; for example, **${graph,0,1,2}** will graph the points specified by references 0, 1, and 2 on the popup graph.
- **${graph}ScreenName** optionally, you may follow the **${graph}** link with the name of a screen to show as part of the graph. For example, **${graph,1,2}GraphSubScreen** would pop up the log graph for the points specified by references 1 and 2, and also load the GS Screen named **GraphSubScreen** as part of the pop-up graph. The GS screen used in the pop-up graph must be specially designed for this purpose.
- **${graph, 1, ...N}GsscreenName|24** sets a default time period for the pop-up graph (where |24 is the number of hours that can range from 1 to 4320). For example, **${graph,1,2} GraphSubScreen|8** will pop up a log graph for points specified by references 1 and 2 within the last **8 hours** and also load the GS Screen named GraphSubScreen as part of the pop-up graph.

» **${tree}** applied by default to the screen link path when a GS screen is created, this link parameter causes the navigation tree to synchronize automatically to the location where the GS screen is loaded. By simply clicking on the widget, you can see exactly where in the tree the GS screen is loaded.

» **${0.siteID}** this is the ID of the site this point is in.

» **${0.controlsystemID}** this is the ID of the control system this point is in.

» **${0.unitID}** this is the ID of the unit this point is in.

» **${businessAction}businessActionName** creates a link from the current GS Screen to a business action UI screen (where **businessActionName** is the exact business action name that is defined in the business-ActionDescriptor.xml file). By clicking the widget, the page will load the business action screen.

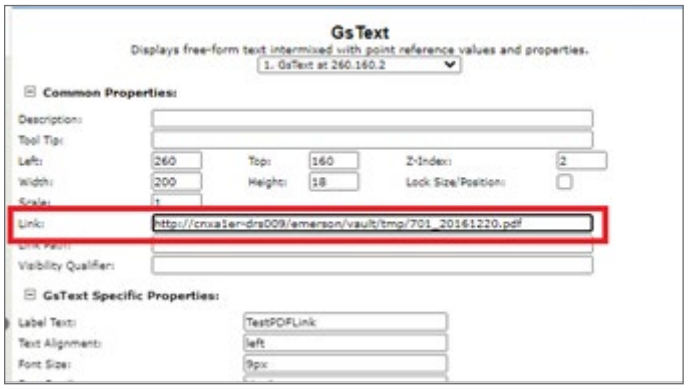
Link GS Screen to PDF

In addition to linking a GS Screen to an external URL or to another GS, a GS Screen can be linked to a PDF.

Place the PDF on a server under the following path: \Tomcat\webapps\emerson\vault\tmp.

Add the URL link into the **link** field of widget property using the format: “http://” + pdf path + pdf name.

For example:



GS Text

Link GS Screen to other Feature/Function screen

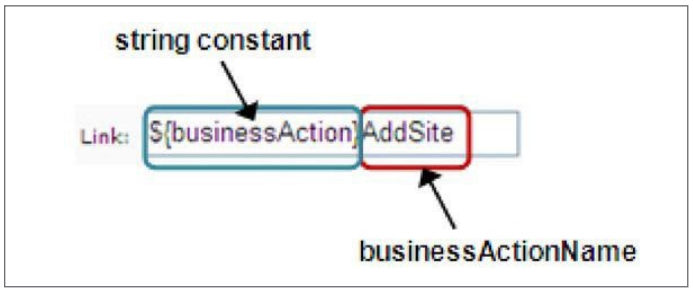
Link GS Screen to a feature or function within Connect+.

To link a widget to a Connect+ feature or function, enter a business action parameter in the **Link** field under the Common Properties section. Use the input format below.

```
${businessAction}businessActionName;paramName=paramValue
```

Business Action Parameters

- **${businessAction}:** a string constant. Enter this string in the **Link** field followed by the business action name of the feature or function.
- **businessActionName:** the string name of the feature or function as listed in the “businessActionDe-scriptor.xml” file (the Connect+ feature or function the GS will be linked to). For example, the business action name for configuring a site is EditSite.



Set a parameter name and a parameter value to features and functions that require a parameter. Type = (equal sign) in between parameter names and values and a semicolon (;) in between parameters, if more than one parameter is needed.

- **paramName:** the string name of the parameter being looked up. Refer to below table for list of parameters for a given feature or function.
- **paramValue:** the value of the parameter being referenced.

The required parameters should be entered in the Link field or an error message will display. Parameters can be entered in any order as long as the parameter names and values provided are valid.

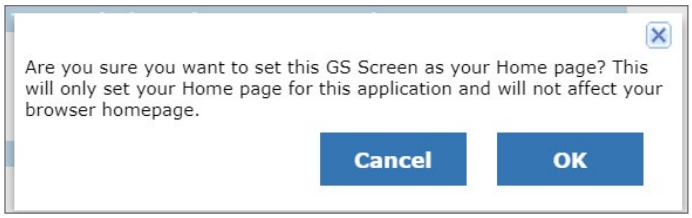
Feature/ Function Screen	Business Action Name	Required Link Parameters
Edit Site	EditSite	${businessAction}EditSite;referenceId=${0.siteID};referenceTreeLevel=1;referenceName=${0.siteName}
Add Control System	AddControlSystem	${businessAction}AddControlSystem;referenceId=${0.siteID};referenceTreeLevel=1;referenceName=${0.siteName}
Edit Control System	EditControlSystem	${businessAction}EditControlSystem;referenceId=${0.controlsystemID};referenceTreeLevel=1;referenceName=${0.csName}
Obtain Controller Information	SyncControllerDirSite	${businessAction}SyncControllerDirSite;referenceId=${0.siteID};referenceTreeLevel=1;referenceName=${0.siteName}
Obtain Controller Information	ControlSystemInventory	${businessAction}ControlSystemSynchronize;referenceId=${0.controlsystemID};referenceTreeLevel=2;referenceName=${0.csName}
Obtain Controller Information	UnitSynchronize	${businessAction}UnitSynchronize;referenceId=${0.unitID};referenceTreeLevel=3;referenceName=${0.unitName}
Refresh Units	ControlSystemInventory	${businessAction}ControlSystemInventory;referenceId=${0.controlsystemID};referenceTreeLevel=2;referenceName=${0.csName}
Refresh Application	UnitInventory	${businessAction}UnitInventory;referenceId=${0.unitID};referenceTreeLevel=3;referenceName=${0.unitName}
Retrieve Logs Site Level	GetPointLogsSiteLevel	${businessAction}GetPointLogsSiteLevel;referenceId=${0.siteID};referenceTreeLevel=1;referenceName=${0.siteName}
Retrieve Logs CS Level	GetPointLogsCSLevel	${businessAction}GetPointLogsCSLevel;referenceId=${0.controlsystemID};referenceTreeLevel=2;referenceName=${0.csName}
Retrieve Logs Unit Level	GetPointLogsUnitLevel	${businessAction}GetPointLogsUnitLevel;referenceId=${0.unitID};referenceTreeLevel=3;referenceName=${0.unitName}
Terminal Mode	InitialTerminalMode	${businessAction}InitialTerminalMode;referenceId=${0.unitID};referenceTreeLevel=3;referenceName=${0.unitName}
Forward Advisory	FORWARD_ADVISORY	${businessAction}FORWARD_ADVISORY;referenceId=${0.siteID};referenceTreeLevel=1;referenceName=${0.siteName}
View Historical Advisory	VIEW_ADVISORY	${businessAction}VIEW_ADVISORY;referenceId=${0.siteID};referenceTreeLevel=1;referenceName=${0.siteName}
Advisory Receiver Commission	MonitorCommissioning RFDActivity	${businessActionMonitorCommissioningRFDActivity;referenceId=${0.controlsystemID};referenceTreeLevel=2;referenceName=${0.csName}
Live Advisory View CS Level	GetLiveAdvisoriesCS LevelActivity	${businessAction}GetLiveAdvisoriesCSLevelActivity;referenceId=${0.controlsystemID};referenceTreeLevel=2;referenceName=${0.csName}
Live Advisory View Unit Level	GetLiveAdvisoriesUnit LevelActivity	${businessAction}GetLiveAdvisoriesUnitLevelActivity;referenceId=${0.unitID};referenceTreeLevel=3;referenceName=${0.unitName}
Backup Site	BackupSiteActivity	${businessAction}BackupSiteActivity;referenceId=${0.siteID};referenceTreeLevel=1;referenceName=${0.siteName}
Backup Unit	BackupUnitActivity	${businessAction}BackupUnitActivity;referenceId=${0.unitID};referenceTreeLevel=3;referenceName=${0.unitName}
Backup Control System	BackupCtrlSystem Activity	${businessAction}BackupCtrlSystemActivity;referenceId=${0.controlsystemID};referenceTreeLevel=2;referenceName=${0.csName}

2.12.16 Set System Home Page

Locate at the **My Info** icon, click **Set As Home Page** to set a GS Screen as your home page and overwrite any previously set GS Screen system home page.

Home Page Option

A confirmation window will appears, click **OK** to set the GS Screen as your new system home page or **Cancel** the setting.



Confirmation Message

After clicking the **OK** button, another message will show to tell you the system home screen is set successfully.

OK Button

After system home page is set, user will see the system home screen when landing to the Connect+. There's a menu **My Home Page** listed under the **My Info** icon and user can select this menu to jump to system home screen from other page.

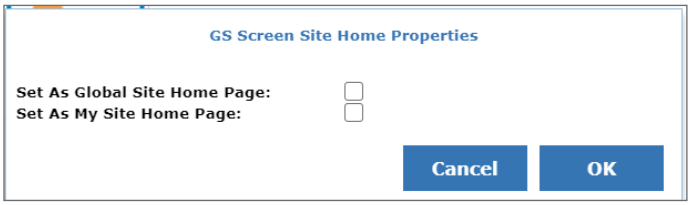
My Home Page Option

2.12.17 Set Site Home Page

Setting a **GS Screen** as the Site Home page makes the chosen GS Screen as the landing screen for a given site. To set the **Site Home** page, while on the edit mode of a GS Screen, click the site **Home** icon from tool bar menu.

Gs Screen Site Home Page Widget

You could see a pop-up window of **GS Screen Site Home Properties**.



Gs Screen Site Home Properties

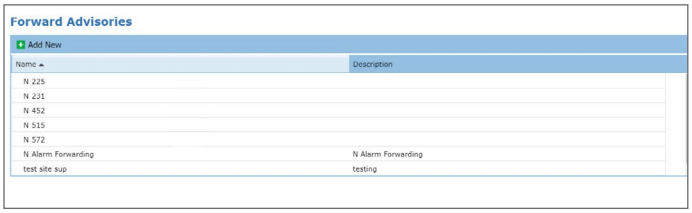
Set As Global Site Home Page: Check this check-box will allow all the users see the home page.

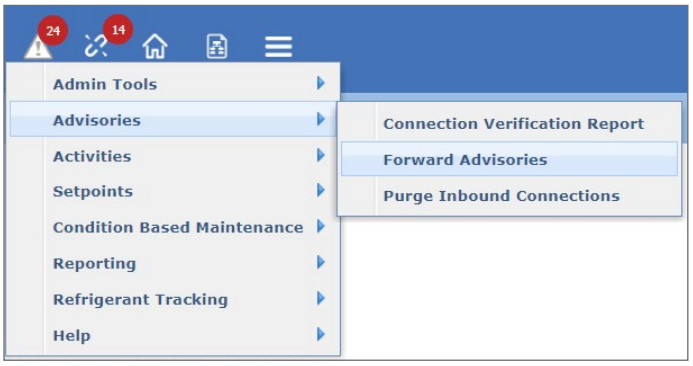
Set As My Site Home Page: If check this check-box, only the user who set the property can see the home page.

You can only choose one check-box, then click **OK** to save the configuration. To view the home screen by clicking the site name from tree node.

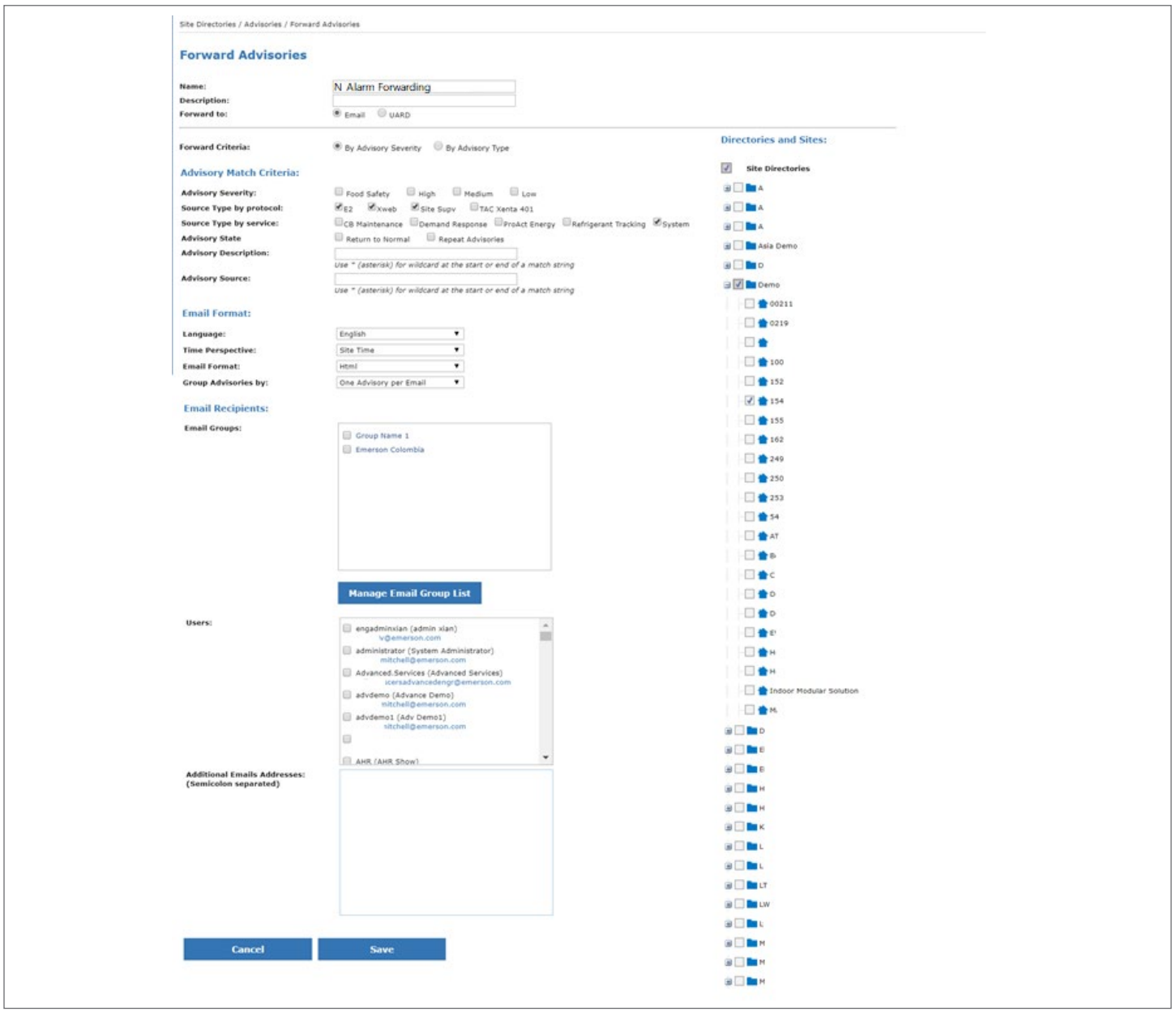
3 Advisory Notification

Advisories can be forwarded to an e-mail address. Open the **Forward Advisories** page by clicking **Advisories** > **Forward Advisories** from any tree level right-click menu, or from **Top Menu** > **Activities** > **Forward Advisories.**





Click the **Add New** button to set up forwarding to a new address, or to edit an existing address, click on the **Address** in the box (if one is present, it will be visible) and it will take you to the page below:



Forward Advisory Page

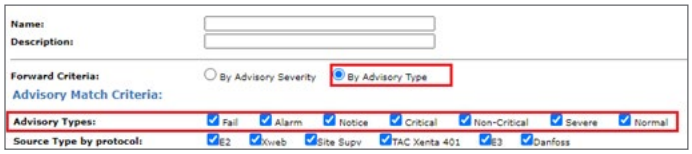
Give the advisory forward a unique identifier in the **Name** field. Because multiple forwarding instances or profiles can be set up, you can distinguish them and indicate a purpose/ description for each one.

Description is an optional field for indicating what the advisory forward is for (its purpose). For example, "Notify all west coast supervisors of compressor failures."

Advisory Match Criteria

You can choose what kind of **Advisory Criteria** you want to use to send email.

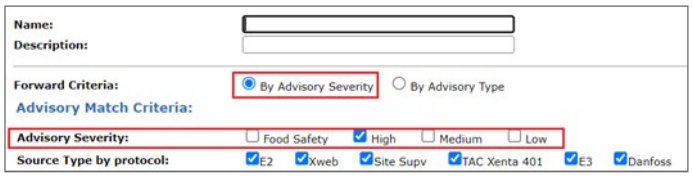
- **By Advisory Type** – Advisory Type will be shown in Advisory Match Criteria after choosing.



Advisory Type

Advisory Type is the advisory severity identified on the controller. Advisory grade from high severity to low is **Fail** (E2 and Dixell) or **Critical** (Site Supervisor and E3) or Severe (Danfoss), **Alarm** (E2 and Dixell) or **Non-critical** (Site Supervisor and E3), **Notice** (E2, Dixell and Site Supervisor and E3).

- **By Advisory Severity** – Once it is be chosen, **Advisory Severity** will be shown in Advisory Match Criteria. You can choose **Food Safety, High, Medium, Low** for advisories filter.



Advisory Severity

Advisory Severity:

Advisory Severity is a Connect+ defined Advisory Property. When you have multiple controllers across the organization, it is difficult to tell which Advisory needs your immediate attention with different Advisory definitions for different controllers.

In order to solve this problem, Connect+ defines the Advisory Severity as shown below. This allows users to have a consistent view of an advisory's Severity. Currently the definition is defaulted as the following in Connect+:

Advisory Priority for E2 and Dixell			
Severity	**Priority**	**State**	**Example Alarm Type**
High	1 to 20	Active	Room Temp Alarm
Food Safety			Case Temp and Prod Temp
Medium	21 to 50		Heat Pump Status Block Alarm
Low	51 to 99		HRC Alarm from Heat Pump
Low	1 to 99	RTN	

Advisory Priority for Site Supervisor			
Severity	**Priority**	**State**	**Example Alarm Type**
High	Critical	Active	Room Temp Alarm
Food Safety			Case Temp and Prod Temp
Medium	Non-Critical		Heat Pump Status Block Alarm
Low	Notice		
Low	Any	RTN	

Advisory Priority for Danfoss		
Severity	**Type**	**State**
High	Severe or Critical	Active
Medium	Normal	
Low	Log Only	
Low	Any	RTN

Advisory State indicates two kinds of advisories, Return to Normal and Repeat Advisories. Advisories that have been returned to normal or duplicate advisories (one advisory generates more than once) should keep being sent, you can click the check-boxes to send them.

Source Type by Protocol allows different protocol advisories to be sent

CB Maintenance, Demand Response, Proact Energy, Refrigerant Tracking are different functionally from Connect+. System is controller off-line alarm.

Source Type by Service allows advisories for Connect+ supported service to be sent.

Advisories can be sent based on the Advisory Match Criteria configuration. If you want to receive high severity alarm for E2 and Site Supervisor and E3. Then you can check High from Advisory Severity and E2 and Site Supervisor and E3 from Source Type by protocol.

If you want to send all active and return to normal advisories, simply click the **Return To Normal** check-box, and leave the **Advisory Severity** check-boxes as unchecked.

Advisory Match Criteria

Email Format:

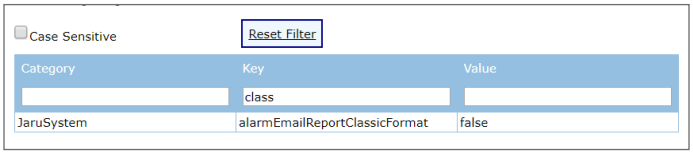
Language can let you choose English or Spanish

Time Perspective of the advisory can be set to Site Time, My Time (your current browser time zone), or the Server Time.

E-mail Format can be set up as Html, Text, or Cell Phone (messages sent to cell phones for each individual alarm will be abbreviated to conserve space).

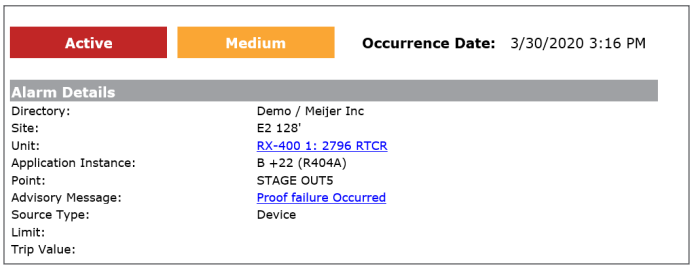
Group Advisories by field can let you choose how many advisories will be sent in one email. You can choose One Advisory per Email or Multiple Advisories per Email.

Connect+ support two kinds of alarm email formats. If you want to change the email format, ask the Administrator to change it in superuser property.



Email Format

The default format like below:



Alarm Details

Administrator can change **alarmEmailReportClassicFormat** to True for table email format below:

Advisory Forwarding

This is an automatically generated email. Please do not respond. The following advisories have occurred:

Time Perspective: Site Time

Occurrence Date	Type	Directory	Site	Control System	Unit	Application Type	Application Instance	Point	Priority	Advisory Message	Source Type	Limit	Trip Value	Received Date
5/24/2019 4:12 AM	Non-Critical (rtn)	sophie / sub	SS Site	10.161.92.212	SR:SS Unit03	StdCircuit	SOSO		99	Case Temp Hi Limit Exceeded 1	Device	100.00	107.60	5/27/2019 8:56 AM
5/24/2019 2:35 PM	Notice	sophie / sub	SS Site	10.161.92.212	BX-400 13: E2 Unit13	Sensor Control AV	DDD		99	Application config has changed	Device			5/27/2019 8:56 AM
5/24/2019 2:07 PM	Non-Critical	sophie / sub	SS Site	10.161.92.212	BX-400 13: E2 Unit13	Sensor Control AV	a	CONTROL VALUE	20	Alarm Limit Exceeded	Device	90.00	92.00	5/27/2019 8:56 AM

Advisory Forwarding

Email Recipients:

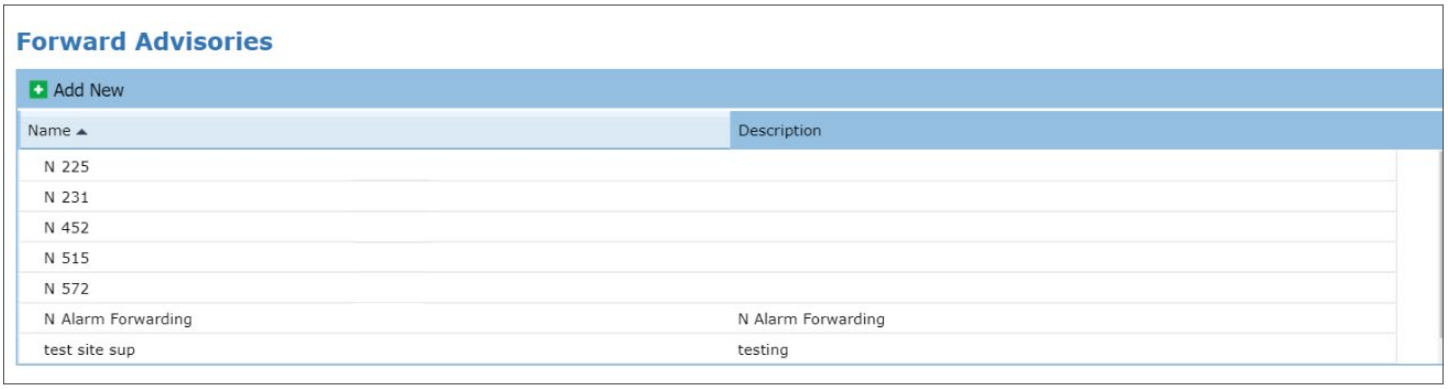
Email Groups can list the groups that you already configured in Email Group Manager. If you want to add a new group or edit the existing groups, click Manage Email Group List.

Users field lists all the users with their email address. NO EMAIL will be marked for users who did not configure an email address. If you choose a user without an email address, you will receive a message that does not affect the user.

Additional Emails Addresses field allows you to input additional email address.

Check the directories and sites hierarchy that are applicable to the advisories being sent. If accessing this page directly from the navigation tree, the hierarchy will automatically be visible and checked.

After all the configurations are done, click the **Save** button. The new added forward advisory rule will be listed in the **Forward Advisories** table.

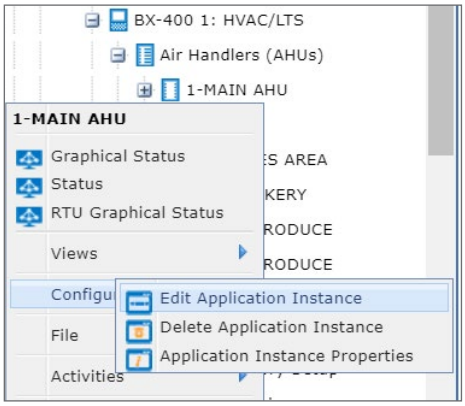


Forward Advisories

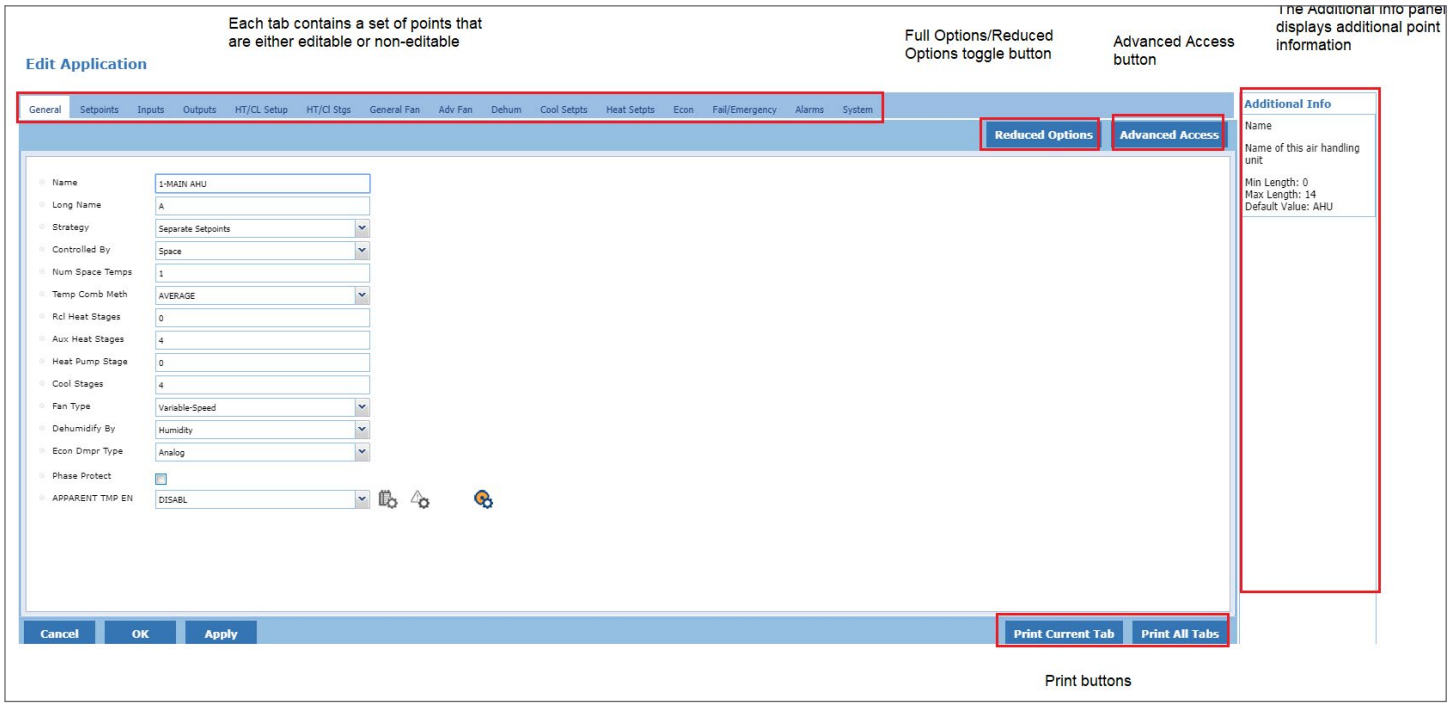
Any alarms that match the forwarding rule will be sent out to configured recipients.

4 Edit Application

To make changes to an application instance, choose Edit Application page from navigation tree. Right-click the desired application instance from the navigation tree and select **Edit Application Instance**.



Edit Application Instance Menu



Edit Application Page

The **Edit Application** page allows you to perform online remote editing of applications and shows the editable and non-editable point values (or protocol component) of an application instance, which are divided into groups set by the controller.

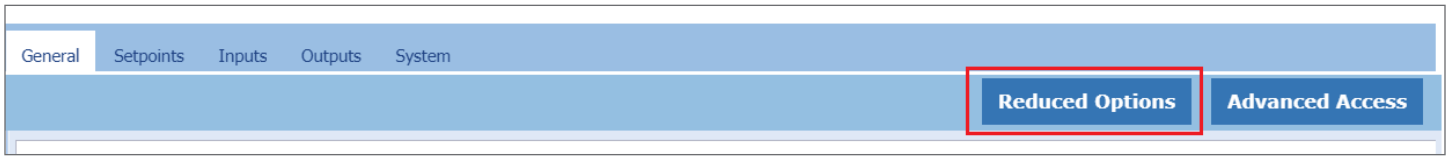
Each application instance is divided into groups of points. Each group is a tab that contains point names and values.

- The left column shows the names assigned to points (pre-configured in the controller). Hover the cursor over the names to display its description in the Additional Info panel.
- The right column contains fields where you can enter your changes to point values (can be either editable or non-editable depending on the controller's setup). Values can be of the following types: ***text*** (enter the value in the field provided), ***drop-down*** (expand and select from the list), or ***check-box*** (click to enable/disable the indicated property). Use the arrow keys on your keyboard to move between values within a tab.

If you change the point name, there will be a **Lightning bolt** icon to the left of the point names to indicate the point value has been changed.

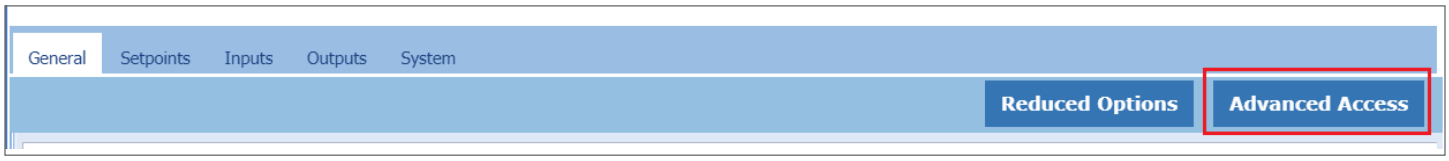
If a change was not saved to the controller after clicking **OK**, the page is enabled, and a message appears on top of the page along with a link to Activity Details. The page will then wait for more input.

- **Full Options/Reduced Options**

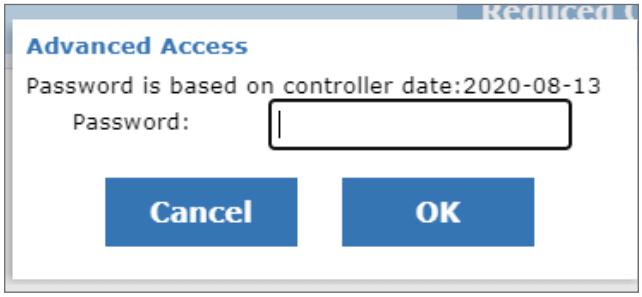


Full Options/Reduced Options toggle button allows you to select the display mode for points. (When Full Options is displayed, the Reduced Options mode is in use, and vice versa.). Full Options allows you to view more points than in the Reduced Options. By default, the page is set to Full Options; click the toggle button to shift modes.

- **Advanced Access and Normal Access**



Click A**dvanced Access and Normal Access** toggle button to display Level 5 properties in the page. A pop-up window will appear on the page and ask you to enter a valid one-day password. Click **OK** after entering the password. If the password is correct, the user will be able to view additional fields that were not available previously. If the password that was entered is invalid, an error pop-up message will display, and the screen remains unchanged.



- **Print Current Tab/Print All Tabs**

- **Print Current Tab/Print All Tabs**: The print buttons beneath the window give you the ability to print point information. If a print button is clicked, all point information displayed will show in a new window. Click **Print Current Tab** to print the information that is related to the tab you are currently viewing or click **Print All Tabs** to print all the available point information in all tabs.

Value 1-MAIN%20AHU

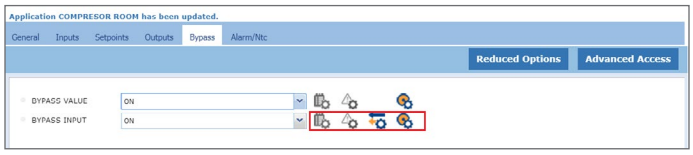
General	
Property	**Value**
Name	1-MAIN AHU
Long Name	A MAIN AHU UNIT
Strategy	Separate Setpoints
Controlled By	Space
Num Space Temps	1
Temp Comb Meth	AVERAGE
Rcl Heat Stages	0
Aux Heat Stages	4
Heat Pump Stage	0
Cool Stages	4
Fan Type	Variable-Speed
Dehumidify By	Humidity
Econ Dmpr Type	Analog
Phase Protect	false
APPARENT TMP EN	DISABL

Setpoints	
Property	**Value**
MIN SPLY TMP CL	50.0

Inputs	
Property	**Value**
OCCUPANCY	HVAC/LTS:MAIN OCCUPANCY:OUTPUT
SPACE TEMP 1	NONE
SPACE HUMID	HVAC/LTS:1.04 N. HUMID:OUTPUT
RETURN TEMP	NONE
SUPPLY TEMP	NONE
MIXED AIR TEMP	NONE
ENTHALPY SW	NA
OUTDOOR TEMP	HVAC/LTS:GLOBAL DATA:OAT OUT
OUTDOOR HUMID	HVAC/LTS:GLOBAL DATA:OUTDOOR HUM OUT
OUTDOOR DEWPT	NONE
BYPASS TO OCC	NA
BYPASS TO UNOCC	NA
SETPOINT SHIFT	NONE
PHASE LOSS	HVAC/LTS:GLOBAL DATA:HVAC PHASE

Sample Print

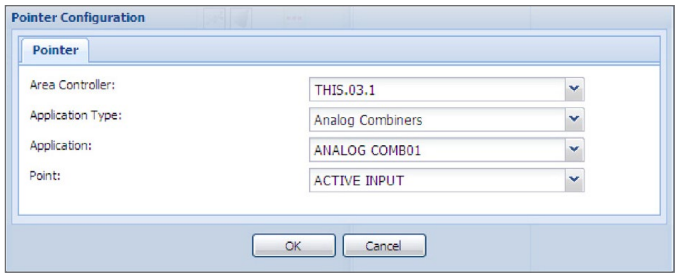
You can configure Pointer, Log, Advisory or Bypass for E2 point in Edit Application page by clicking the icon behind the point.



Bypass Option

Pointer Configuration

If a point is capable of becoming a pointer, the **Pointer Configuration** icon appears to the right of that point value; click this icon to open the **Pointer Configuration** pop-up window:



Pointer Configuration

The **Pointer Configuration** window allows you to define a point within the same control system to which the current point being configured will get or send its property.

To set up a pointer, select a value from each of the drop-downs:

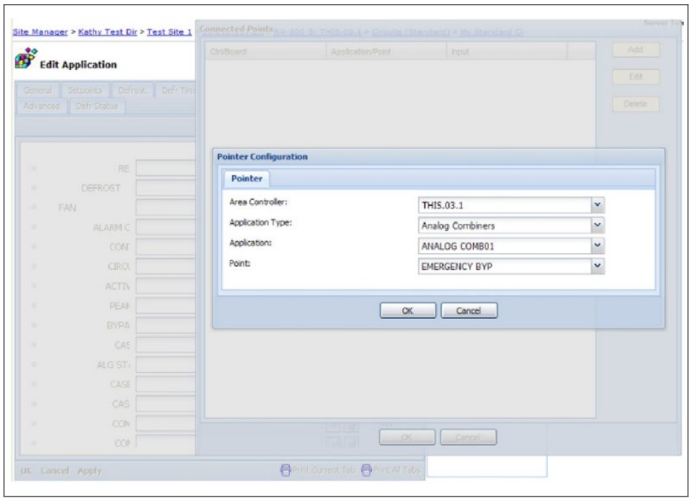
- **Area Controller** - the area controller to which the point will associate (should be the same control system of the current point).
- **Application Type** - the name of the application type.
- **Application** - the specific application to which the point will connect.
- **Point** - name of the input or output you want the current point to send or get its value from. Connect an input point to an output point of the same data type, and vice versa (for example, digital outputs to digital inputs, analog inputs to analog outputs). An input point cannot be associated to another input point, likewise, an output point cannot be hooked to another output point.

Example 1: A time schedule that has a digital output that is turned on and off based on time is hooked to a digital input of another application to perform a bypass action based on the time of day.

Example 2: An analog combiner with four temperature inputs can average the inputs and have the average as the output value. The output is connected to the input of another application to control off of the average temperature.

Click **OK** to save the settings; pointer information will display in the **Value** field of the **Edit Application** page. Click **Cancel** to exit.

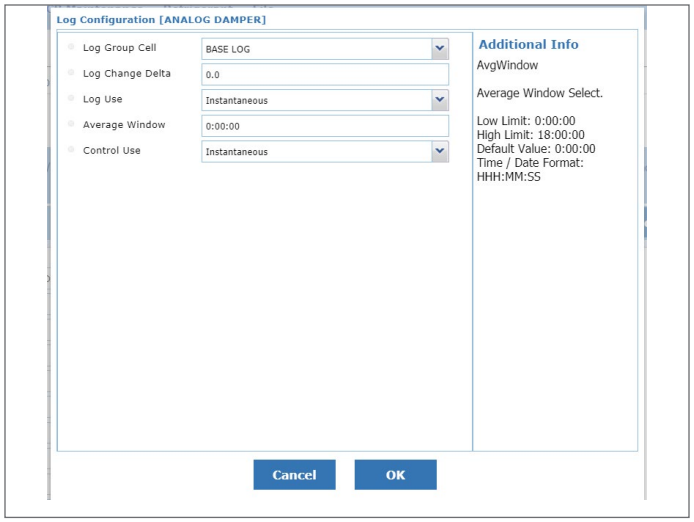
Each output point that has the ability to be a pointer can point to multiple other input points within a controller. To connect an output point to multiple input points, click the **Pointer Configuration** icon of an output. A pop-up window will open and display all the input points connected to that output. (The page will be blank if no point is connected currently.) Click to highlight an input point and click **Edit** to modify or click **Delete** to disassociate the point and remove from the list. To connect more points, click the **Add** button.



Pointer Configuration Menu

Log Configuration

You can set up log parameters of an application instance by clicking the **Log Configuration** icon (available only for points that have logs). There are two possible types of log configuration: analog and digital. Information related to the point will appear when the point is clicked. Click **OK** to save or **Cancel** to exit.

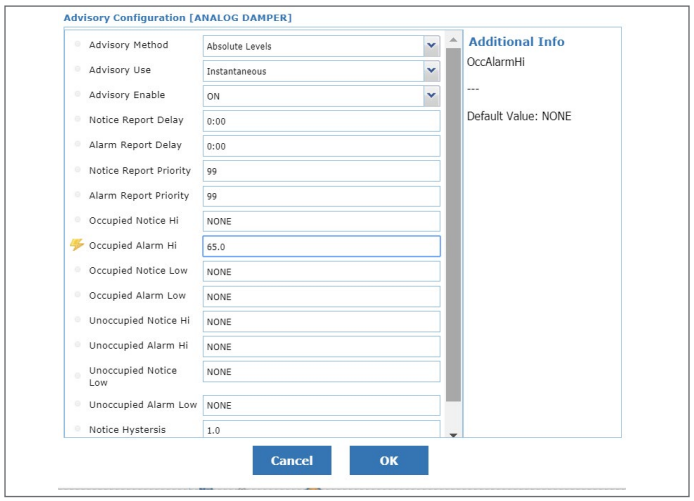


Log Configuration

Grayed out icons appear when there is no log configuration or alarm configuration set up yet. Click on the grayed-out icons to set up a log configuration or advisory configuration for the first time.

Advisory Configuration

Click the **Advisory Configuration** icon to set up advisory parameters for the current point. This will configure advisories for this point only. Each point that needs advisory configuration will be set up separately. Click **OK** to apply changes or **Cancel** to exit the window without saving.



Advisory Configuration Menu

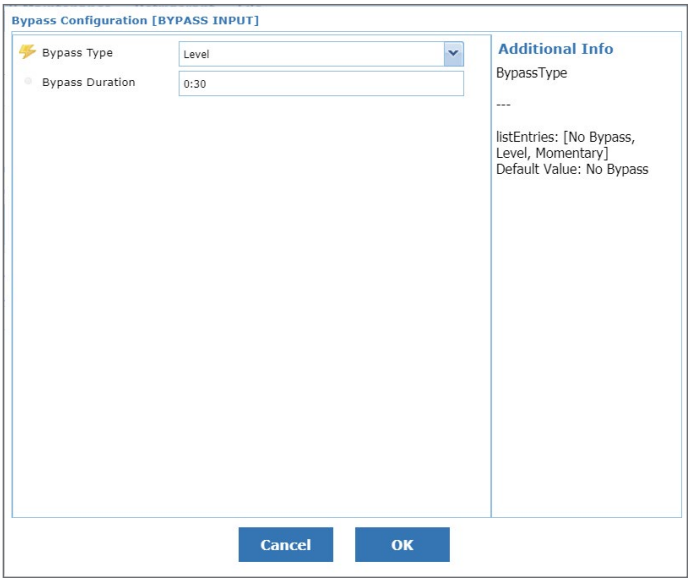
Bypass Configuration

If available, click the **Bypass Configuration** icon to set up the bypass parameters. It can allow you to configure the command output to be bypassed to a fixed value by a switch or push button. The **Bypass Configuration** pop-up window will open. Click **OK** to apply and exit this popup or **Cancel** to exit without saving changes.

Bypass can be set as **No Bypass, Level, Momentary**.

Level: Activated or de-activated by level where a normal switch is usually used: usually "ON" level of the digital input activates some specified event and the level bypass will follow the input; however, there is a timer associated with the level bypass which is used as a failsafe. The duration is used to turn off the bypass after a certain time if the input is still on.

Momentary: Activated or de-activated by pulse where the push button is normally used: the corresponding digital input will scan for pulse (ascending edge and descending edge) to signal the start of the bypass. When the bypass is initiated, a timer will be used to control the length of the bypass. Once the bypass timer reaches the duration specified in the bypass timeout, the bypass will terminate. During bypass period, the bypass can also be canceled when the corresponding digital input detects a certain number (3 in our design) of pulses.

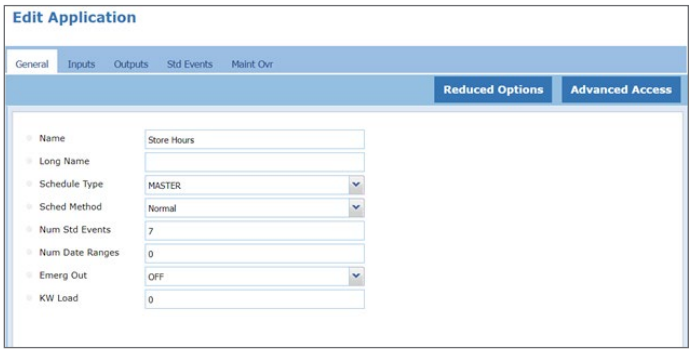


Bypass Type

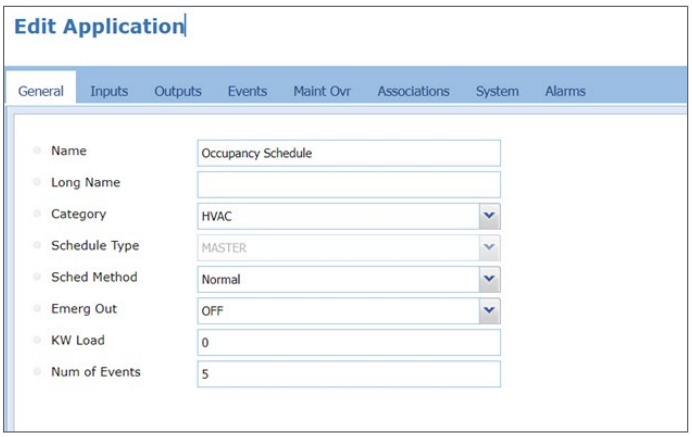
Once all the configurations are completed on the **Edit Application** page, click **Apply** to send the configuration to the controller, you will stay on this page and can continue to edit other properties. Click **OK** to send the configuration to the controller and exit the page.

4.1 Edit Time Schedule

Right-click on the instance of Time Schedule and select **Configure** > **Edit Application Instance**. From here you can manage your schedule event through **Edit Application** page.



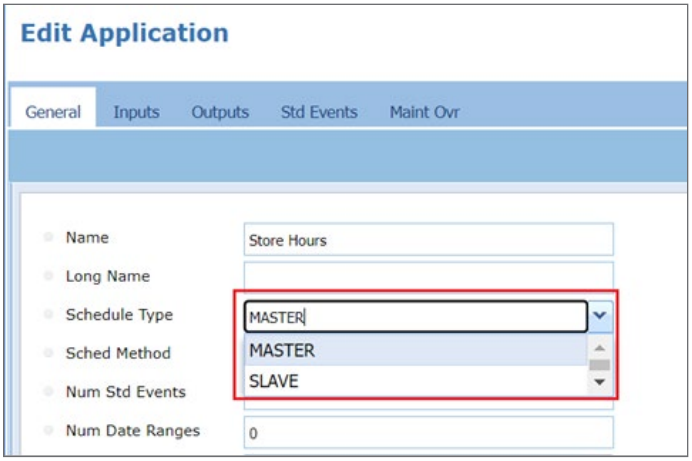
Time Schedule for E2



Time Schedule for Site Supervisor and E3

4.1.1 Schedule Type

E2, Site Supervisor and E3 support two schedule types, the **Master** schedule and the **Slave** schedule. You can configure it from **General** tab.



Configure Schedule Type

Master schedules are the main scheduling unit used by E2, Site Supervisor and E3. A master schedule consists of up to 15 scheduled ON/OFF event pairs of E2, and Site Supervisor and E3 support 20 events, which may be programmed to occur on any individual date and time or series of dates and times. **Master** schedules may also drive slave schedules.

Slave schedules are similar to master schedules, except their operation is driven by a master schedule.

Generally, slave schedules are alterations of the master schedule's event times. The ON/OFF times in a slave schedule may take place either at specific defined times of the day or relative to the times given in the master schedule.

For example, a master schedule may be defined as: "The building is occupied from 8:00 a.m. to 9:00 p.m." while one of its slave schedules be defined as: "Dim the building lights 15 minutes before the store closes."

Slave schedules may also be mastered by other slave schedules to create a series of stacked schedules.

4.1.2 Absolute and Relative Events

You can configure the schedule event from the Events tab. Events are simple commands to turn the schedule output either ON or OFF at a particular time within a range of days.

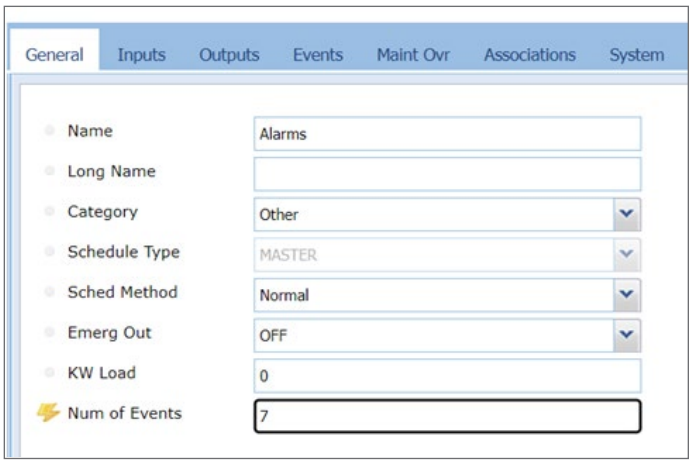
Master schedule events always occur at specific times of the day. In other words, when you program an event pair in a master schedule, you must specify two specific times of the day the events will occur. These types of events are called absolute events.

However, when programming event times in slave schedules, you can choose to enter absolute events times, or event times that are relative to its master schedules ON and OFF times; these types of events are called relative events. They are programmed not as absolute times but as amounts of time before or after its master schedule's events.

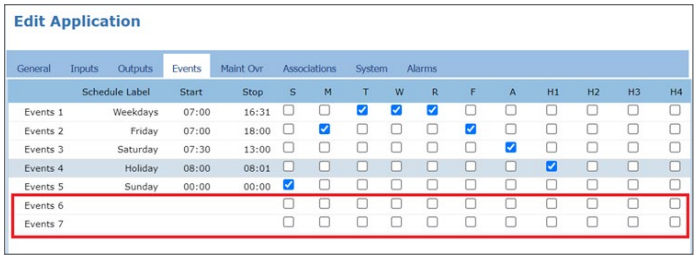
For example, set up a master schedule to be ON at 8 a.m. and OFF at 9 p.m. every day of the week, and you wish to set up a slave schedule so that its output comes ON 15 minutes before the master comes ON and OFF 15 minutes after the master goes OFF. To do this, you would set up the slave schedule to come ON at -00:15 and OFF at +00:15 every day of the week. The salve schedule will automatically determine the correct ON and OFF times.

4.1.3 Manage Time Events

Increase the number of **Num Std Events** of E2 or **Num of Events** of Site Supervisor and E3 from the **General** tab when you want to add new schedule events. After increasing the number, the new empty lines will be added in **Std Events** tab of E2 (It is called the **Events** tab of Site Supervisor and E3) to let you add a new event.



Configure Number of Events



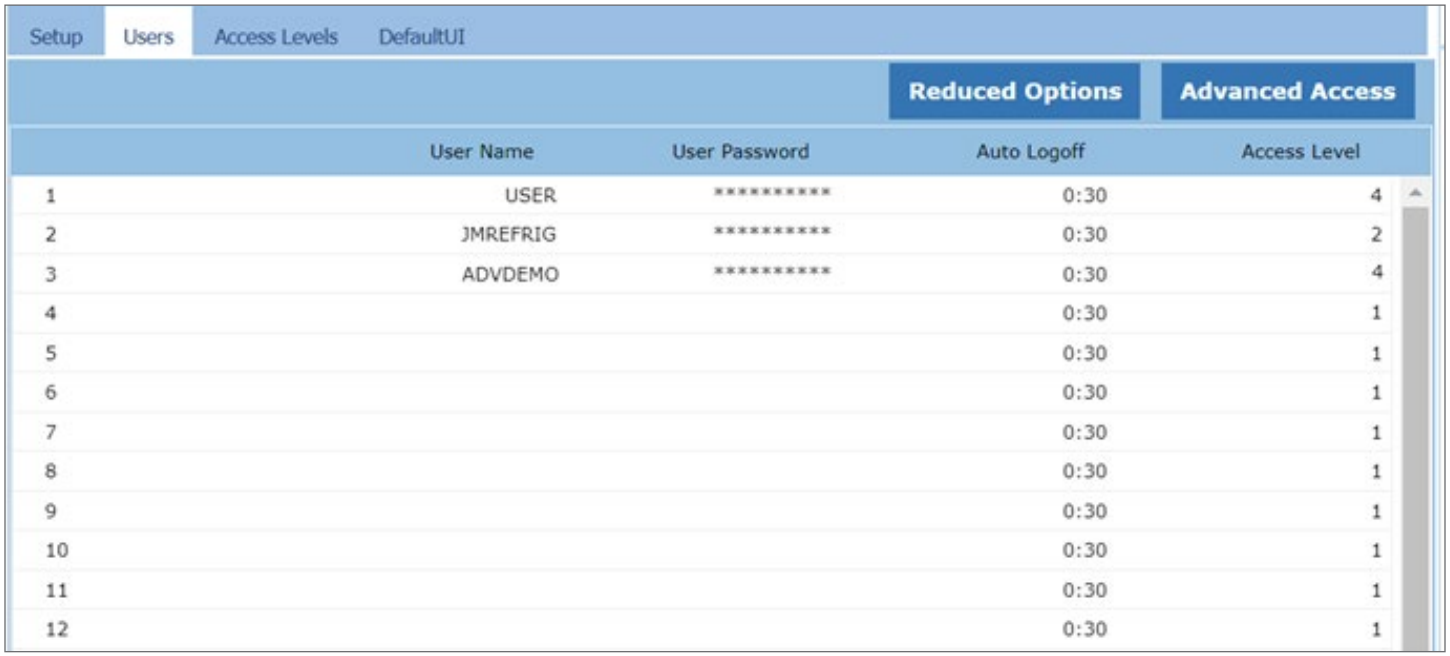
New Events Added

For the same reason, you could remove the schedule events by reducing the number of Num Std Events, it will delete the last few events. For example, there are five time schedule events exist, and you reduce the Num Std Events from 5 to 3, then the events 4 and 5 will be removed.

When you configure the master and slave events, you may configure the conflict events of the date range. For example, a master event configured to execute on Monday and Tuesday, but a slave event configured relative to the master time at Monday and Wednesday. In this situation, the slave schedule will only be applied to the overlapped date, in this example, it will be applied on Monday.

4.2 Edit User Access

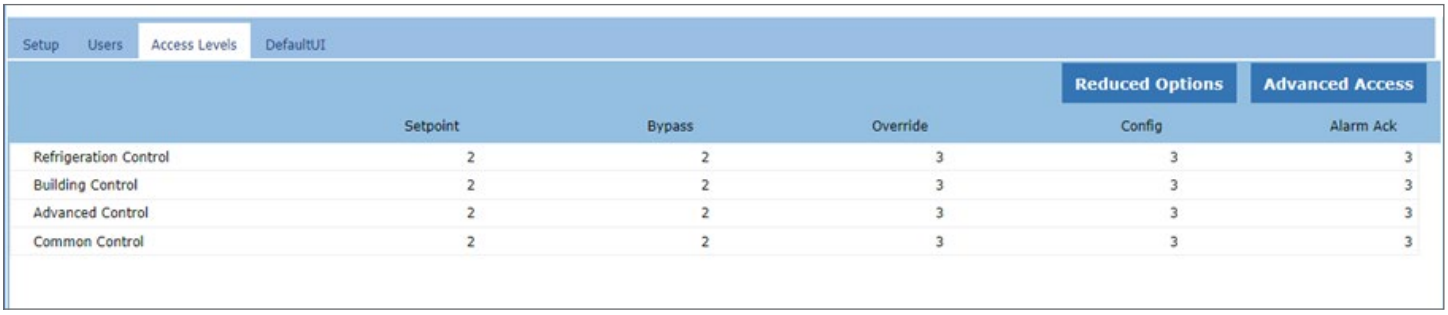
Users can be managed in the controller from **Edit application** page of **User Access**. Right-click on the instance of **User Access** and select **Configure** > **Edit Application Instance.**



User Access of E2

E2 can enable up to 25 different users. You can configure username, password and access level from the **User** tab.

Access level determines how many of the E2's features the user may use. There are four access levels, one being the lowest and four being the highest. You can also configure it from **Access Levels** tab.

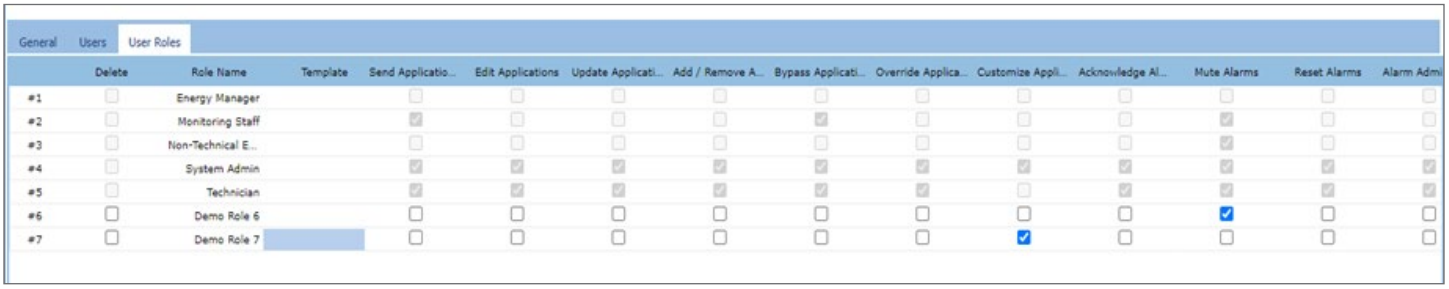


	Setpoint	Bypass	Override	Config	Alarm Ack
Refrigeration Control	2	2	3	3	3
Building Control	2	2	3	3	3
Advanced Control	2	2	3	3	3
Common Control	2	2	3	3	3

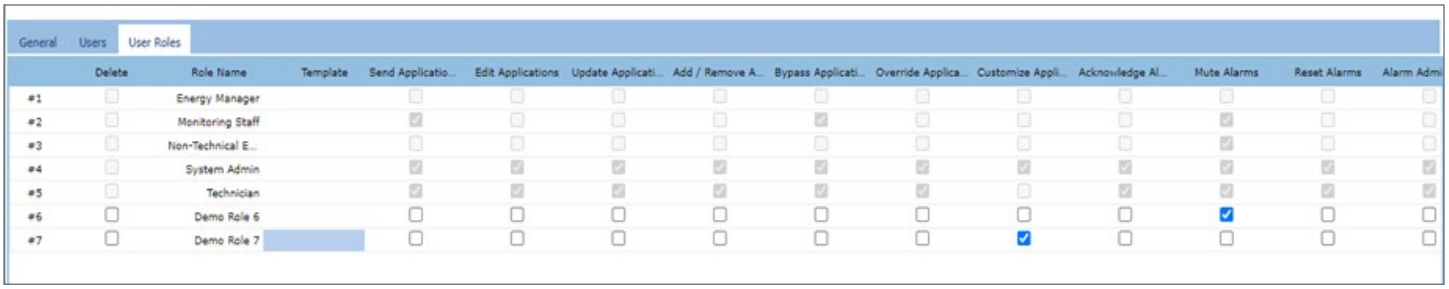
Access Level of E2

Different than E2, Site Supervisor and E3 use roles to manage feature usability. There are 5 default roles and 1 default user existing on the controller, and these default roles and users cannot be edited or deleted. You can add a maximum of 20 roles and users.

The role management function is only supported on Connect+ 1.5.6 and Site Supervisor and E3 2.24 versions and above.



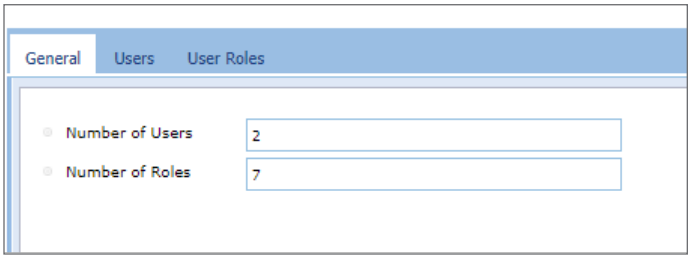
User Roles of Site Supervisor and E3



User List in Site Supervisor and E3

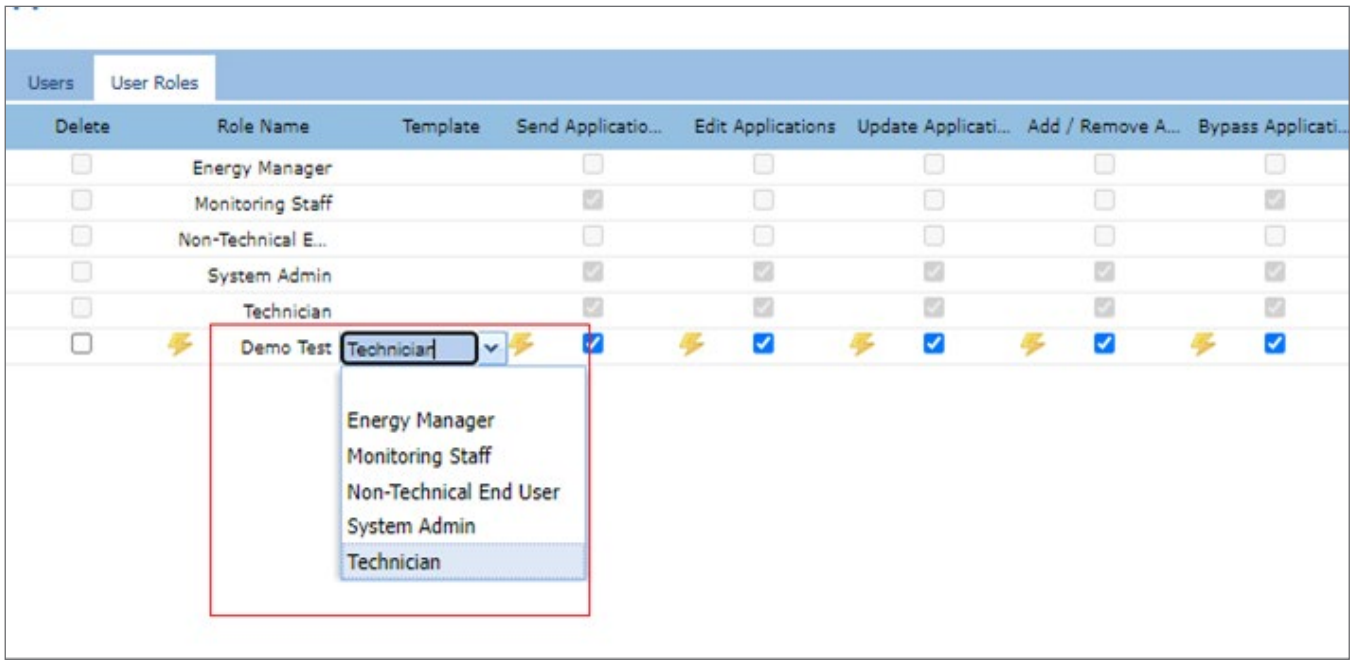
If you want to assign a customized role to a user, you must add the role first.

Add a role or user by increasing the number in **General** tab. After the number is increased, you can see the empty row is displayed on **User Roles** or **Users** tab to let you add a new role or user. This number cannot be reduced.



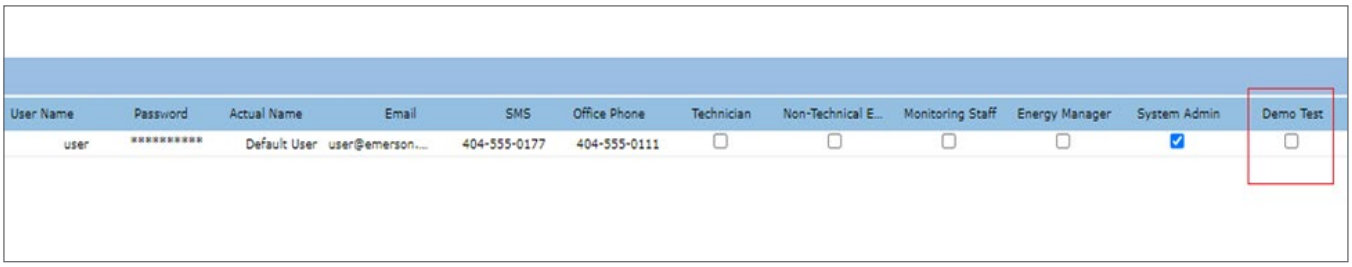
Increase User and Role Number

When adding a new role, you can select the template to help you enable some recommended privileges, so that you do not need to configure them one by one. You just need to modify it based on the recommendation.



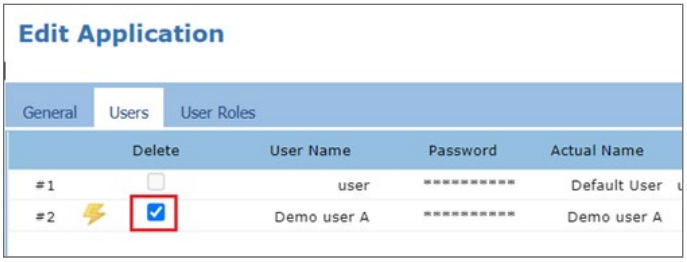
Role Template

Once the role is added, it will be displayed behind each user in the **Users** tab, and you can assign the role to the user.

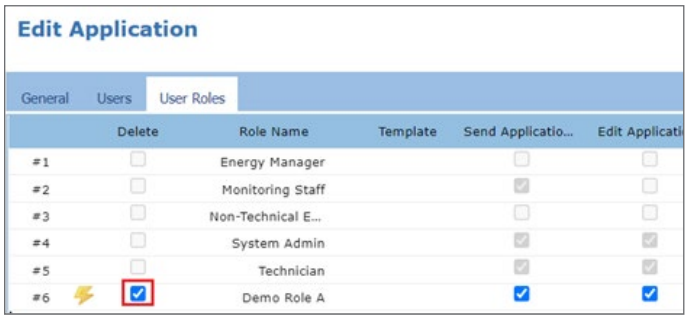


New Role Added in User Tab

Each user can only be assigned one role.You can delete the role or the user by enabling the check-box before each role and user, or you can also delete multiples at the same time. After the role is deleted, it will be removed from the **User** tab as well. If a user is assigned with the deleted role, after deleting, the user will automatically be assigned to a default role of **Non-Technical End User**.



Delete User from Site Supervisor and E3



Delete Role from Site Supervisor and E3

5 Setpoint Broadcast

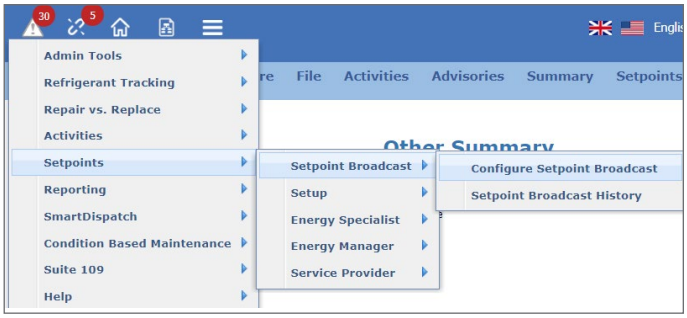
Connect+ users can utilize the powerful **Setpoint Broadcast** feature to change the Controller Application Points Value or Points Configuration. Setpoint Broadcast allows users to define their own change template by selecting an existing application's points, and next broadcast the specific changes to the Target Controller Group across Enterprise.

This enterprise level capability helps users reduce time tremendously when setting up a new store such as General Setup, Case Controller Setting Configuration, and performing regular updates, such as change User Access, and Lighting Schedule.

This section starts from general capability, and then specifies the details in most common scenarios such as User Access, Lighting Schedule, and case controller settings by using Setpoint Broadcast for changes.

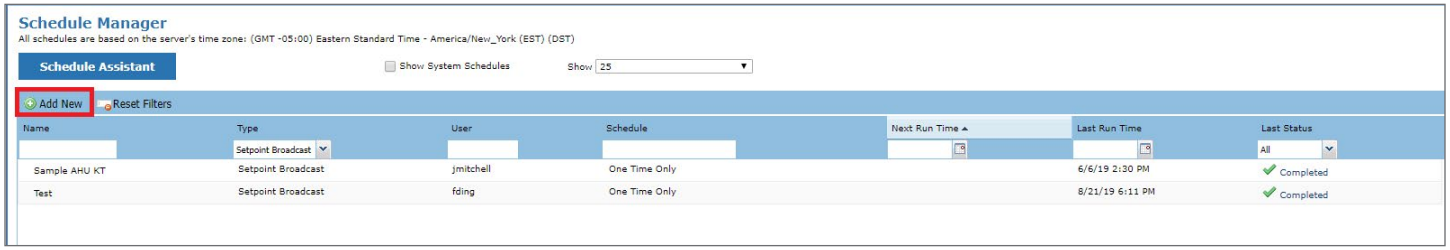
5.1 General Setpoint Broadcast

You can choose **Top Menu** > **Setpoints** > **Setpoint Broadcast** > **Configure Setpoint Broadcast**:



General Setpoint Broadcast Menu

If you have scheduled Setpoint Broadcast previously, you will see a list of Setpoint Broadcast entries. You can start from an existing entry and modify it to save as a new Setpoint Broadcast. Or you can choose **Add New**:

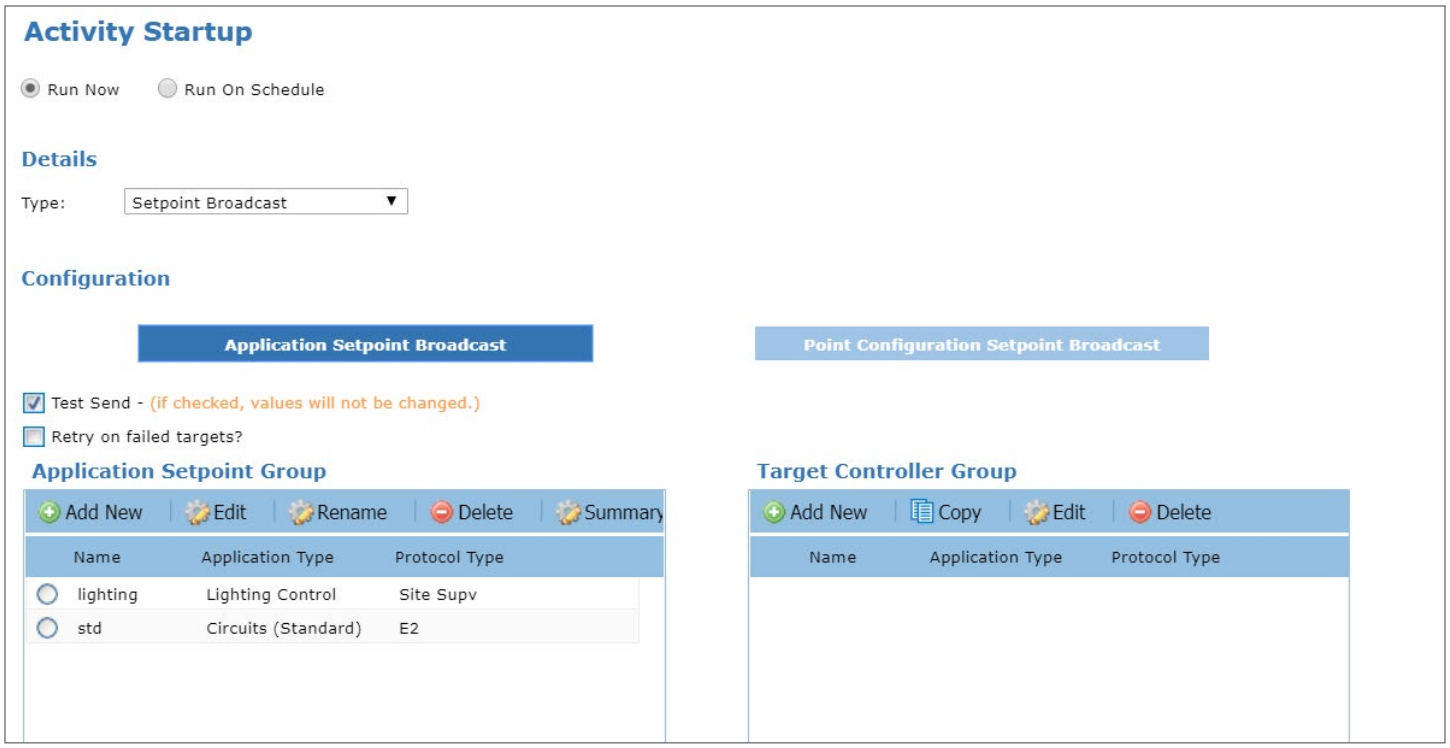


Schedule Manager

Once you click **Add New**, you will be redirected to a new page to configure Setpoint Broadcast Activity.

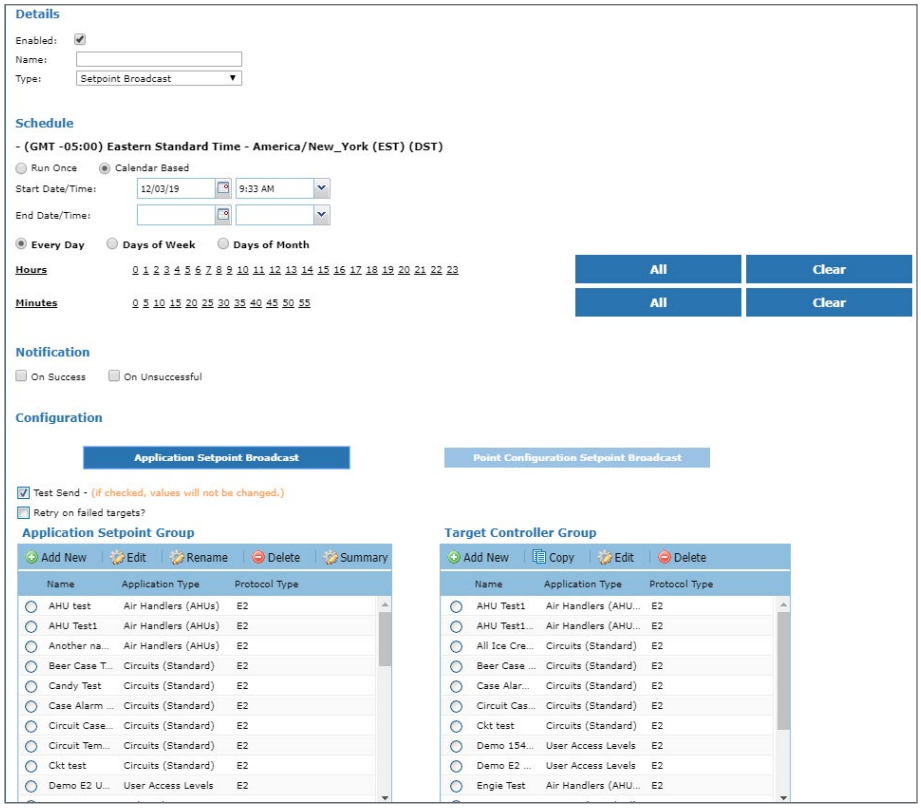
You can choose **Run Now** if it is a one-time activity or **Run on Schedule** if it is regular activity.

If you choose **Run Now**, you do not need to provide a name for your Setpoint Broadcast Activity. It will run just once.



Activity Startup Menu

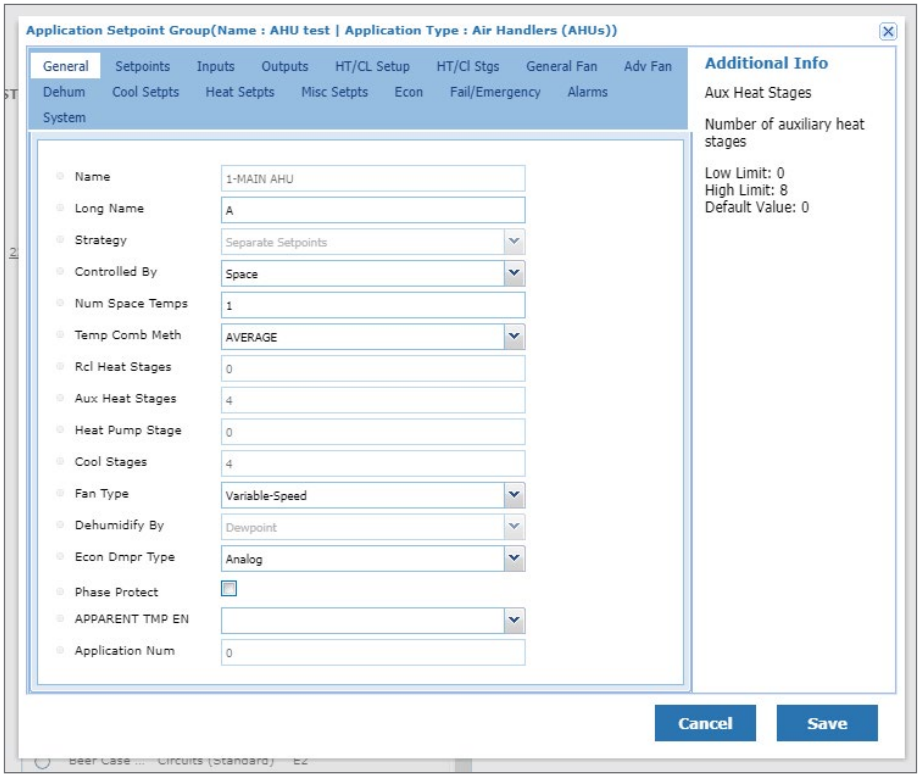
If you choose **Run on Schedule**, you must provide a name for the Setpoint Broadcast Activity, and specify a regular time for the activity to run:



Setup Broadcast Details

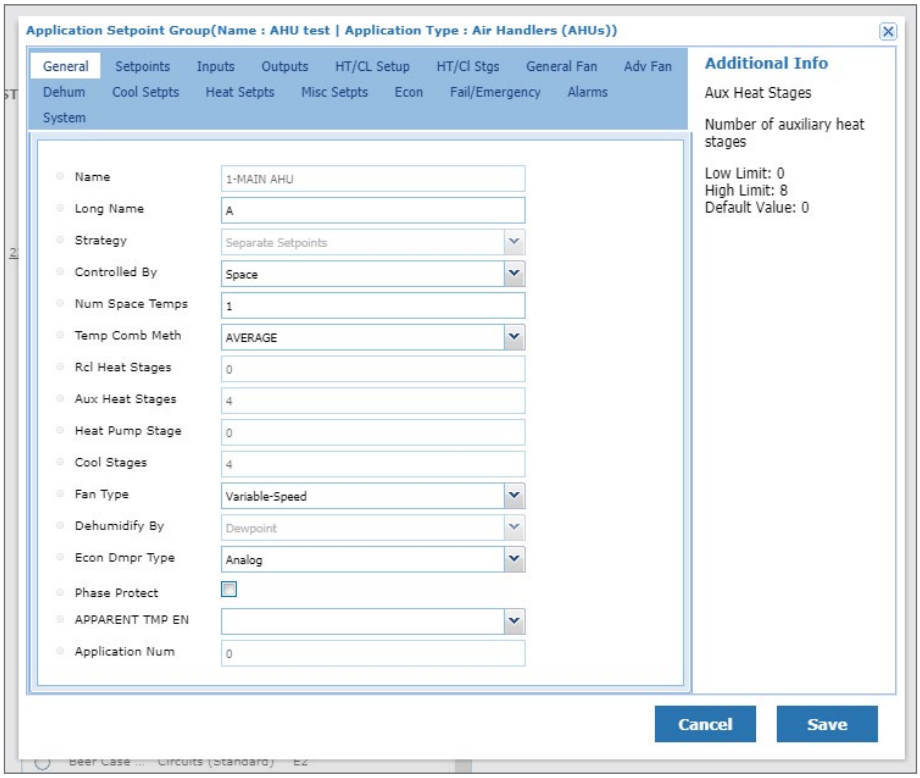
You can choose **Application Setpoint** or **Point Configuration Broadcast.**

Application Setpoint Broadcast allows you to broadcast point value changes. Most common scenarios such as User Access, Lighting Schedule, and case controller settings belong to this category, which will be addressed in the following sections.



Application Setpoint Group

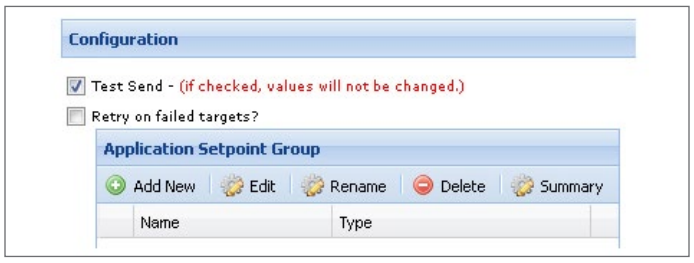
Point Configuration allows you to broadcast both **Analog and Digital Point Configurations**:



Point Configuration Group

5.2 Configuration

Test Send check-box: (When Setpoint Broadcast is set as the type of Schedule) When this box is checked, a Test Send will perform all steps of an actual setpoint broadcast (except it will not actually execute the send). The message in red next to the Test Send check-box will notify the users that selecting the check-box will not actually send the values.



Configuration Tab

The Test Send, if selected, will connect to the device and retrieve any information needed to test for valid points. This test will show up in the Schedule Manager as a setpoint broadcast entry. There's no need to recreate the schedule, just edit the schedule and unchecked the Test Send option (the details of the test will be available on the activity history page once the test has been completed). You will know that the setpoint broadcast was only a Test Send because it will be part of the activity history details message.

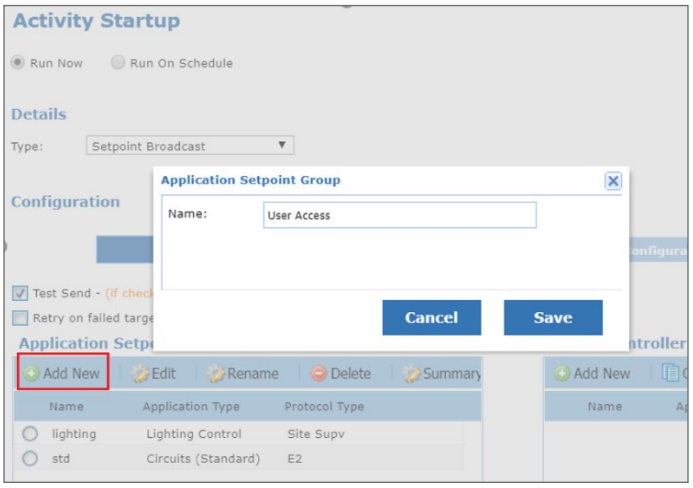
Retry on failed targets? check-box: When this box is checked, Setpoint Broadcast will re-run automatically on sites that failed or did not complete the initial broadcast. Setpoint broadcast will continue to run on each of these sites until the activity is completed or until the set number of tries is reached (for scheduled Setpoint Broadcasts only). If the Set-point Broadcast fails on a number of target control systems after the set number of tries, a file containing information about the sites and control systems that failed the activity will be generated in a sub folder under the vault (database) folder.

Details of the retry activity will be recorded in the Activity History page once the setpoint broadcast is completed.

5.3 Application Setpoint Broadcast

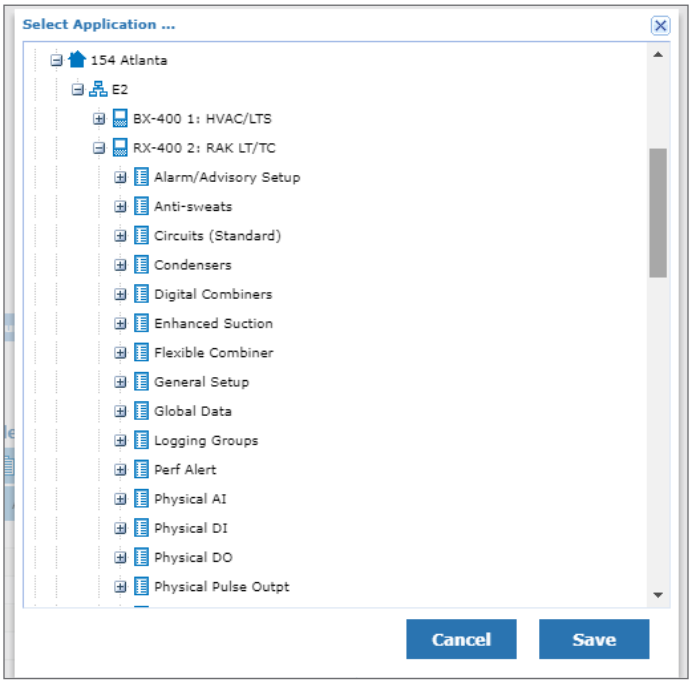
Choose Change Template

Once you have chosen Application Setpoint, click **Add New**:



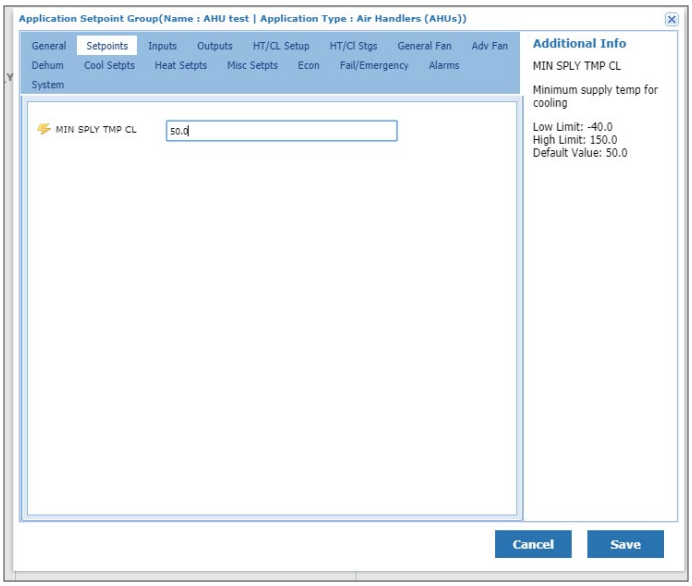
Changing Template

Select an Application from the tree structure to start compiling your Change Template:

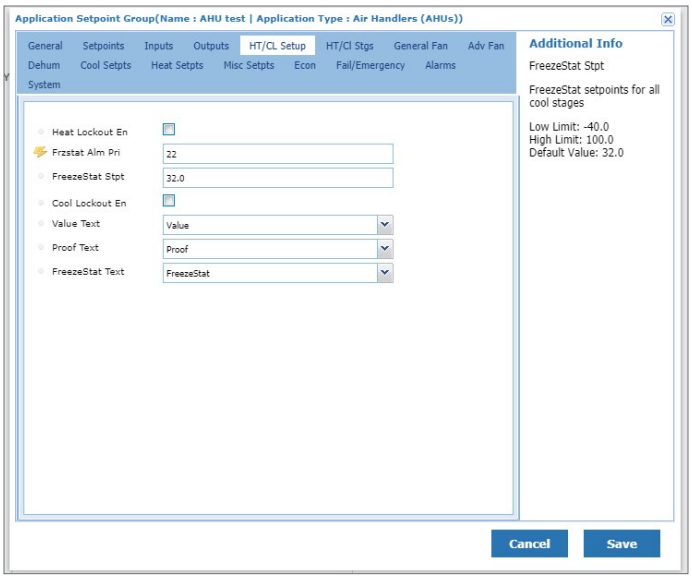


Selecting Application

Go through different point tabs to choose the point and enter the value you want to change:

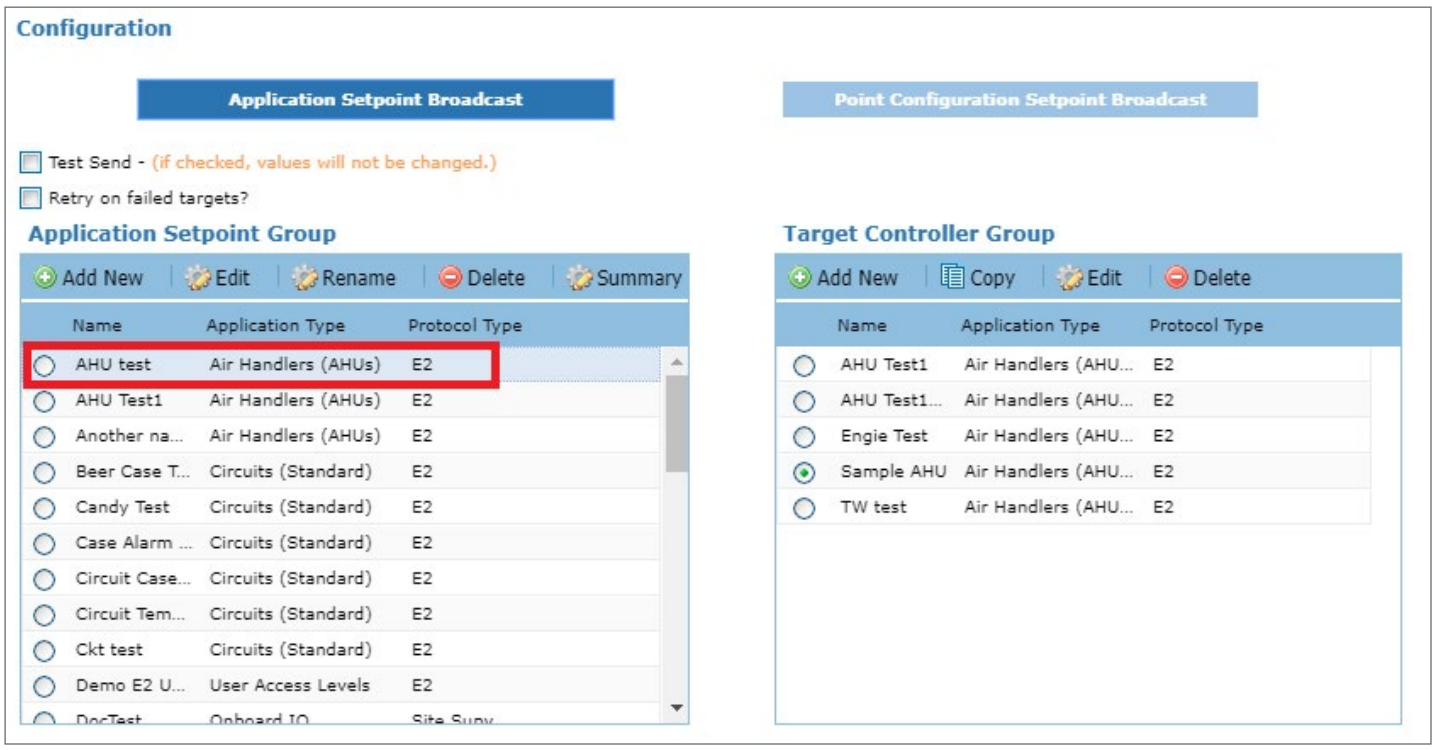


Point Tabs



HT/CL Setup

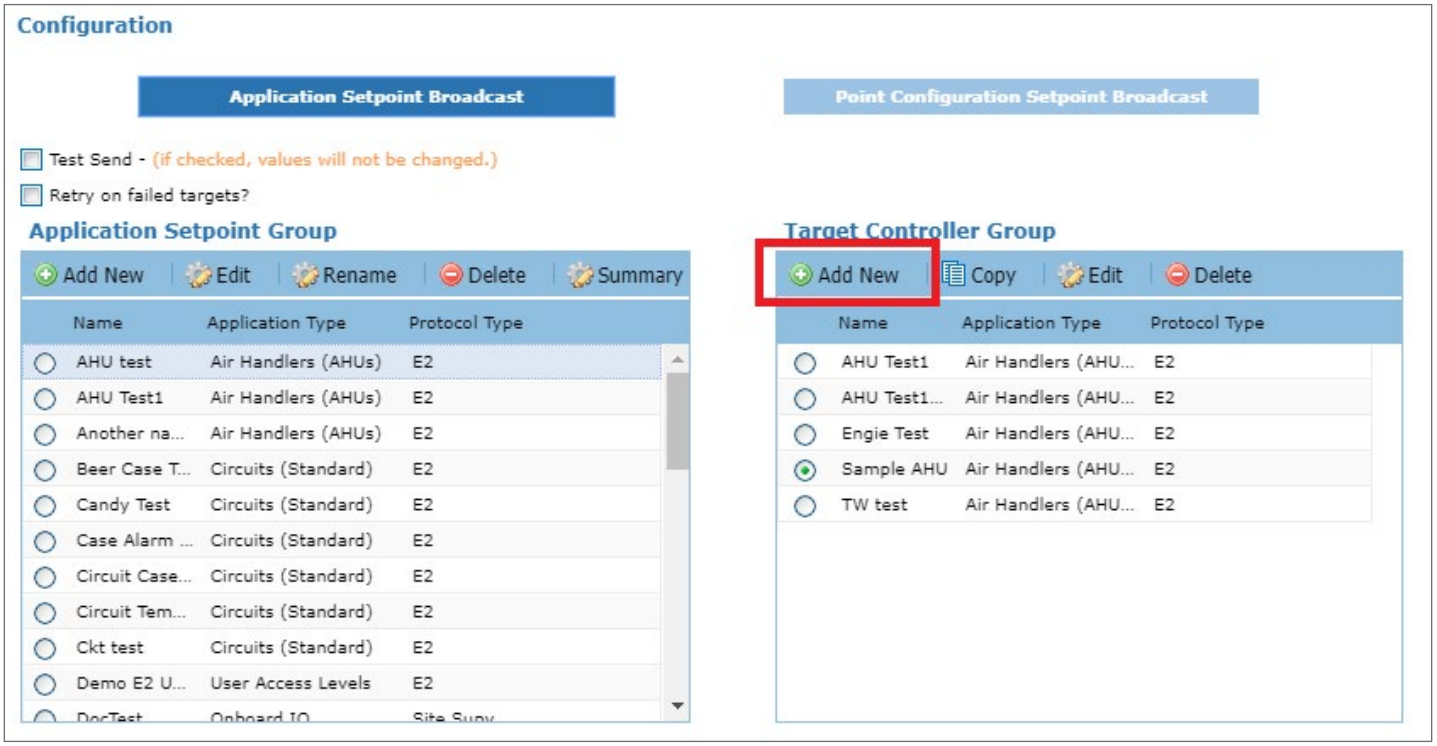
Click **Save** and the **Change Template** is saved by the name you provided:



Saving the Template

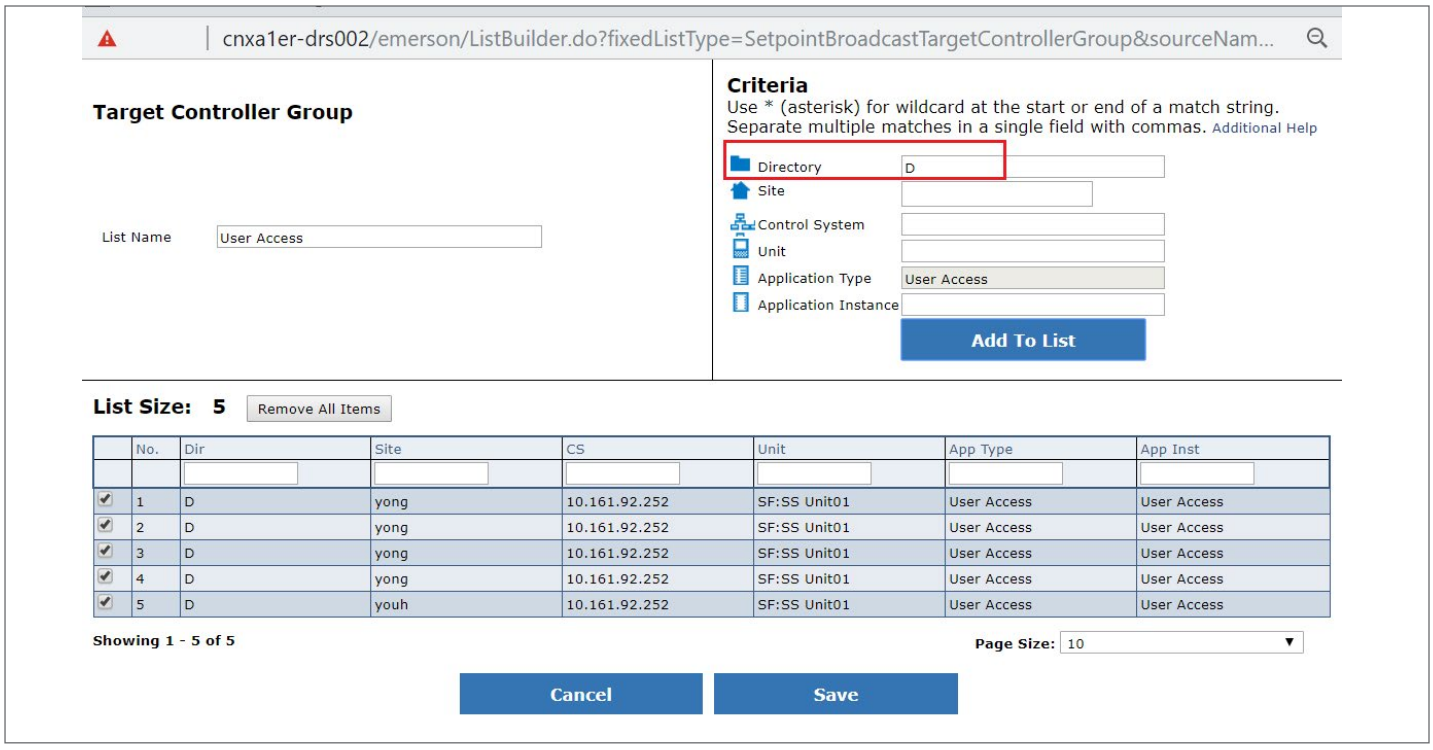
Choose Target Controller Group

If there are existing Target Controller Groups for same application type, the mapping entries are filtered. Otherwise, you can **Add New**:

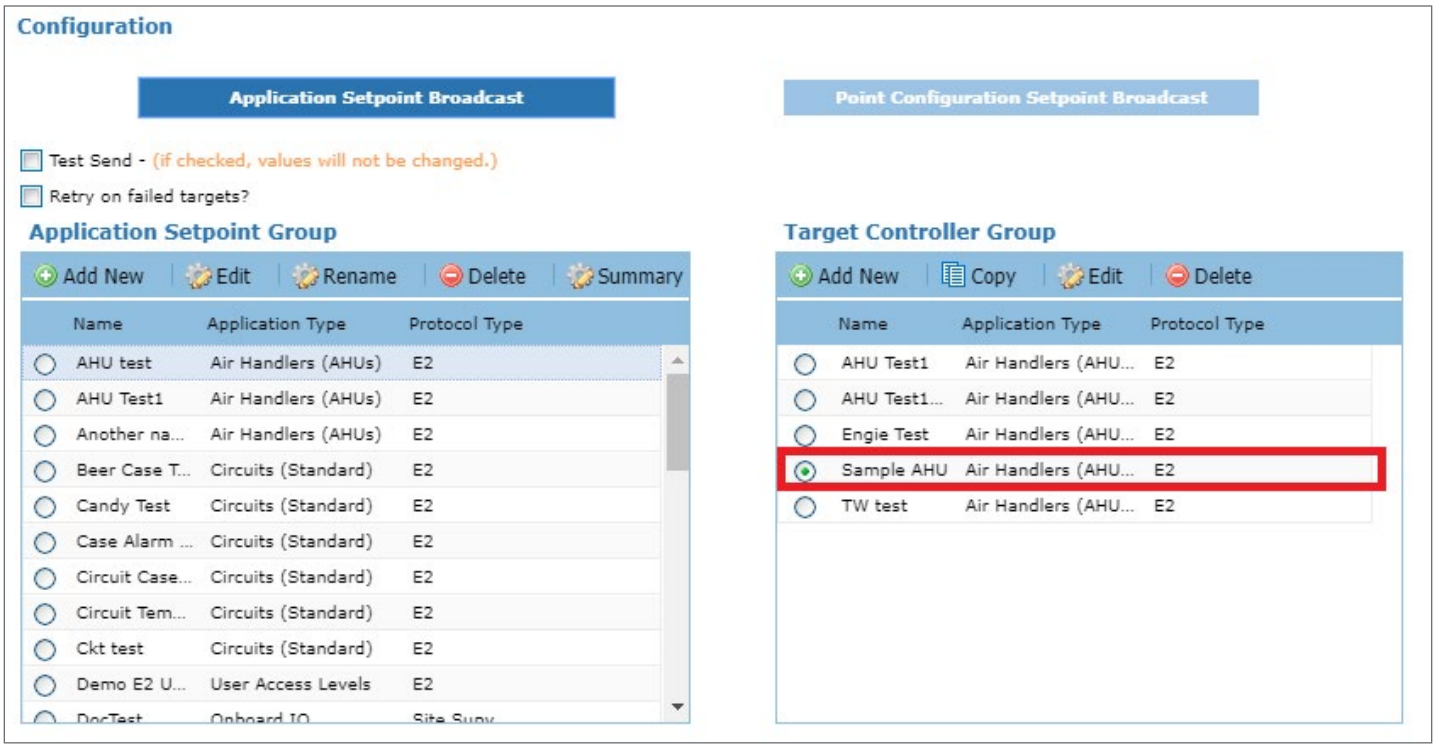


Target Controller Group

Filter the Target Group based on **Criteria**:



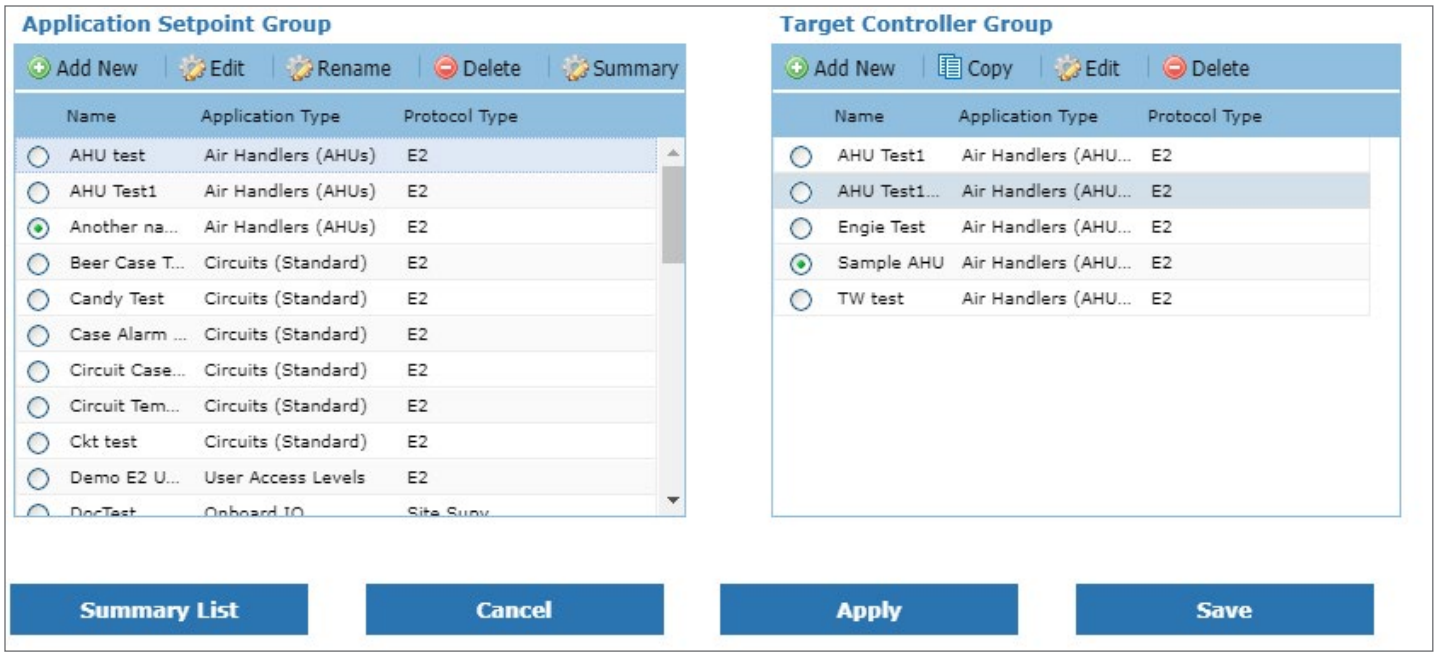
Filter Target Controller Group



Saving Target Controller Group

Choose **Change Template and Target Controller Group** and Click **Go** (Run Now) or **Apply** (Run on Schedule).

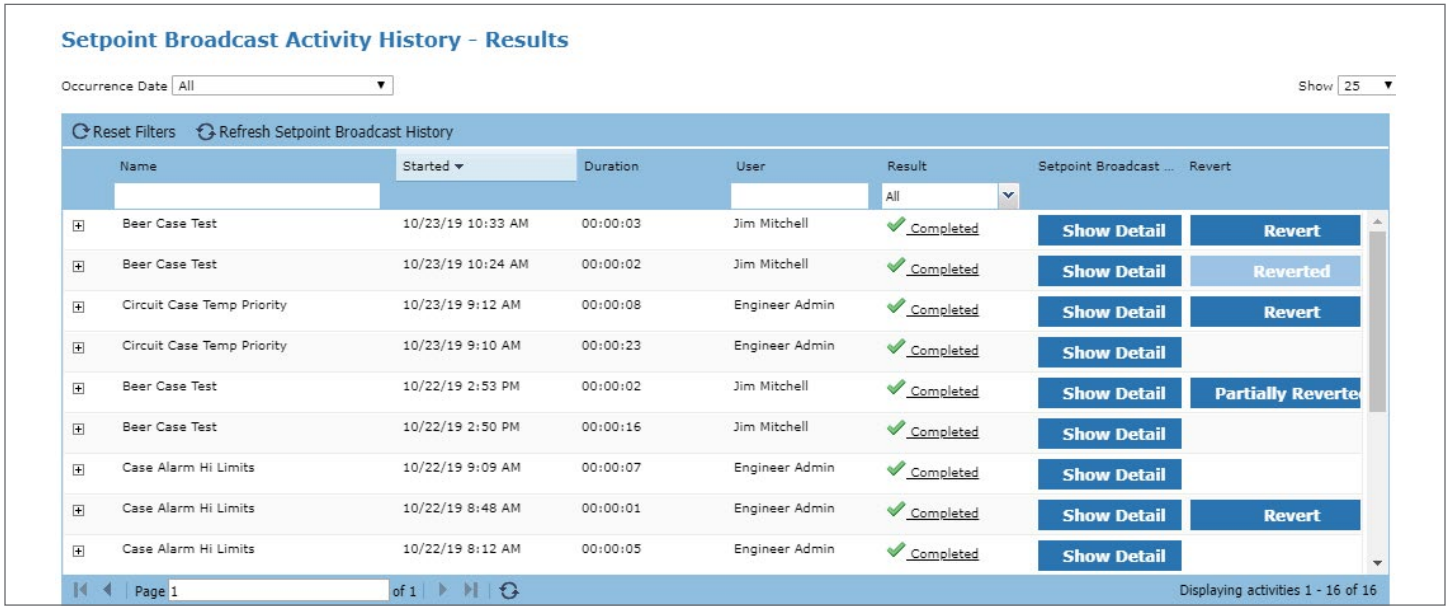
When you select one Application Setpoint Group for an application type, the matched Target Controller for the same application type will be filtered, you can only choose one Application Setpoint Group and one Target Controller Group for Setpoint broadcast activity.



Saving Target Controller Group

Check Setpoint Broadcast History

You can select **Admin Tools** > **Setpoints** > **Setpoint Broadcast** > **Setpoint Broadcast History** to view the setpoint broadcast activity result. It is including information such as the type of activity performed.



Setpoint Broadcast Activity History

Name: The Application Setpoint Group name when creating a new setpoint broadcast schedule.

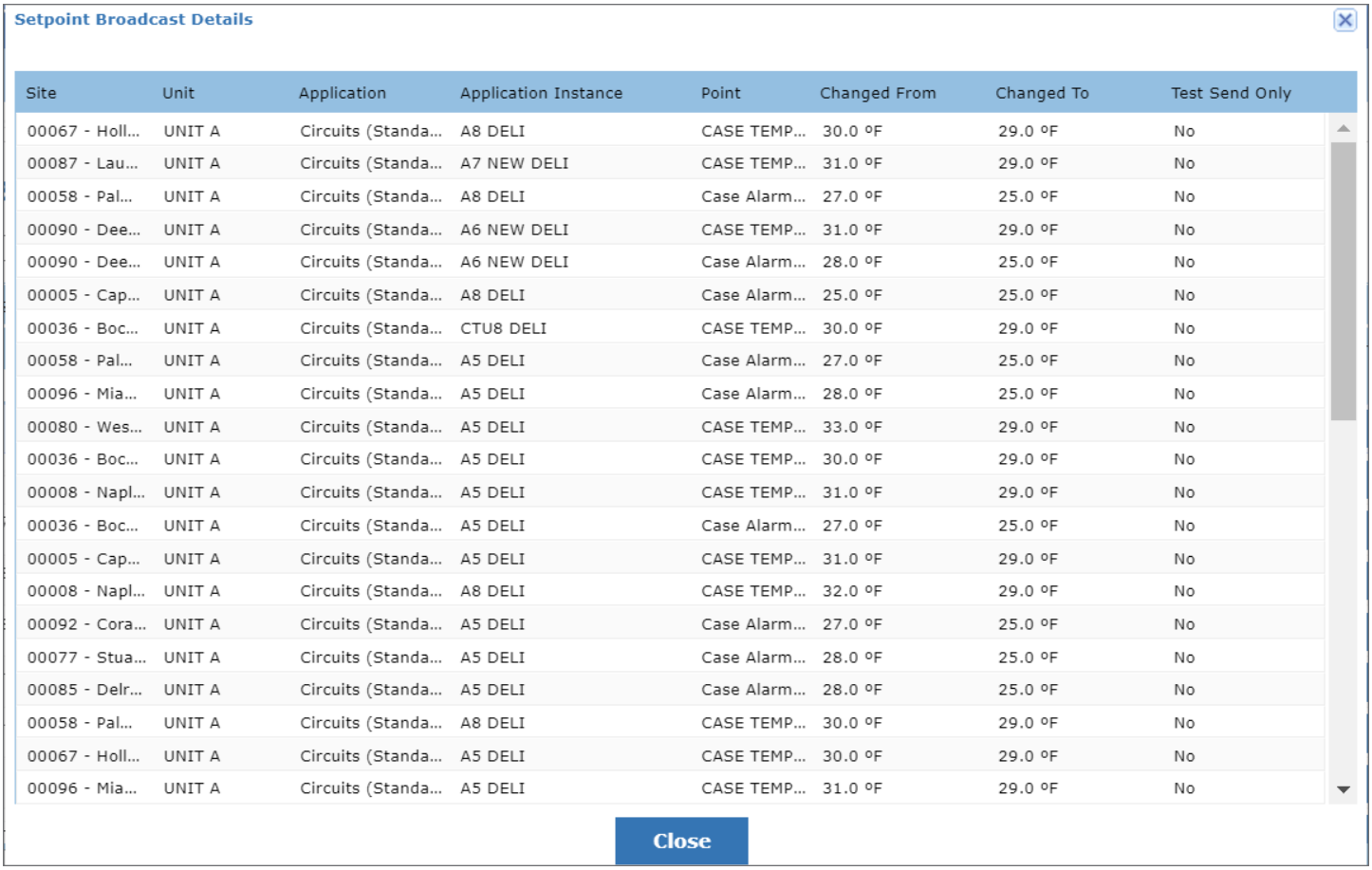
Started: The time and date the activity began.

Duration: Total elapsed time for the activity to complete.

User: The user who started the activity.

Result: Details the outcome of the activity and whether or not it was successfully completed. (Clicking a link in the **Result** column will open a page contain more details about the activity performed.)

Setpoint Broadcast Details: Hover on the **Show Detail** button to see a tip to indicate XXX of XXX total applications have been updated. When the button is clicked, a pop-up window will list all the changed points and its original target value.



Setpoint Broadcast Details

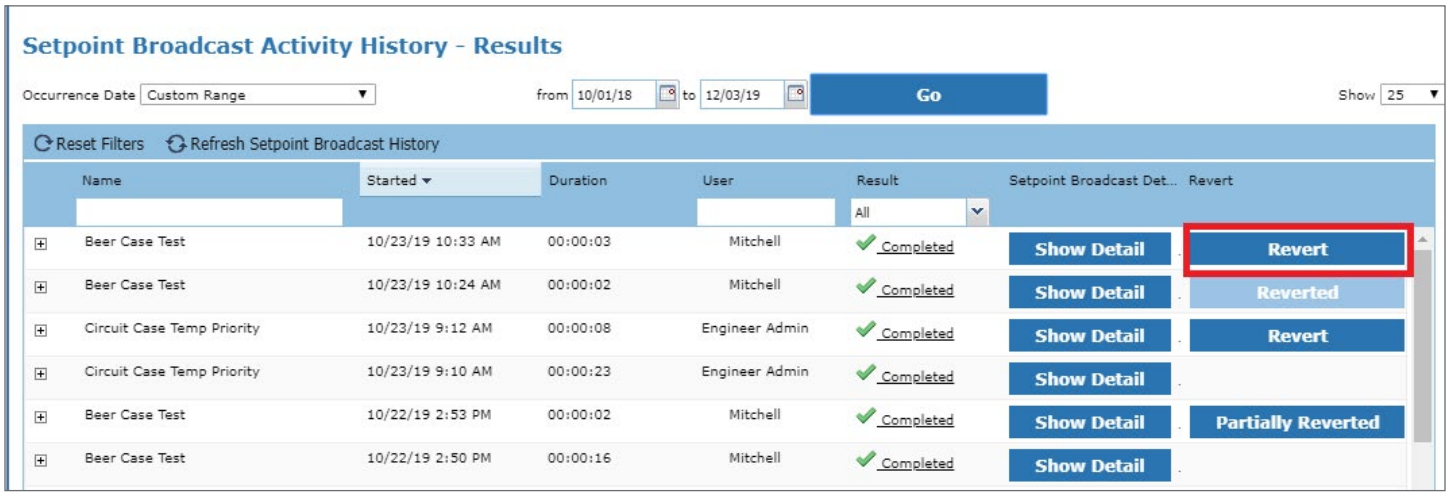
Revert: It allows you to revert the point value by clicking the Revert button. You might see buttons with three names:

Revert: No points value have been reverted.

Reverted: All points have been reverted.

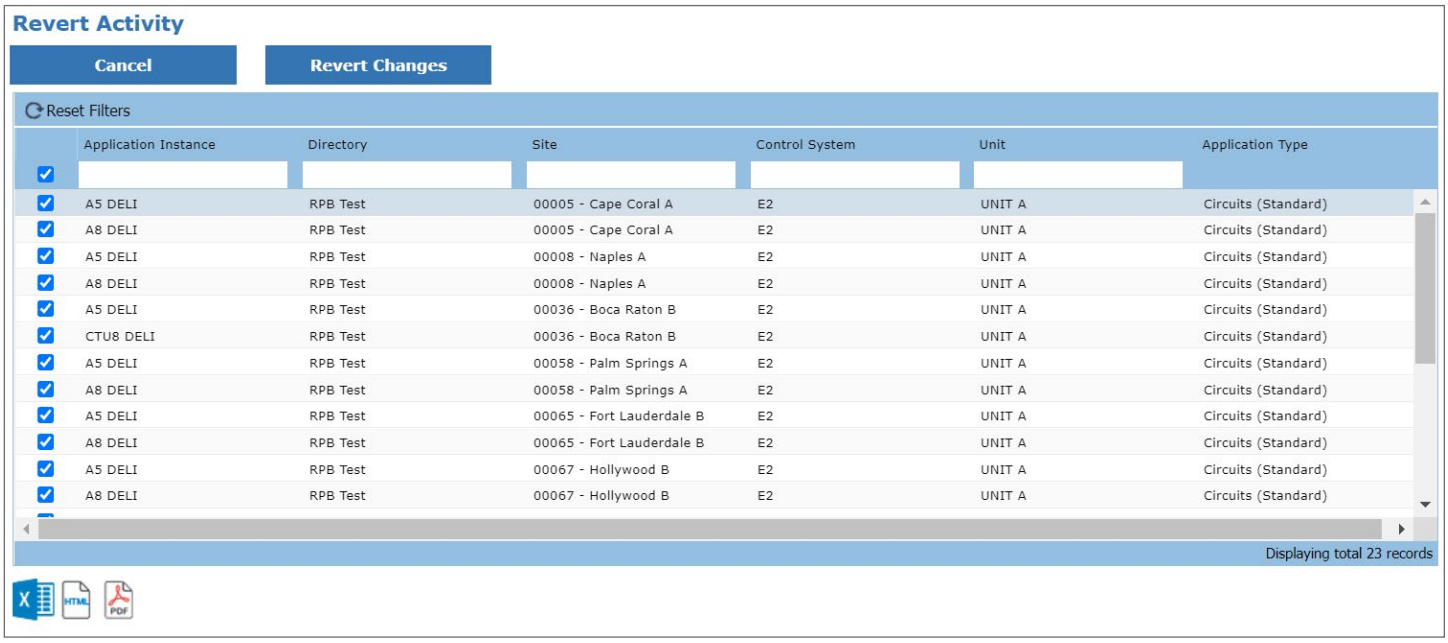
Partial Reverted: Parts of the points have been reverted.

You can revert to Application Setpoint Broadcast if necessary. *Note that you can only revert once.*



Activity History

If you want to change the broadcast value back, you can click the **Revert** button. After clicking the button, it will jump to a **Revert Activity** page.

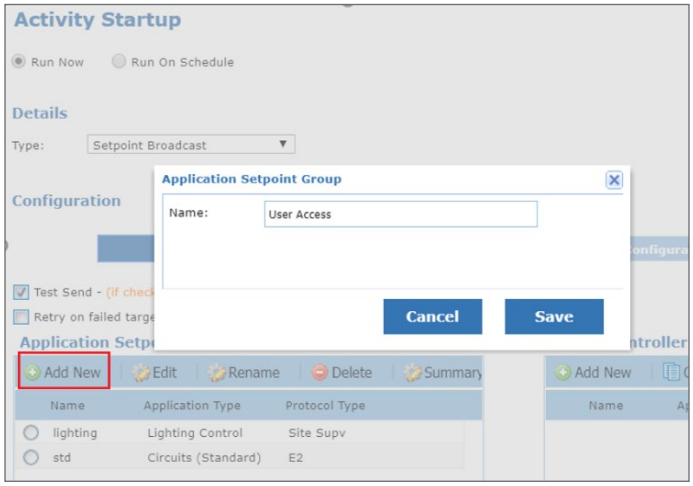


Revert Activity

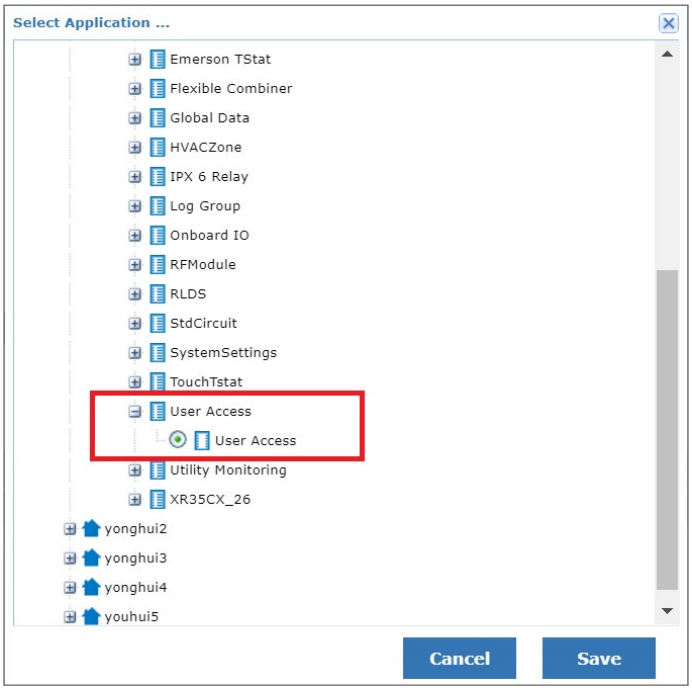
If you wish to revert points back to their original value, choose the points that you want to change by clicking the check box in front of the row. Then click the **Revert Changes** button. The activity will commence.

5.3.1 User Access Change

1. Add an Application Setpoint Group and provide a name:



Add Application Setpoint Group



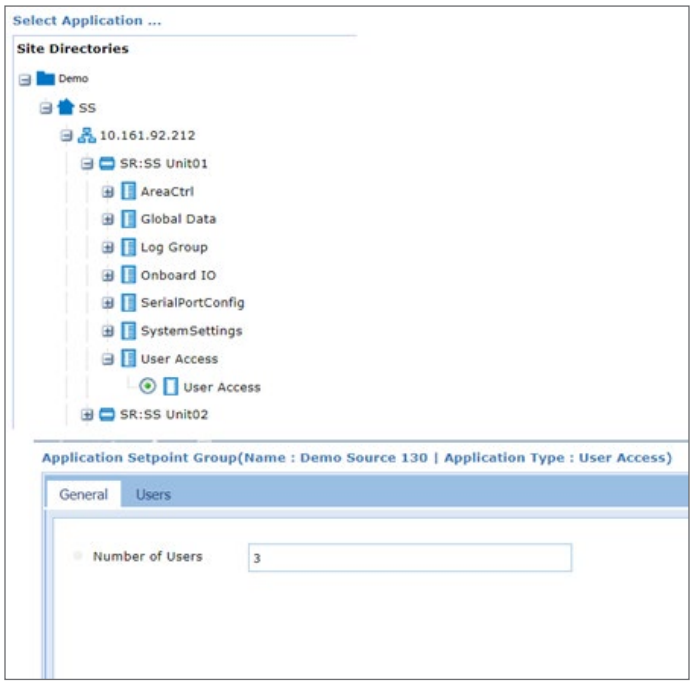
Add Application Setpoint Group

2. Select a User Access Instance from the **User Access** Application Type from the Tree structure to start your Change Template:

3. Add/Delete a new user or role, select user information by clicking the **lightning bolt** and **Save**. The lightning bolt icon indicates the change to be applied. Click **Save**, and your Change Template is saved.

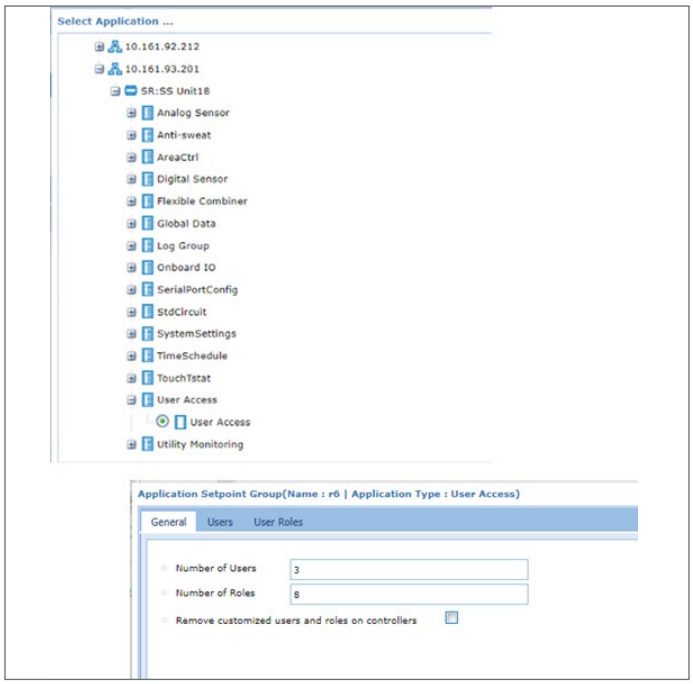
Note: Only Site Supervisor and E3 2.24 and Connect+ 1.5.6 and above versions can support role broadcast. E2 does not support role management.

If you create a User Access broadcast template by choosing a controller below version **2.24,** you will not see the **Role** tab.



User Access Template for Site Supervisor/E3 2.24 Below Version

But if the template is created based on Site Supervisor/ E3 2.24 and above versions, you can see the **Role** tab and broadcast it to the controller versions that support this function.

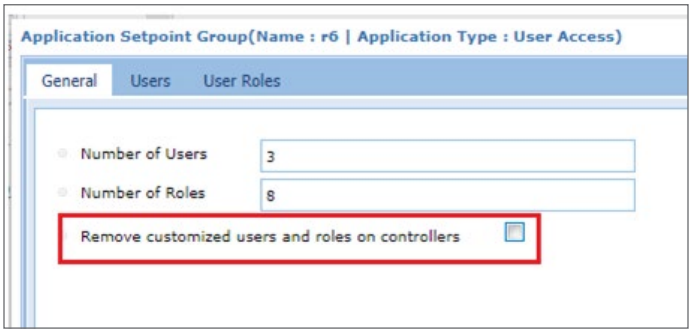


User Access Template for Site Supervisor/E3 2.24 Above Version

To add a new user or a role by increasing the user or role number in the **General** tab, then you will see a new blank role in **Users** or **Roles** tab.

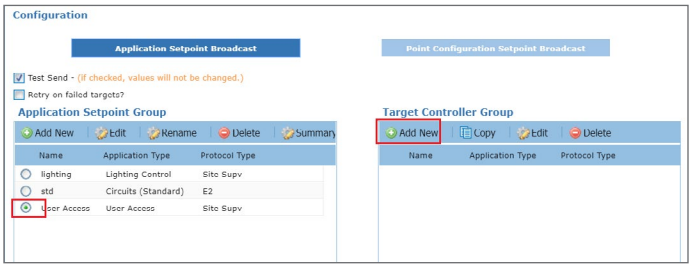
If deleting a user or a role by enabling the check-box before each user or role, make sure the lighting bolt of the delete check-box is checked. If a user has been assigned a role that is deleted, this user will be automatically assigned to **Non-Technical End User**.

If you want to remove all existing customized users and roles on the target controller at the same time, and replace with a batch of new users and roles configured in the template after broadcast, you can check the "Remove customized users and roles on controllers" check-box in the **General** tab.



Remove User and Roles Check-box

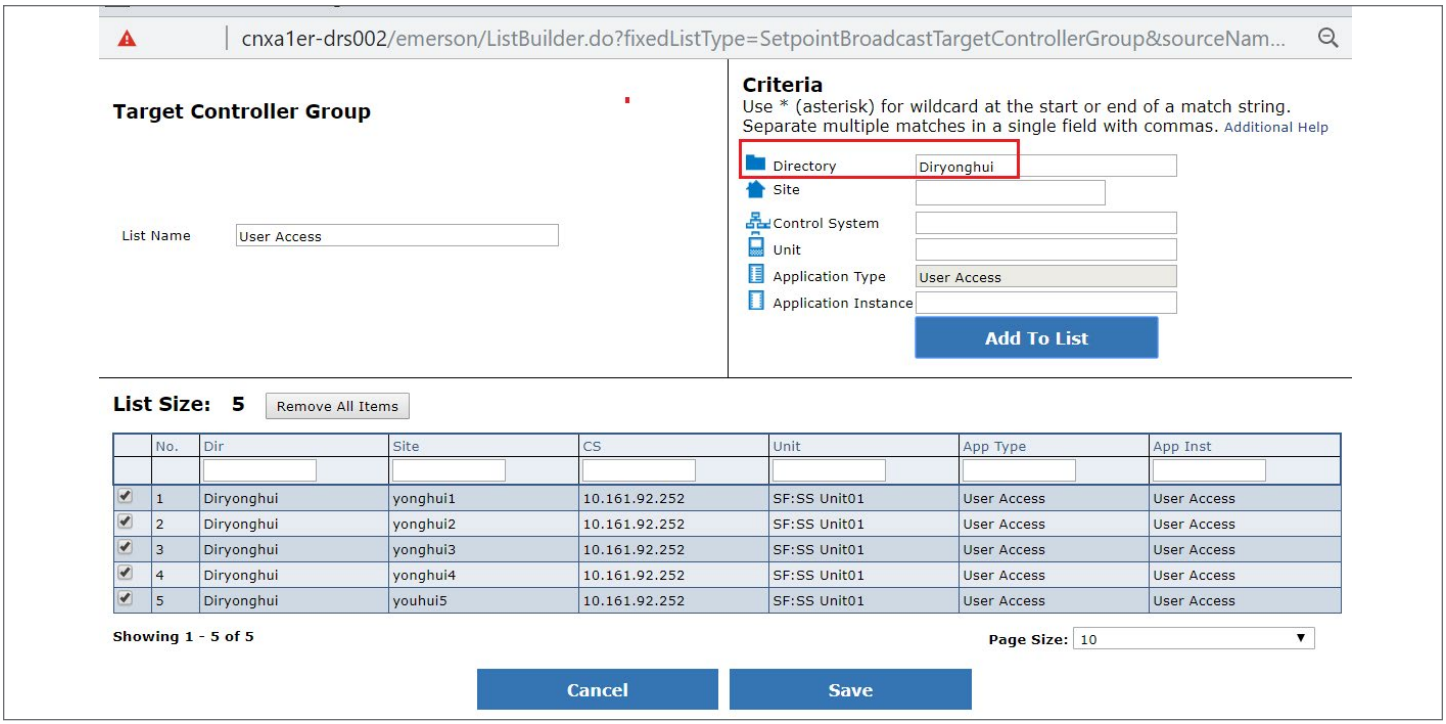
4. Select the newly added **User Access** Application Setpoint Group. You can either click Add New in the **Target Controller Group**, or choose an existing Target Group.



User Access

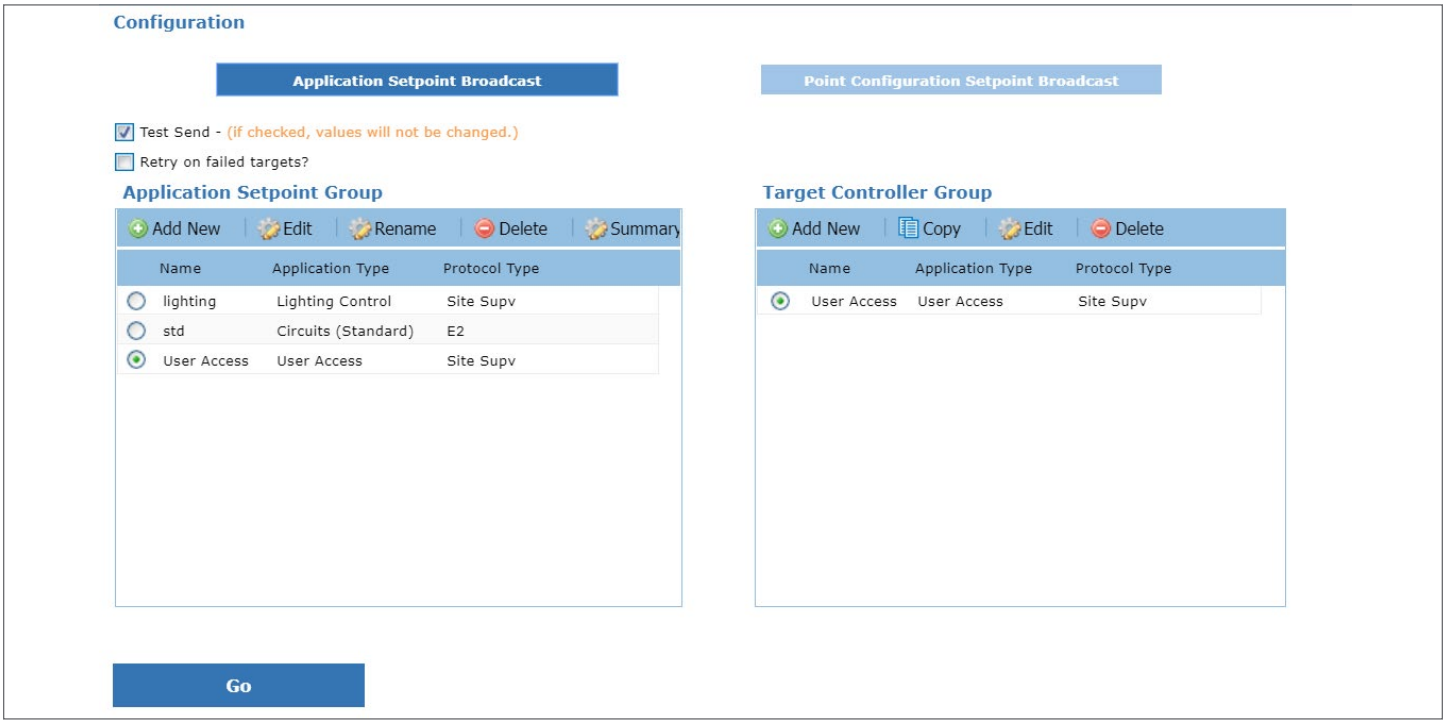
Note: If you have a template created for User Access before upgrading Connect+ from 1.5.6 below to 1.5.6 and above versions, you should create new template for User Access.

5. The **Target Controller Group** window will display. The List Power Builder allows you to choose the **Target Group** by filtering the **Application Type** with **User Access**:



List of Power Builder

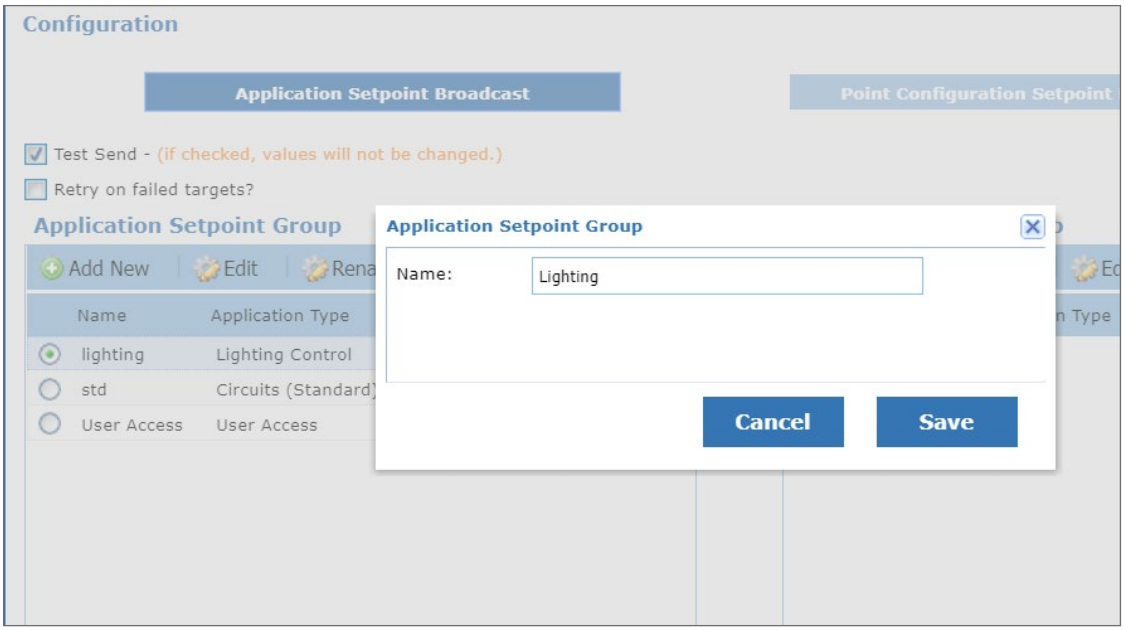
6. Select the **Target Controller Group** and click **Go**. User Access will be broadcasted:



Selecting the Target Controller Group

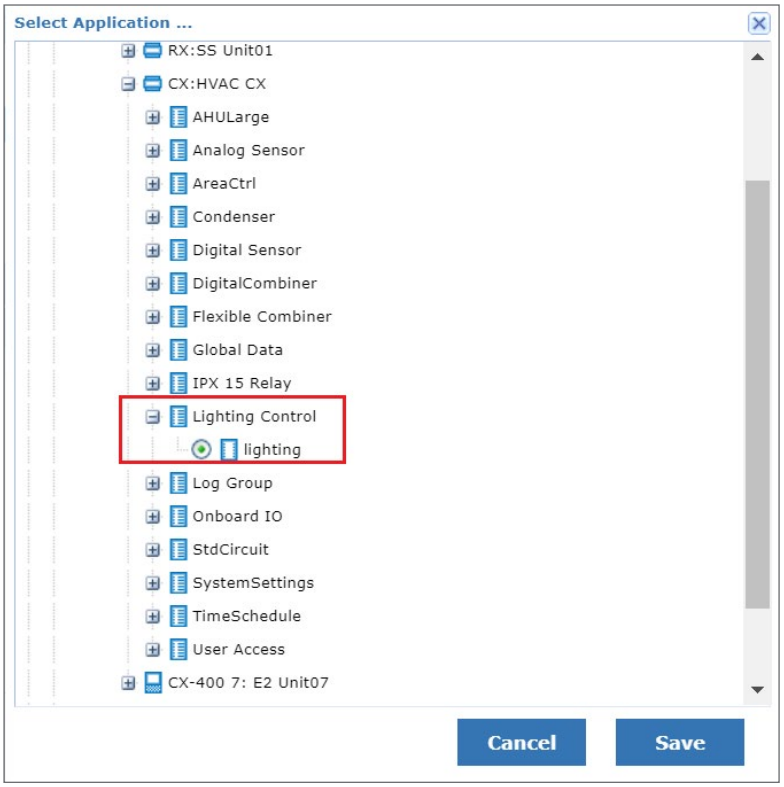
5.3.2 Lighting Schedule Change

1. Add a new **Lighting Application Setpoint Group** and provide a name:



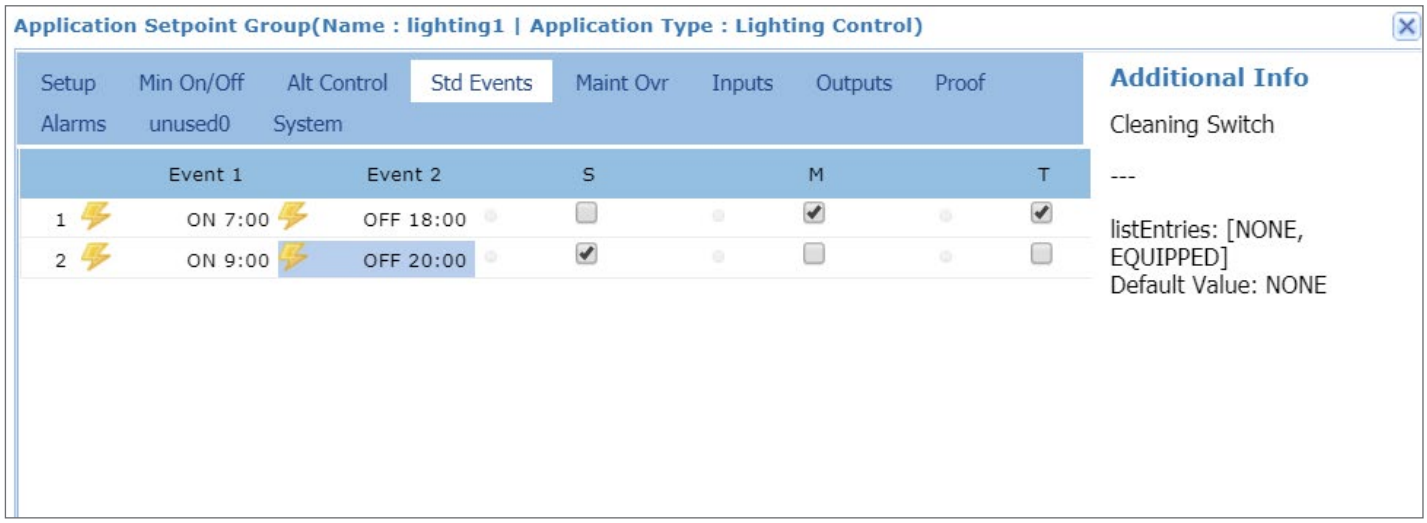
Lighting Application Setpoint Group

2. Select a Lighting instance under the **Lighting Control** Application Type from the tree structure:



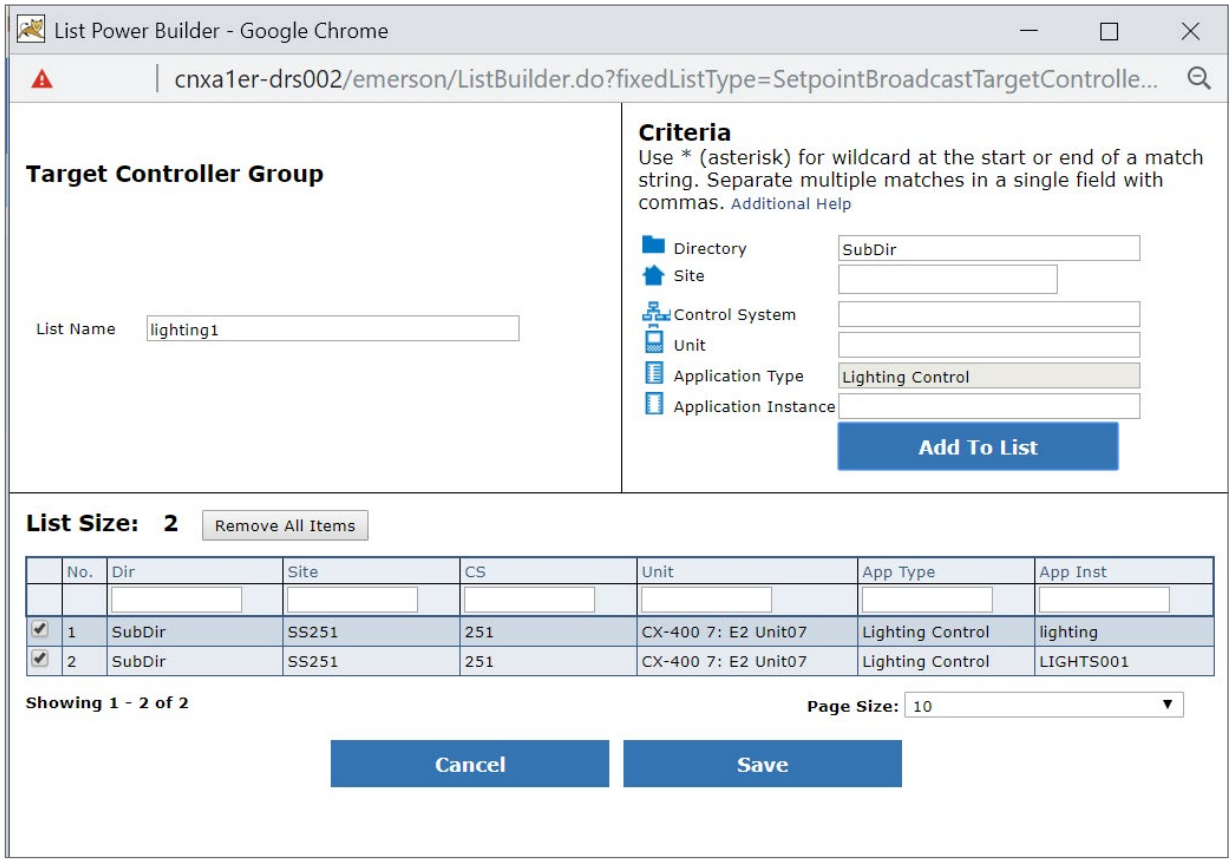
Lighting Instance

3. Click the **lightning bolt** in front of the point you wish to broadcast. The **Std Events** could be used for the Lighting Schedule:



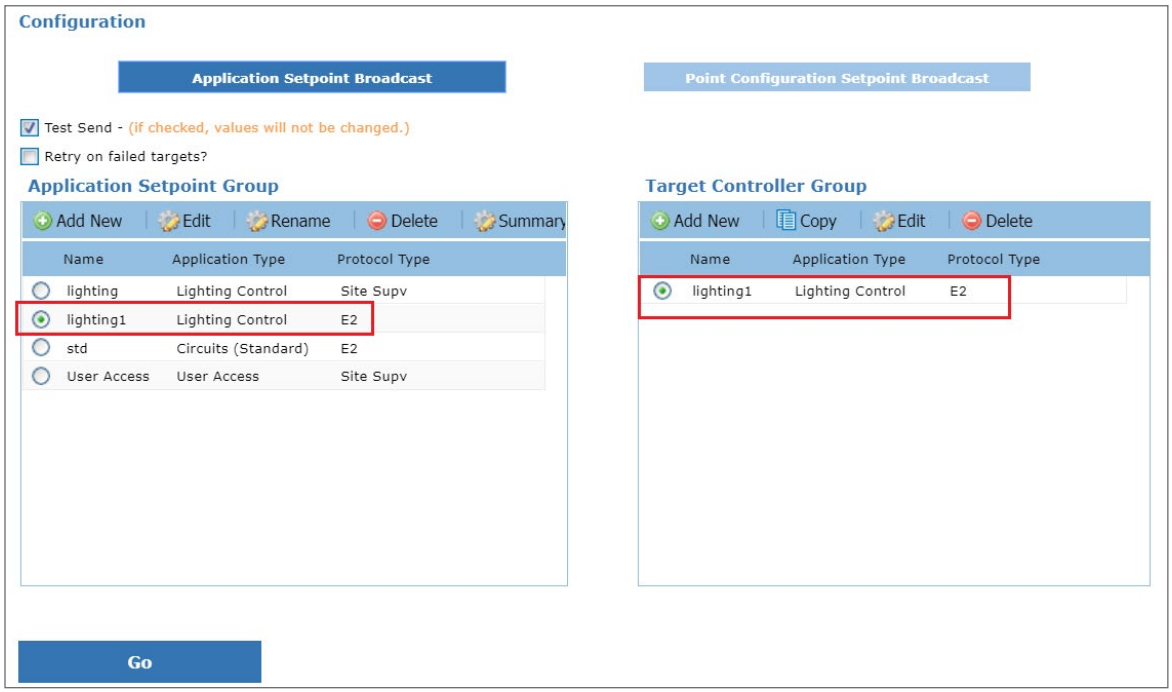
Std Events Option

4. Select the newly added **Lighting Application Setpoint Group**. Add a new Target Controller Group of Lighting from the **Target Controller Group** window, by filtering Application Type using ***Lighting Control***.



Lighting Control Menu

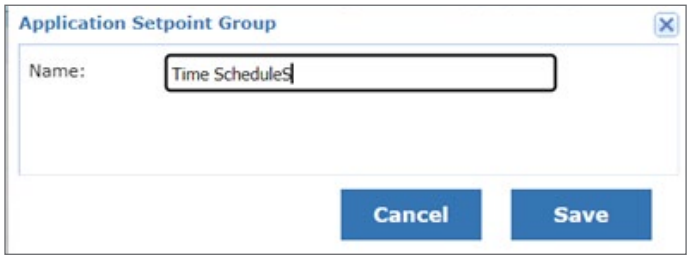
5. Select the **Target Controller Group** and click **Go**. Lightning will be broadcasted:



Lighting Control

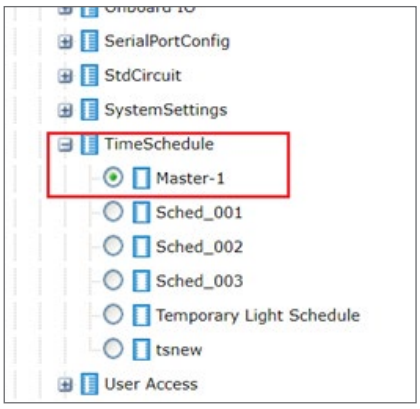
5.3.3 Time Schedule Change

1. Add a new Time Schedule Application Setpoint Group and provide a name:



Adding Time Schedule

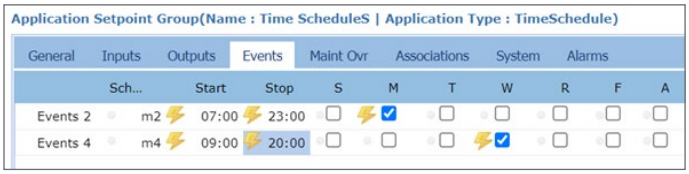
2. Select a **Time Schedule** instance from the simulative tree.



Time Schedule

If the instance selected from the tree is a master schedule, it could only broadcast to master schedule on the target controller. If the selected instance is a slave schedule, it can only be broadcasted to a slave schedule on the target controller.

3. Click the lightning bolt in front of the event properties that you wish to broadcast for an existing schedule event:



Broadcast Existing Schedule Event

A master schedule event cannot be configured as relative time.

If the schedule event of which event number is existing on the target controller, then the event will be updated. If not, the update will not be applied to the event on the target controller.

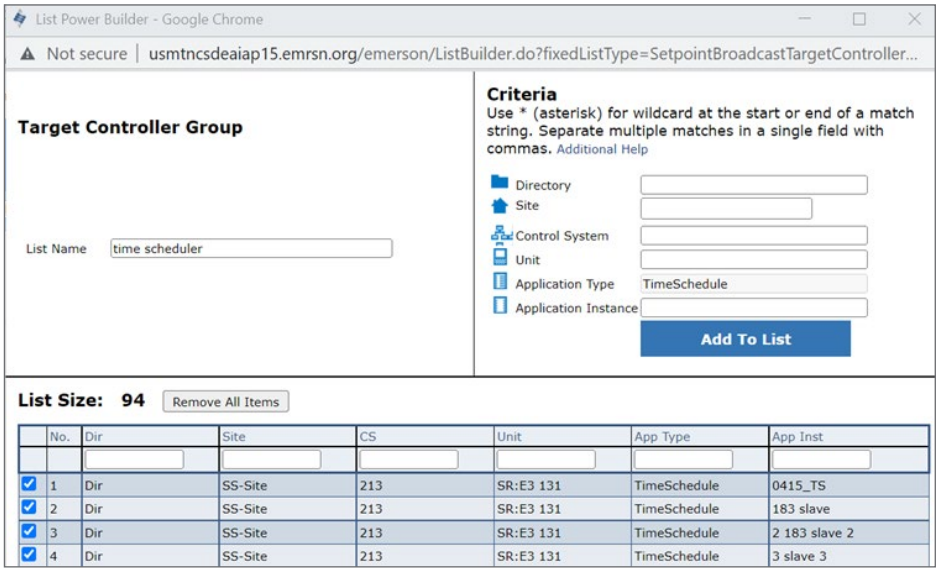
For example: A user would like to apply Events 2 properties to the target controller, but on the target controller, the Events 2 do not exist, then the change will not be applied.

Events for Time Schedule

If you want to add a new event and broadcast it, you need to increase the Number of Events in the **General** tab, then configure all mandatory properties for the newly added event, check all the lighting bolts for the newly added events for broadcast.

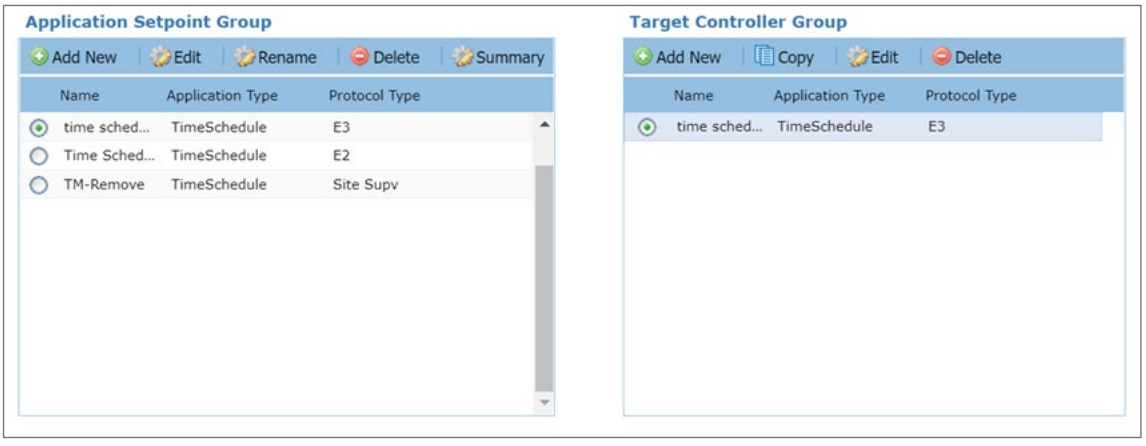
If the event number on the target controller has been occupied, it will overwrite all the properties for the relative event, if not, the newly added event will be broadcasted to the target controller as a new event.

4. Select the newly added time schedule **Application Setpoint Group**. Add a new **Target Controller Group** of time schedule from the **Target Controller Group** window by filtering the **Application Type** using a **Time Schedule**.



Target Controller Group

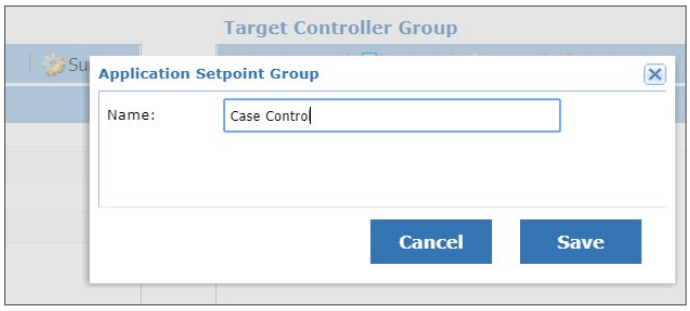
5. Select the **Target Controller Group** and click **Go**. The **Time Schedule** will be broadcasted:



Selecting the Target Controller Group

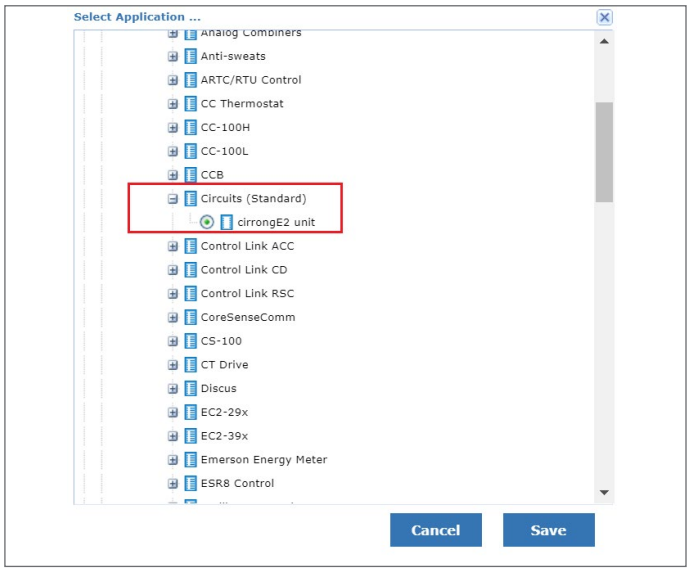
5.3.4 Case Controller Setting Configuration

1. Add a new Circuit (Standard) Application Setpoint Group and provide a name:



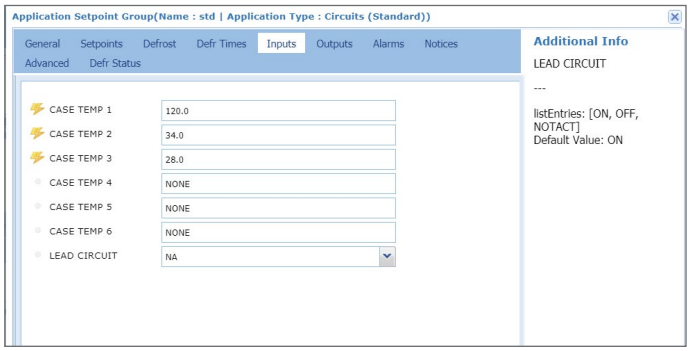
Case Control

2. Select a Circuit (Standard) instance from the simulative tree.



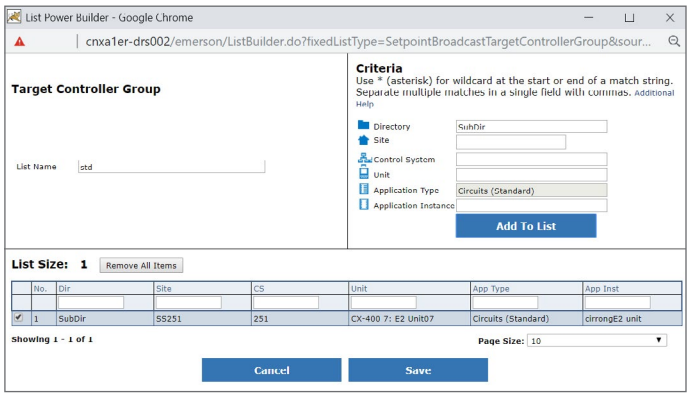
Circuit Standard

3. Click the lightning bolt in front of the point that you wish to broadcast:



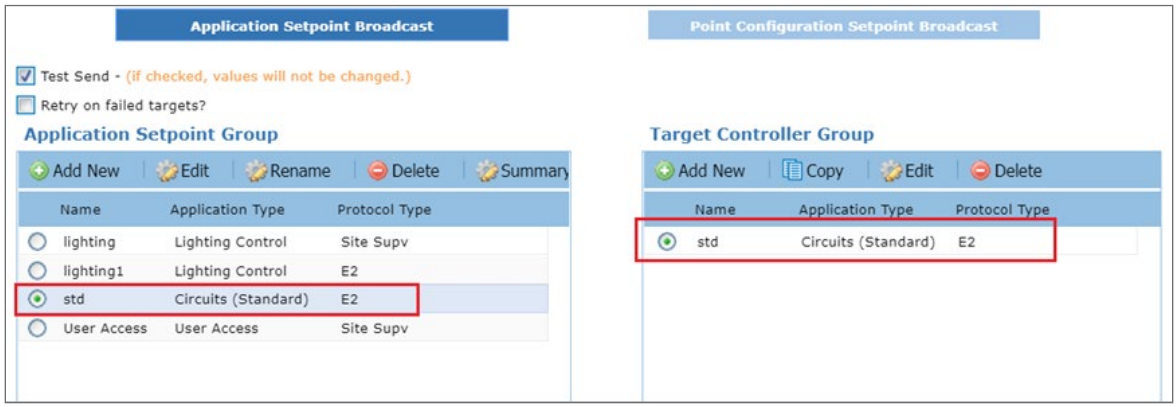
Lead Circuit

4. Select the newly added Circuit (Standard) Application Setpoint Group. Add a new Target Controller Group of Circuit (Standard) from **Target Controller Group** window, by filtering the Application Type using a **Case Controller Type such as Circuit (Standard)**.



Case Controller Type

5. Select the Target Controller group and click **Go**. The Circuits will be broadcasted:



Selecting Target Controller Group

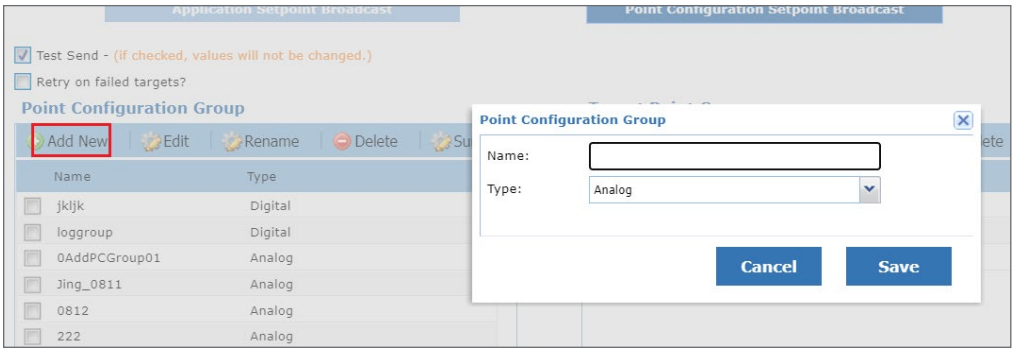
5.4 Point Setpoint Broadcast

Point Configuration Broadcast changes the setpoint broadcast approach to sending a point configuration.

When the **Point Configuration Broadcast** button is clicked, the Application Setpoint Group changes to Point Configuration Group and Target Point Group. Setpoint Configuration can be configured separately at the point level. Right-click a point in the tree to open the Activity Startup page and the **Point Configuration Group** pop-up where you can enter a name for the point and select **Analog** or **Digital**.

Choose Change Template

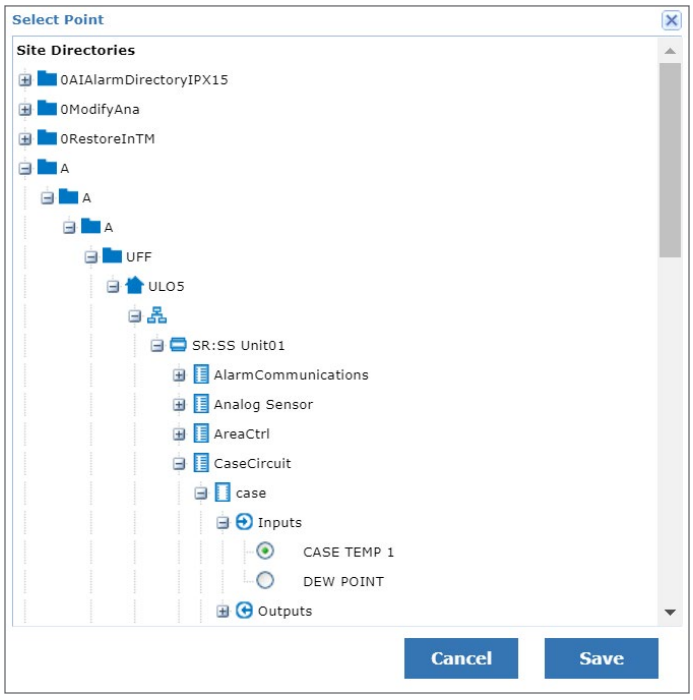
Once you have chosen **Point Configuration Broadcast**, click **Add New**:



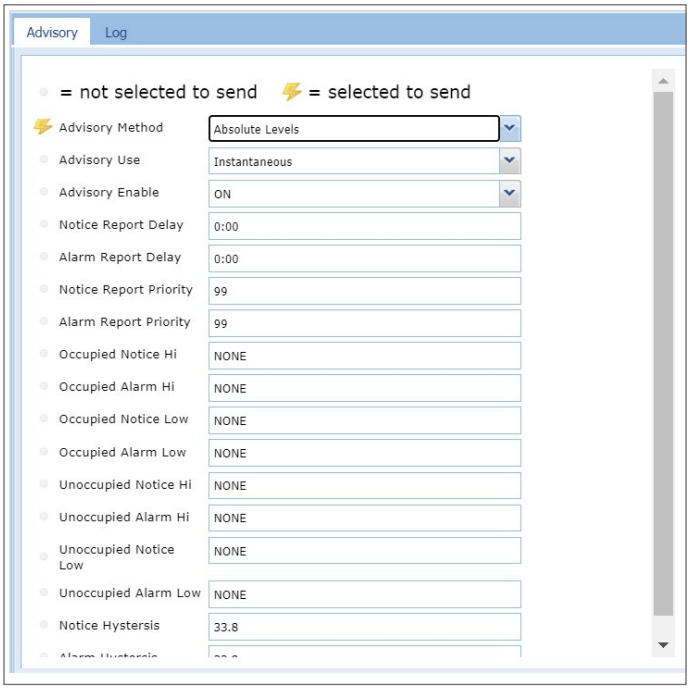
Point Configuration Broadcast

You can choose **Analog** or **Digital** from the **Type** drop-down. Click Save to jump to the point selection window to start compiling your Change Template:

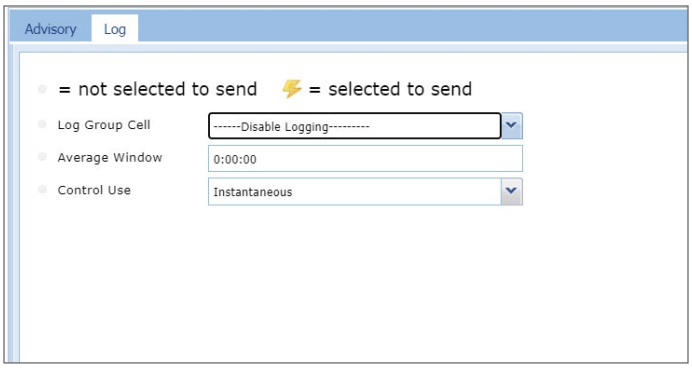
Configure Advisory or Log configuration in **Point Configuration Group** page.



Select Point

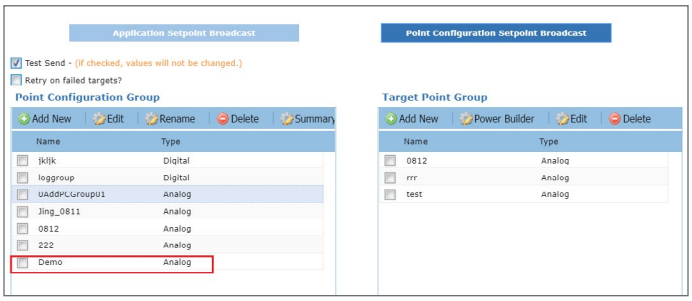


Configure Advisory



Log Configuration

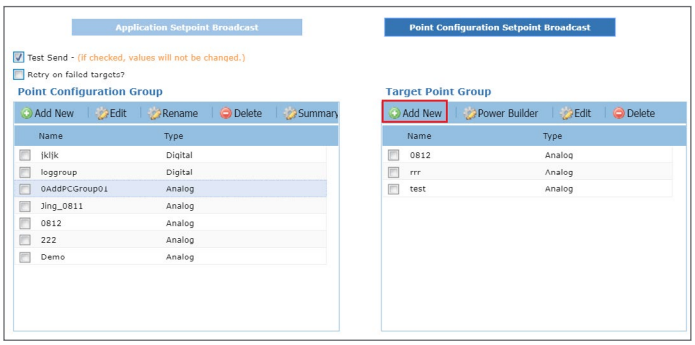
After configuration is done, click **Save** and the Change Template is saved using the name you provided:



Demo/Analog

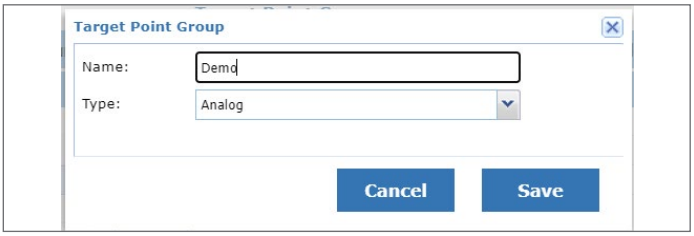
Choose Target Controller Group

You can choose existing **Target Point Group**s, or you can **Add New**:



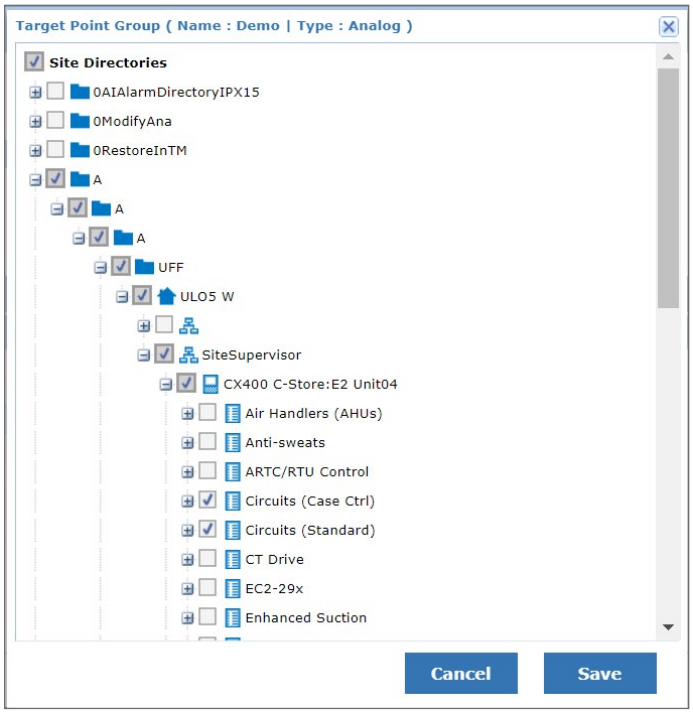
Adding New Target Point Group

Provide a **Target Point Group** name and select **Type**. The type could be **Analog**, **Digital**, or both.



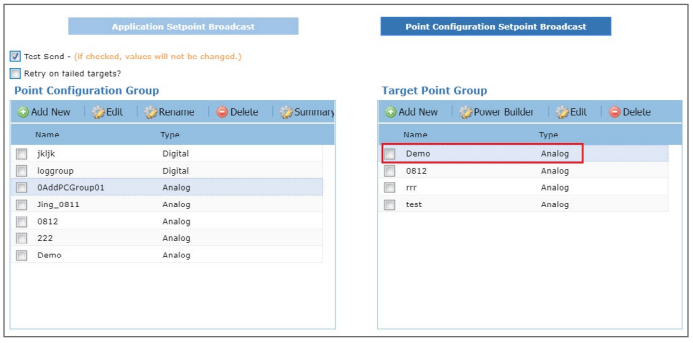
File Naming

Click **Save** and then choose a target point for broadcast.



Choosing Target Point

Save the **Target Controller Group** as an entry:

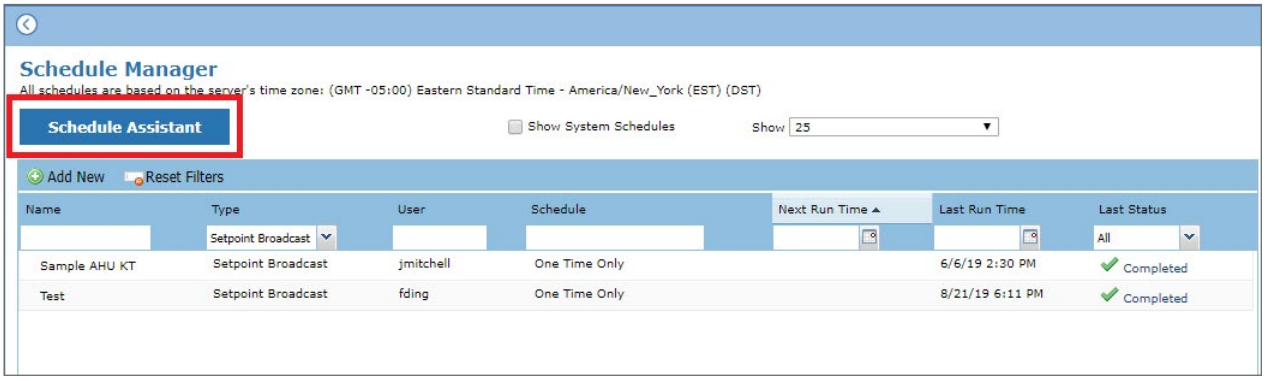


Changing Template and Target Point Group

Choose **Change Template** and **Target Point Group** and Click **Go** (Run Now) or **Apply** (Run on Schedule).

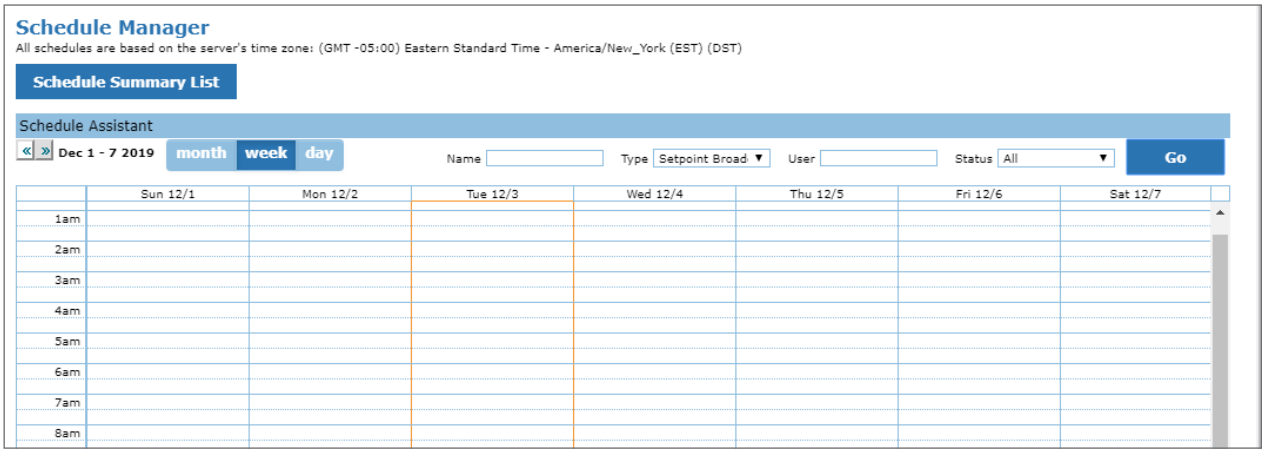
5.5 Review Setpoint Broadcast Schedule

You can review your Setpoint Broadcast Schedule with the **Schedule Assistant**. Select **Setpoint** > **Setpoint Broadcast** > **Configure Setpoint Broadcast**:



Schedule Assistant

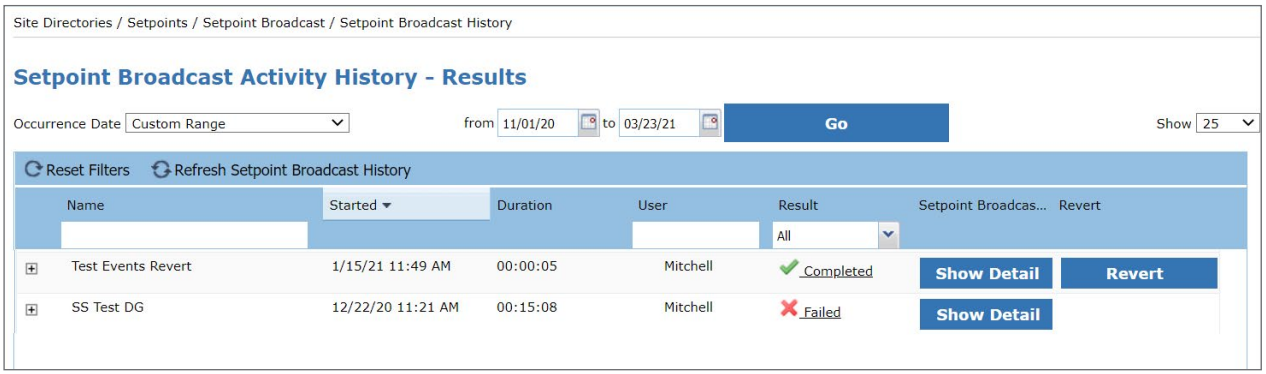
You will see a calendar-based schedule for clarification:



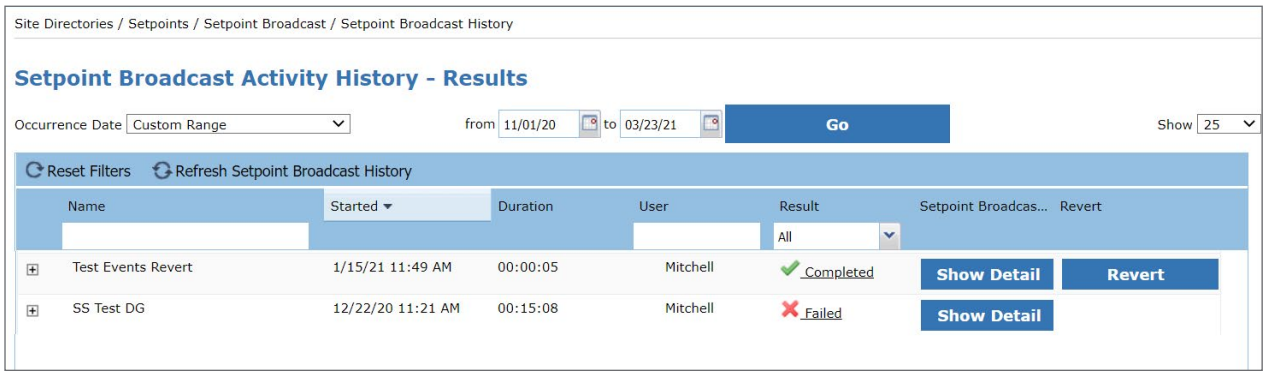
Schedule Summary

5.6 Review Setpoint Broadcast History

Select **Setpoints** > **Setpoint Broadcast** > **Setpoint Broadcast History** from the top menu to view the Setpoint Broadcast activity history result.



Click the **Show Detail** button to see the points detail which has been broadcasted.



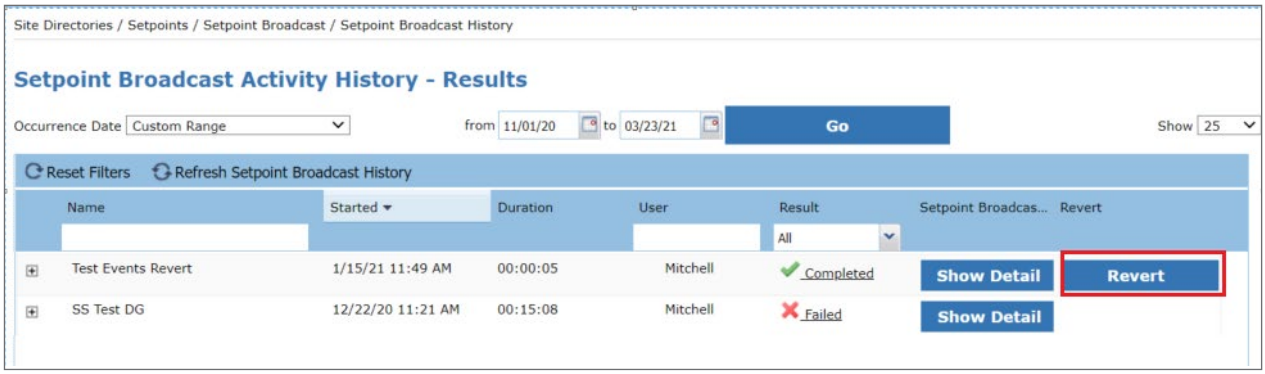
Changed From: The original value of the point

Changed To: The target value of the point.

Test Send Only: If theTest Send is **Yes**, that means the activity is executed to connect the device and retrieve any information needed to test for valid points, but the value will not actually change.

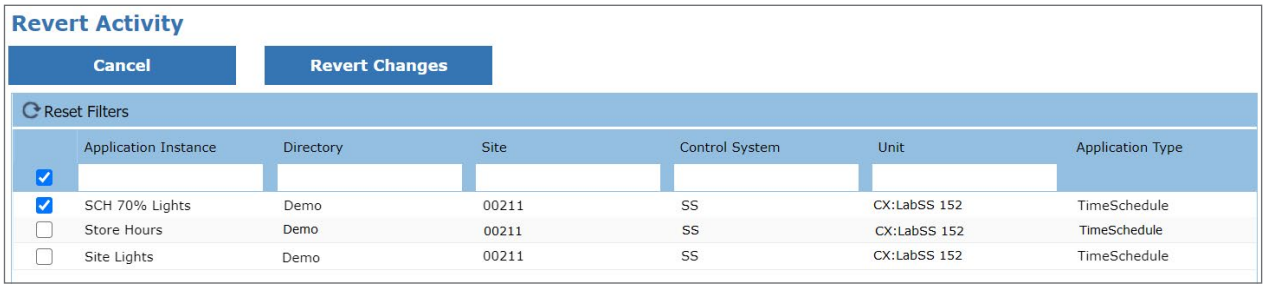
5.7 Revert Setpoint Broadcast

If the user wants to revert the points value which has been broadcasted, click the **Revert** button of the activity.

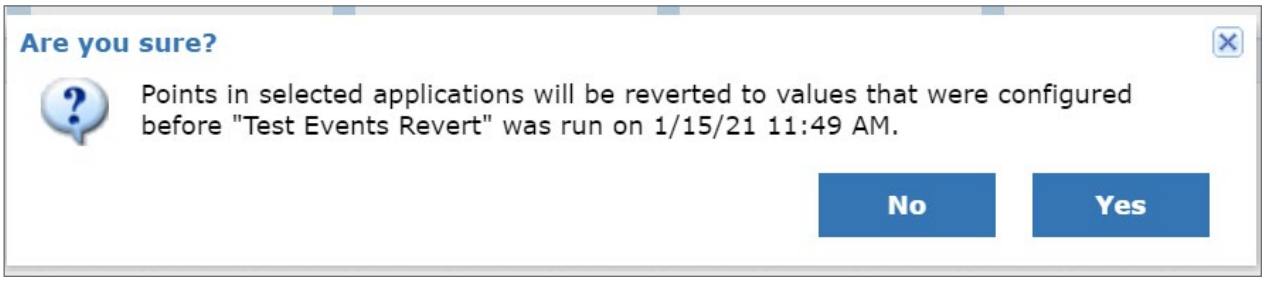


The **Revert** button will only show when broadcast activity is completed or partially completed.

After clicking the **Revert** button, it will jump to **Revert Activity** page.

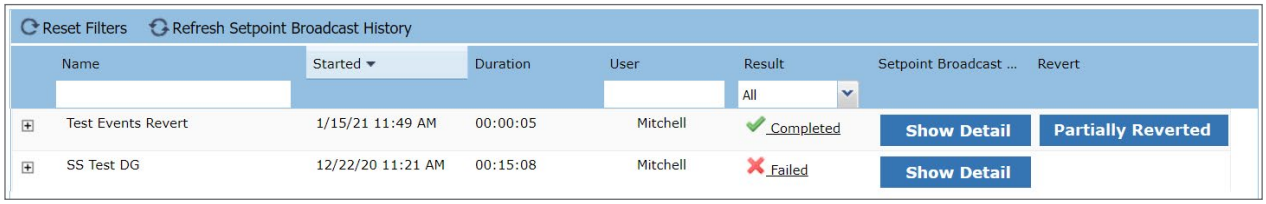


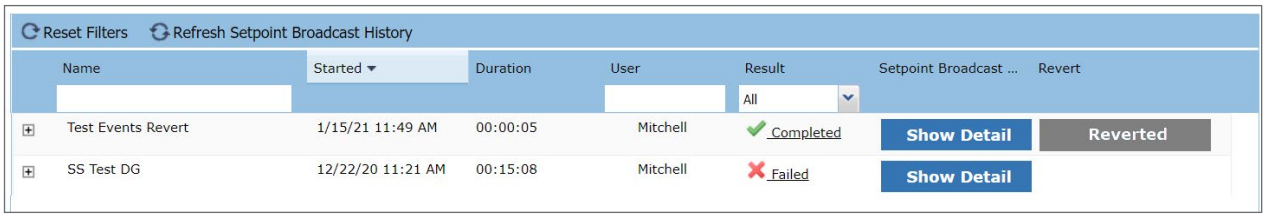
You can check the check-box in front of each item (Revert activity is based on application instance level, you should revert all the broadcasted points value of selected application instance. It will not able to select one point to revert), then click **Revert Changes** button, a confirmation message will appear. Click **Yes** to continue the revert.



Once the revert is completed, the reverted instance will be disappeared from Revert Activity table.

The **Revert** button in the **Setpoint Broadcast Activity** page will show as **Partially Reverted** or **Reverted after reverting**.





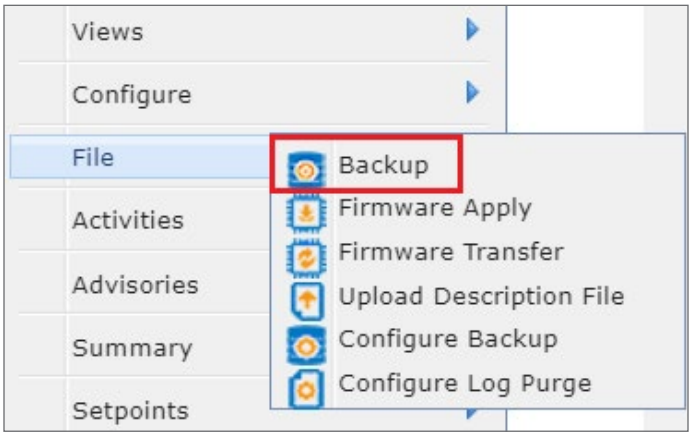
Partially Reverted: It indicates that you just selected a parts of the instances to revert, or the revert activity is partially completed. You can expend "+" of activity to view the detail.

Reverted: Indicate all the points of the broadcasted instances have been reverted.

Note: User access of Site Supervisor and E3 cannot be reverted.

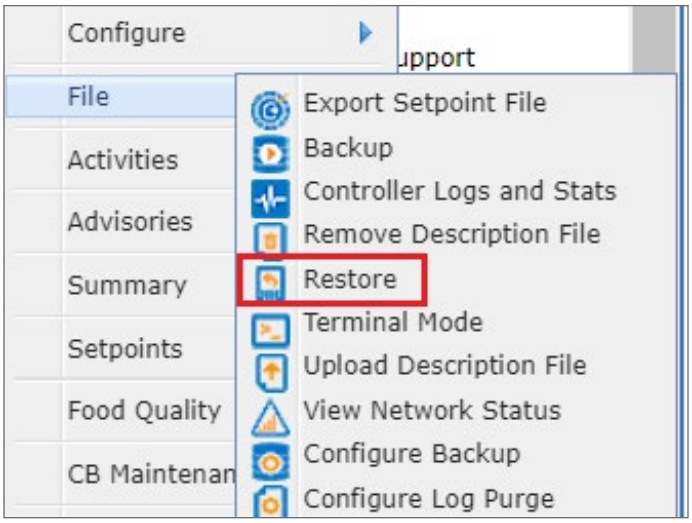
6 Backup & Restore Controllers

Backup can save setpoint information from a controller to the Connect+ server and the activity can be completed at a directory, site, control system, or unit level.



Backup Controllers

After backup, **Restore** can pull the backed-up setpoints from the database and restores the data back into the controller and is then started from the unit level.



Restore Controllers

You can configure a backup daily schedule to back up the setpoint file, and if your controller encounters any issues, you can restore the backed-up setpoints back to the controller.

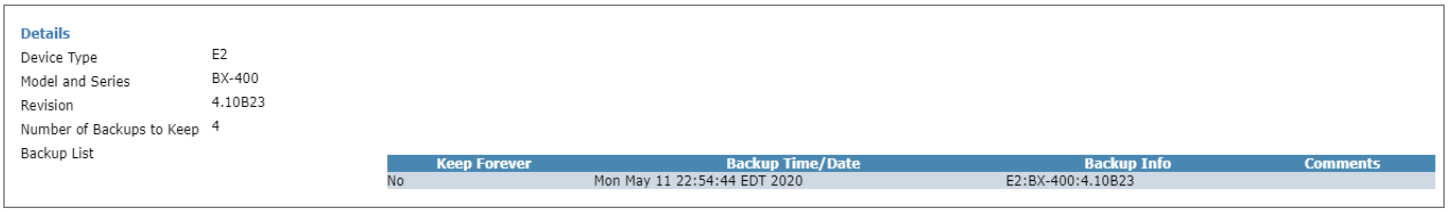
Additionally, some stores may have similar distribution and management. In this case you can configure and back up setpoints on one controller and restore to another.

6.1 Backup

You can right-click the menu and select **File** > **Backup** on directory, site, control system, or unit level to execute activities.

When you execute the backup activity on the directory or site level, the Activity Startup page will display, and you can configure the activity to **Run Now** or **Run On Schedule**. A unit is needed for backup activity.

After a backup has been completed successfully, you can view backup records on unit properties that can be accessed from the right-click menu **Configure** > **Unit Properties** of the unit level. The total items displayed in the unit property is based on the configuration in **Configure Backup**.

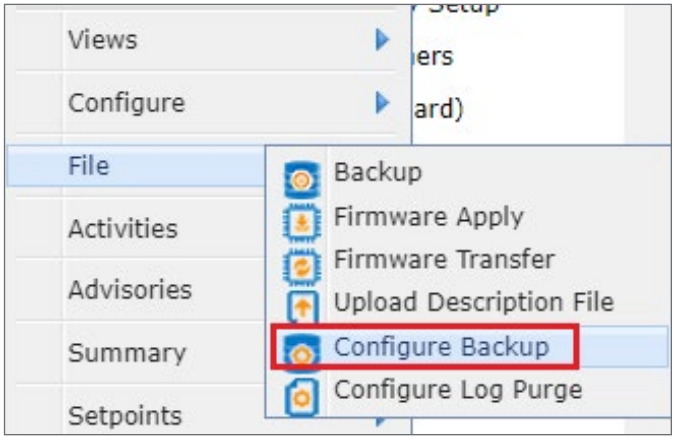


Backup on Directory

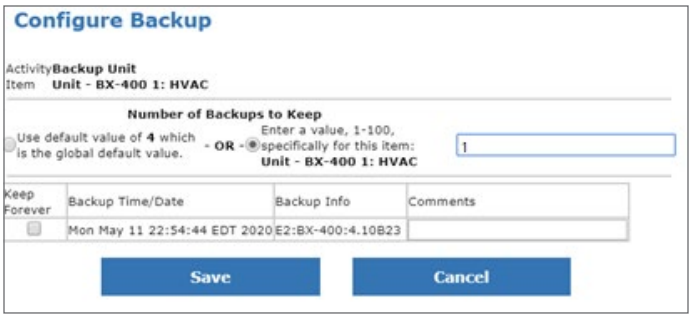
Configure Backup

Connect+ will reserve the latest four backup records by default. You can configure how many records you want to reserve from the right-click menu **File** > **Configure Backup**.

You can use the default value or choose **Enter a value, 1-100, specifically for this item** and specify a backup kept number.



Configure Backup

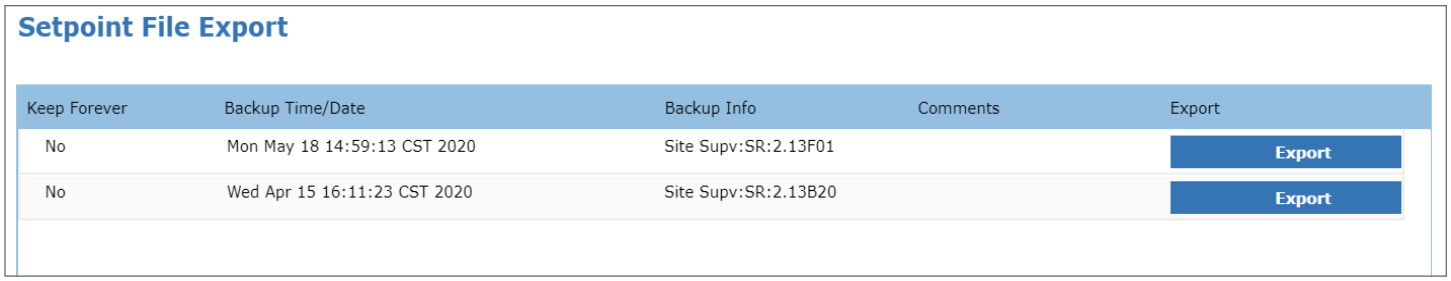


Number of Backups to Keep

Kept backup items will be listed in the table, which you can check for the items that you wish to keep forever by clicking the **Keep Forever** check-box. Additional **comments** can be added for each backup record.

Export Setpoint File:

You can also view and export backup records in the Export Setpoint File page. Select **File** > **Export Setpoint File** from the right-click menu of unit level.

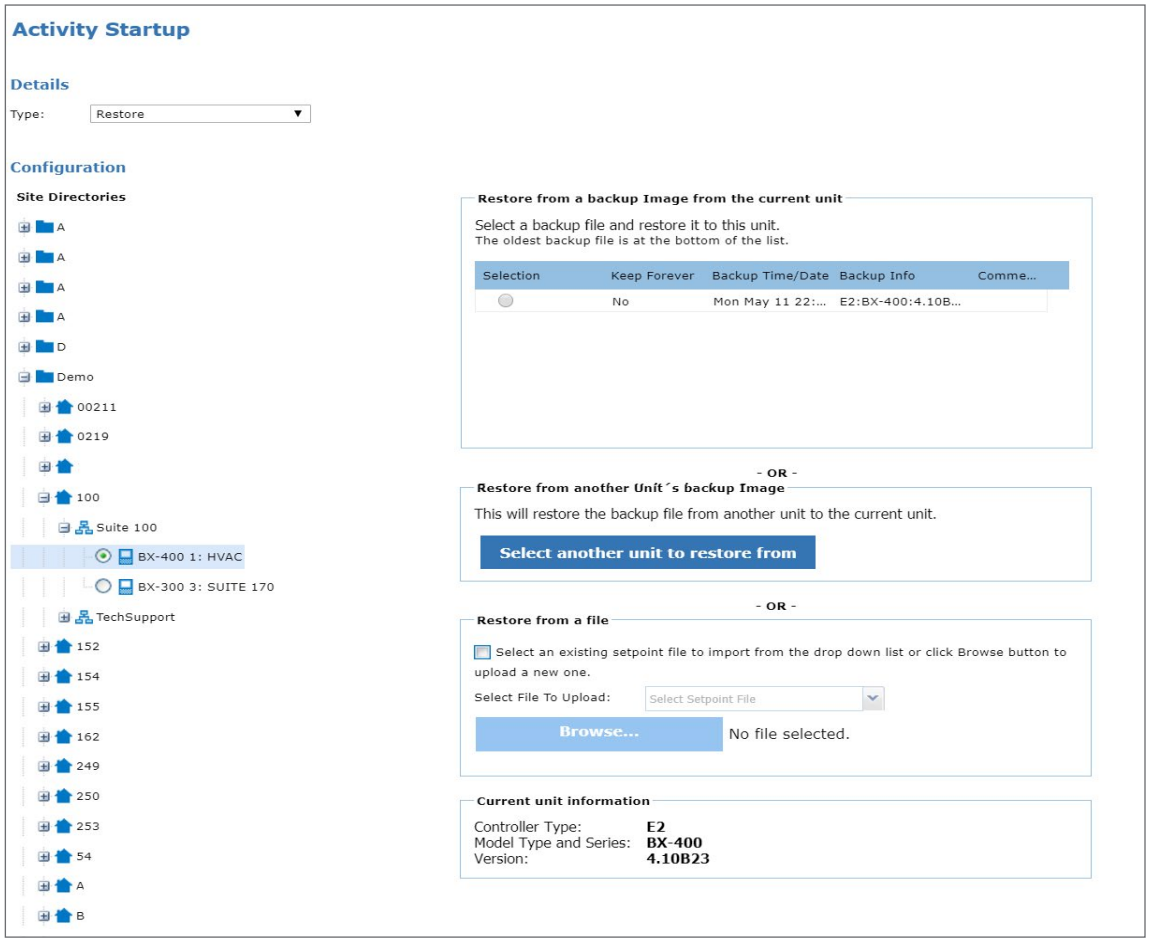


Setpoint File Export

Click the **Export** button for each backup record to download. Each protocol will have a different setpoint file extension. Setpoint file for E2 is .e2b. Site Supervisor and E3 is .adf and XWEB is .backup.xweb.

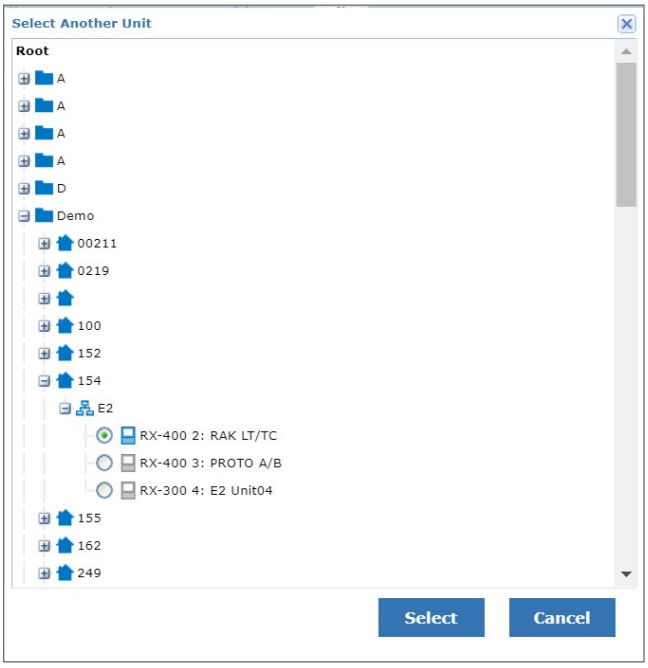
6.2 Restore

To restore a unit, click right-click the menu **File** > **Restore** on the unit level and choose the configuration of the Restore activity:

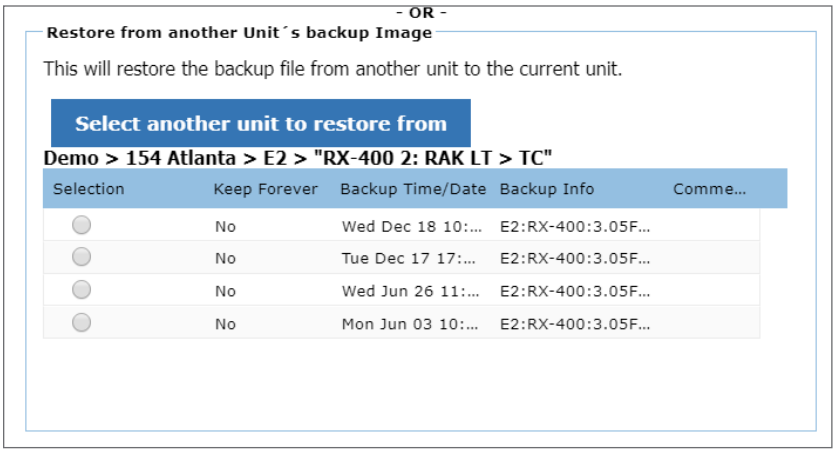


Activity Startup

- **Restore from a backup Image from the current unit -** Restores the current unit using the backup file chosen from the list of backed-up setpoints. Click the radio button of the backup that you wish to restore to the unit and click **Go** to Restore.
- **Restore from another Unit's backup Image** - Restores the backup file from another controller to the current unit. To restore, click the **Select another unit to restore from** button. A **Select Another Unit** pop-up window opens and displays the navigation tree. Choose the unit from where the current unit will restore.. Expand the navigation tree down to the unit level, select the radio button of the unit, and then click Select. After configuring, backup records for the original unit will be displayed and you can choose a desired setpoint file to restore.



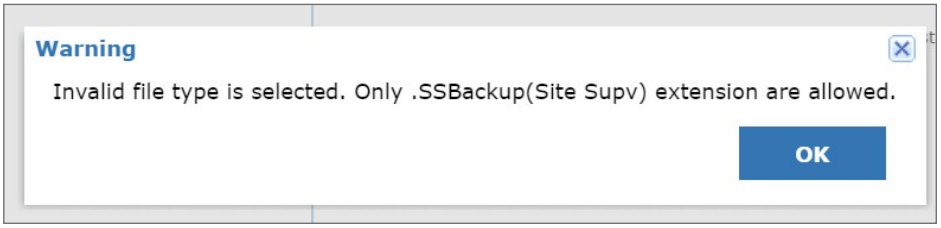
Selecting Another Unit



Selecting Another Unit to Restore From

- **Restore from a file -** Restores the current unit using a setpoint file data (.E2b/.SSBackup/.backup.xweb). Click the radio button in this panel and then select the setpoint file to load from the **Select File To Upload** drop-down list.

  If you want to restore from a local setpoint file, click the **Browse** button, locate the setpoint file on your computer, and click **Open**. Note that only setpoint files with matched protocol types can be uploaded. For example, if you want to restore setpoint for Site Supervisor and E3, you should upload SSBackup file; otherwise, an error message displays.



Warning

  If Connect+ finds a duplicate file name in the database, a message window will display and ask if you want to overwrite the old file. Click **Overwrite** to import the setpoint file and overwrite the old file or **Cancel** to cancel file import. After configuring Restore, click **Go**.

An activity status page opens with a progress bar that shows the status of the Restore activity and the percentage of completion. After restoring is completed, the controller will be restarted to apply the backup data.

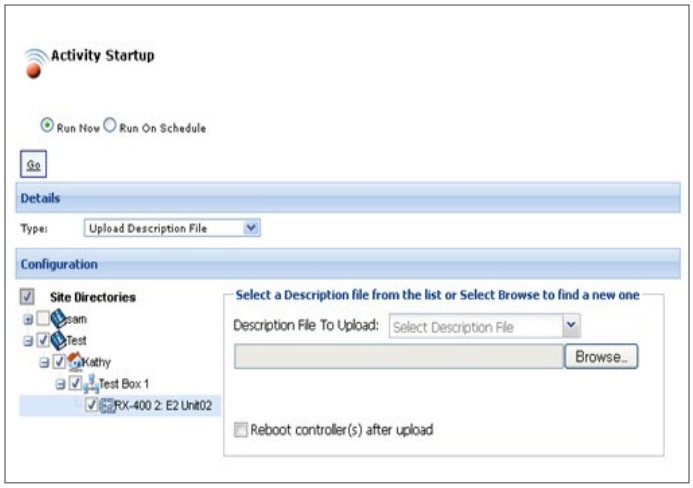
7 Controller Description Files

7.1 Upload Description Files

A description file is a template file used to add an application type or new device into the controller. Description files can be uploaded from the directory, site, control system, and unit levels from the navigation tree **File** > **Upload Description Files** or accessed from the **Admin Tools** > **Schedule Manager**.

If you want to run the description file one-time only, choose **Run Now** and the **Activity Startup** page will open where you can click the **Browse** button to locate the description file you wish to upload to the controller. If the description file is to be uploaded at a later date, select **Run On Schedule** and configure it from the **Schedule Manager** page. Note that this Activity can be scheduled, but not recurring.

Running the Upload Description File activity now from the **Activity Startup** page:



Upload Description File

Connect+ supports three kinds of description files for different controller type. You can upload .dsc file for E2, .adf file for Site Supervisor and E3 and .zip file for XWEB.

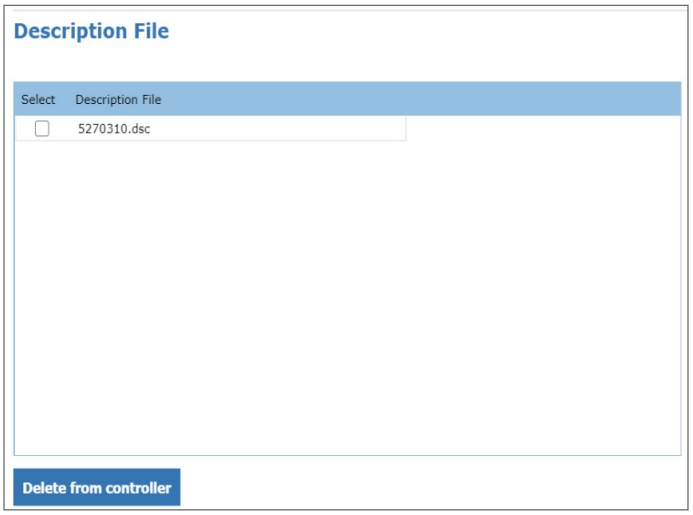
Click the **Browse** button to locate the description file. When **Browse** is clicked, you can select a single description file to upload from a **File Open** popup and click **Open** to upload the selected file to the Connect+ server. If the file name with incorrect extension is uploaded, a pop-up error window will be displayed indicating that there was an invalid file type selected and that only file types of .dsc, .adf and .zip are allowed. Once the file is selected, the file will be uploaded to the Connect+ server and you will be redirected to the **Schedule Manager** page previously viewed and the file will be added and selected to the list of available files in the **Description File To Upload** drop-down list.

If the file to be sent to controller already exists in the database, it will appear in the drop-down list. Select the file that will be sent to the controller from the **Description File To Upload** list. The selected description file should match the controller type or the activity will fail.

The description file will be applied after the controller is rebooted. You can Enable the **Reboot controller(s) after upload** check-box to automatically restart the selected controllers after the upload and allow them to recognize the description file that was uploaded. Afterward, you can add the application or device for the uploaded description file.

7.2 Remove Description File

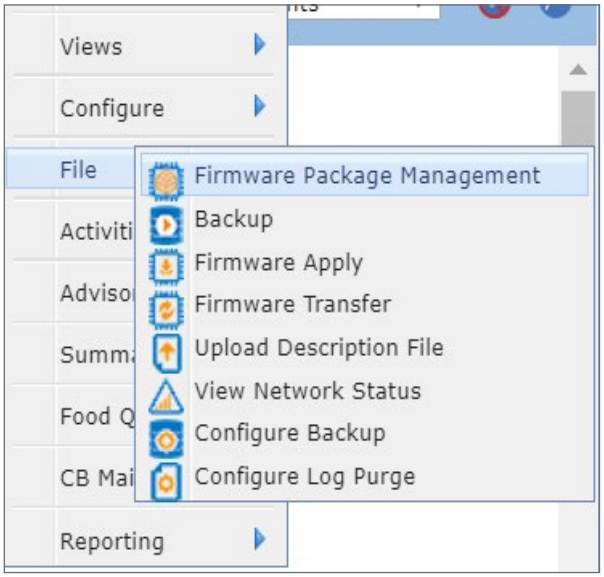
You can remove description file from the unit level. Right-click on unit, select **Files** > **Remove Description File**. The uploaded description file will be listed in the table. You can choose the file that you wish to remove by clicking the check-box in front of the file name, and click the **Delete from controller** button. The description file will be removed from the controller.



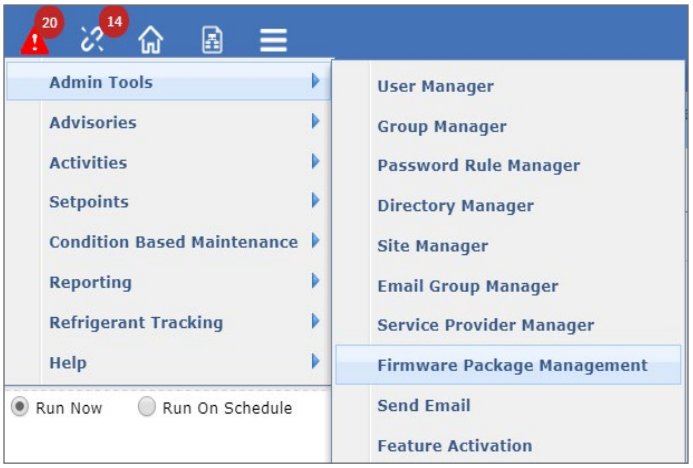
Remove Description File.

8 Firmware Management

Before updating the firmware, firmware and language packages on the Connect+ server can be uploaded and/or deleted from **File** > **Firmware Package Management** at the Control System level on the navigation tree or **Admin Tools** > **Firmware Package Management**.

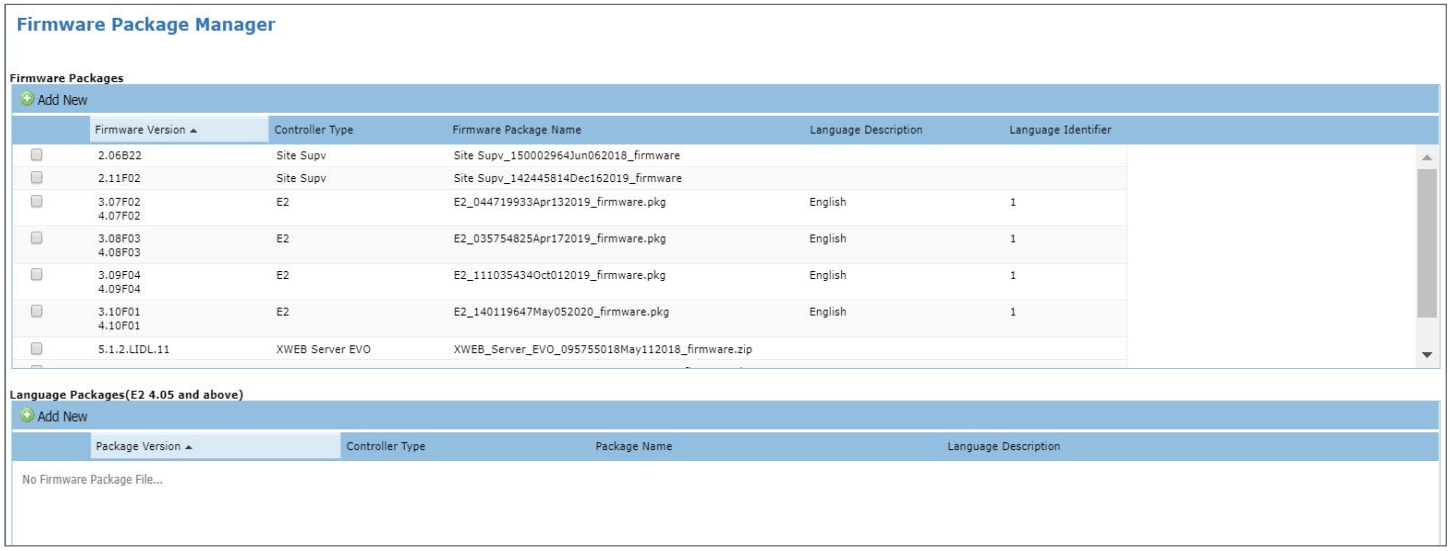


Firmware Package Management Menu



Firmware Package Management

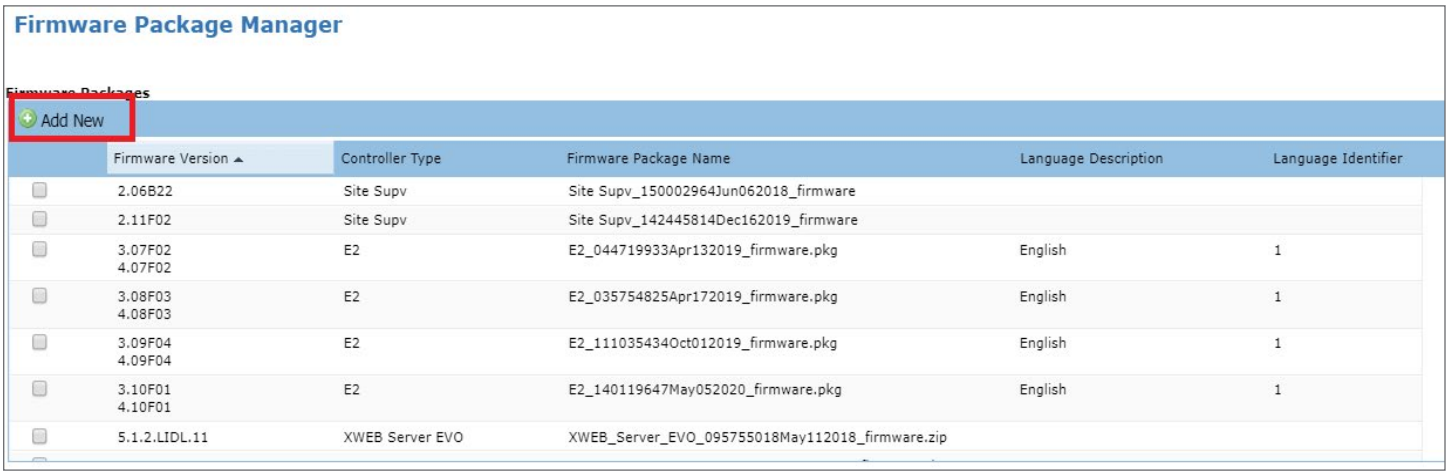
The Firmware Package Manager page comprises the **Firmware Packages** and **Language Packages** tables where you can upload and/or delete firmware and language packages on the Connect+ server. You can update Firmware Package for E2, Site Supervisor and E3 and XWEB. Note that the Language Package is only available for E2 controllers with firmware versions 4.05 and above.



Firmware Package Manager

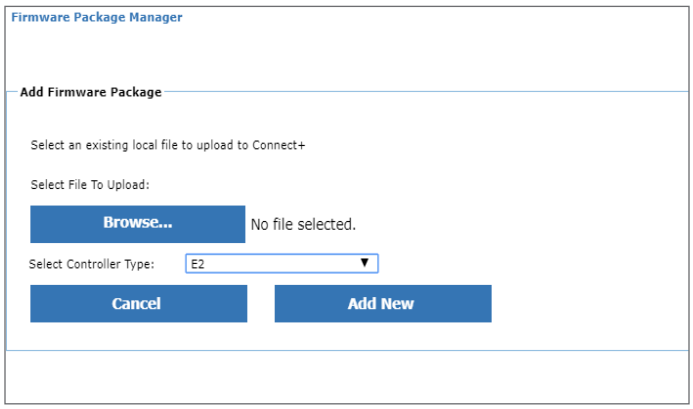
Add Firmware

Click **Add New** to upload a firmware package to Connect+.



Adding Firmware

You can select E2, Site Supervisor and E3, or XWEB from **Select Controller Type** drop-down. Choose a firmware file to upload by clicking the **Browse** button on the **Add Firmware Package** window and select the desired file from the **File Upload** window.



Select Controller Type

You should upload a package file with the correct extension filename. Note that the extension of E2 package is .pkg., XWEB package extension is .zip., and the Site Supervisor and E3 package file does not have an extension, For example, SS_2.14A10_Firmware_Update.

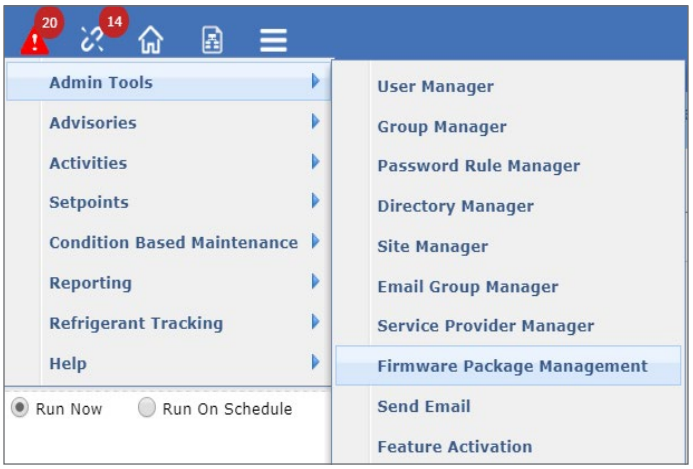
After upload, you can see the uploaded package with irmware version and controller type listed in the table.

If the name extension is incorrect, a pop-up window will be displayed with the error message.

Delete Firmware

The delete firmware package function allows firmware package files to be removed from the Connect+ file system and database.

To remove firmware packages from the server, click the check-box(es) of the package(s) you wish to delete and click the **Delete** button on the **Firmware Packages** table.

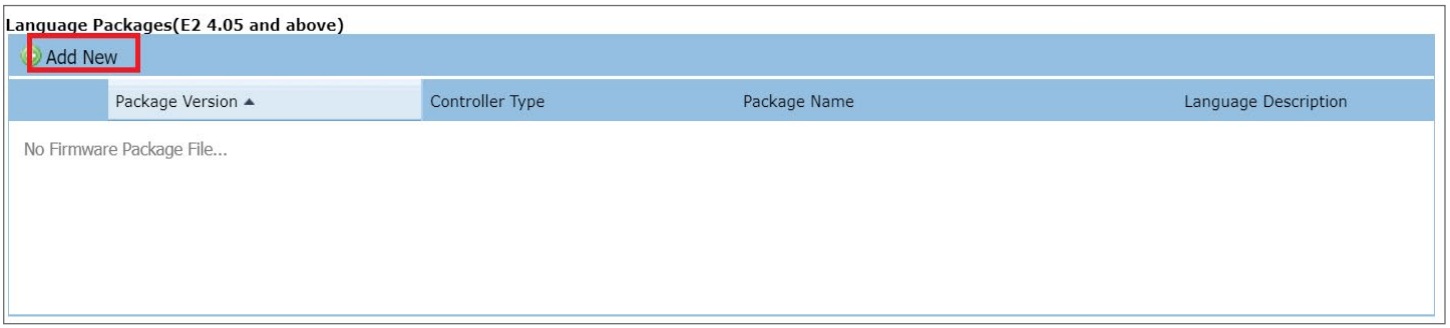


Firmware Package Management

After deleting, the package will be removed from table.

Add Language File:

You can click **Add New** to upload a language package in Language Package table for E2.



Adding Language File

After upload, you can see package with language is displayed in the table.

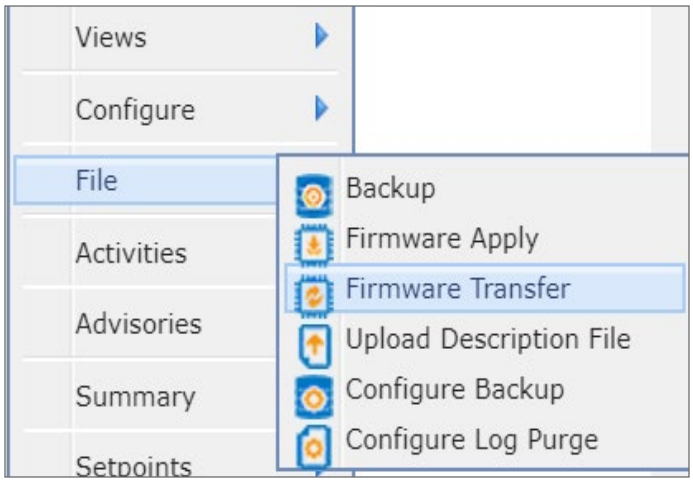
Language Description

Delete Language File:

To remove firmware packages from the server, click the check-box(es) of the language package(s) you wish to delete and click the **Delete** button on the **Firmware Packages** table.

9 Firmware Transfer

The Firmware Transfer process delivers the firmware files to the units in a control system and/or up-dates language package files of units. A Firmware Transfer can be started from a Directory, Site, or a Control System in the navigation tree **File** > **Firmware Transfer** or Firmware Transfer can be scheduled.



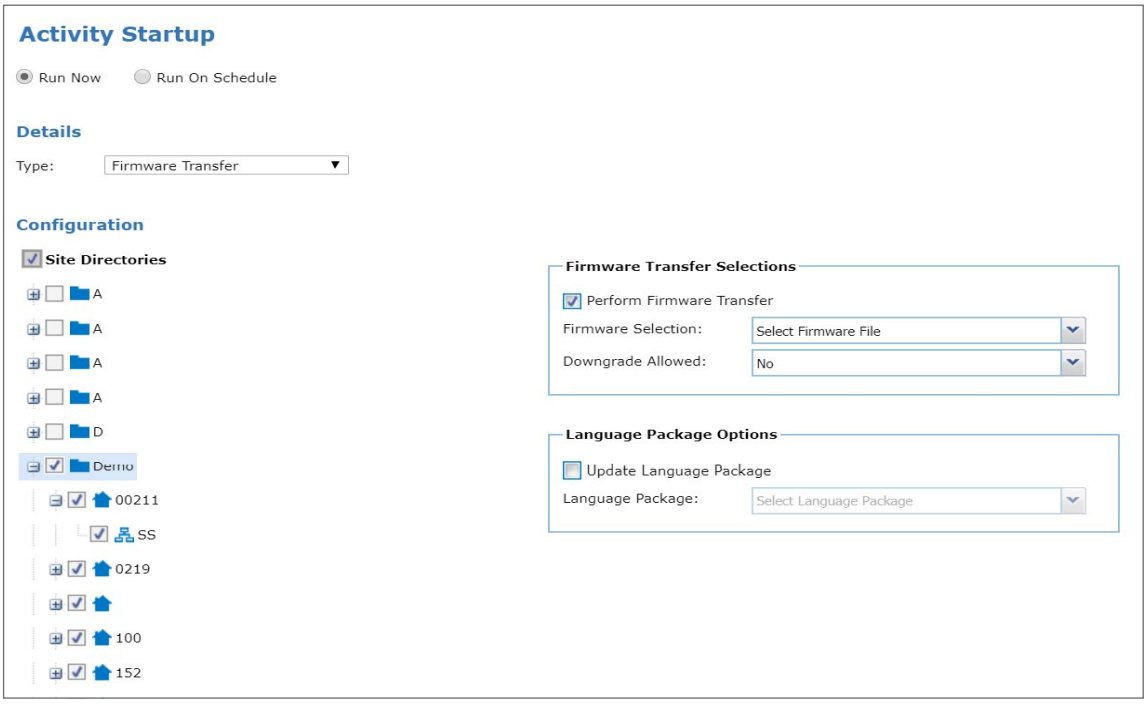
Firmware Transfer

Firmware Transfers may be scheduled, but will be on a non-recurring, one-time schedule only, so they will need to be configured in Schedule Manager each time when running on a schedule.

At the start of the Firmware Transfer, a Control System Inventory will be performed on the Control System(s) selected for Firmware Transfer.

If you have grouped controllers, the firmware will be transferred to the gateway unit, and then the gateway unit will be instructed to transfer to any other units that are members of the control system, one at a time.

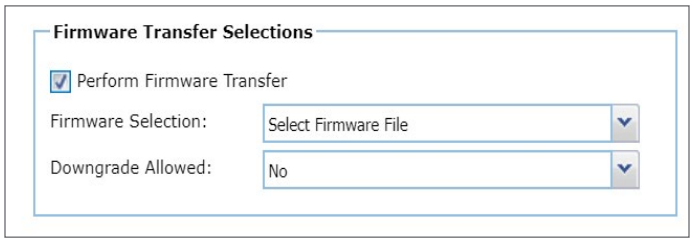
Firmware transfer will not apply for XWEB. XWEB only needs to execute Firmware Apply to update the firmware version.



Activity Startup

Firmware Transfer Selections:

Perform Firmware Transfer is checked by default. You can select the appropriate firmware package under the **Firmware Selection** drop-down list; this package is uploaded in **Firmware Package Management** as covered in the previous section.

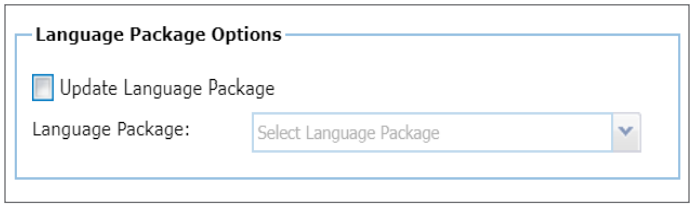


Firmware Transfer Selection

If the firmware selection is a downgrade for the selected control system, and it is acceptable for the downgrade to occur, select **Yes** from the **Downgrade Allowed** drop-down list. If **No** is selected and the firmware transfer is a downgrade for the control system, the firmware transfer will not occur. As a precaution, a warning will appear in the Activity History page when a unit is receiving a package that will be a downgrade to its firmware.

Language Package Options:

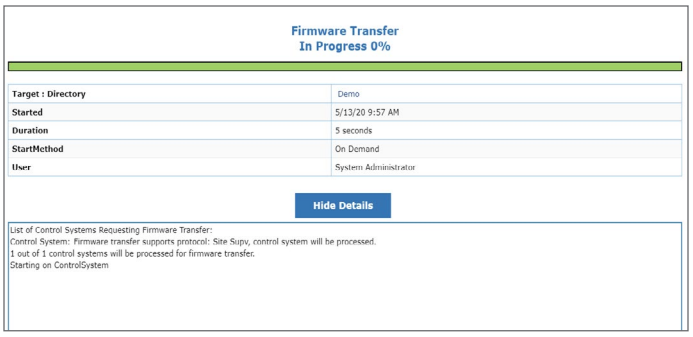
If you wish to run a language file update simultaneously with a firmware transfer, enable the **Update Language Package** check-box under **Language Package Options**, and then select the language file to update from the Language Package drop-down list (all language package file names on the server will display in this list):



Language Package Options

If you wish to perform a language package update only, disable the Perform Firmware Transfer check-box.

After the configuration is complete, click **Go** to execute the activity. The Activity Status page will open and show the progress of the activity:



Firmware Transfer Page

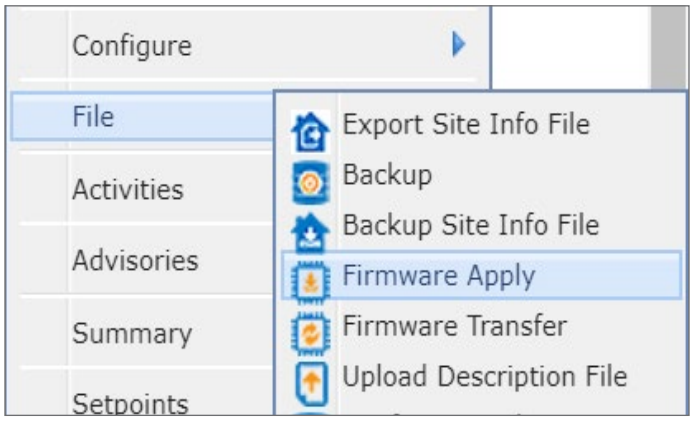
The detailed progress of the Firmware Transfer can be monitored from the Activity History page **Top Menu** > **Activities** > **Activity History** > **My Activity History**.

Language package files are transferred from control system to control system. During the update process, Connect+ will check the firmware version of each unit in the target control system if supported and compatible with the language package version. If the unit is supported and compatible, the update will proceed for that unit. Otherwise, the update will be skipped on the unsupported unit and the next unit will be checked for version compatibility. The update process will continue to run until all units in all target control systems have been checked and/or updated.

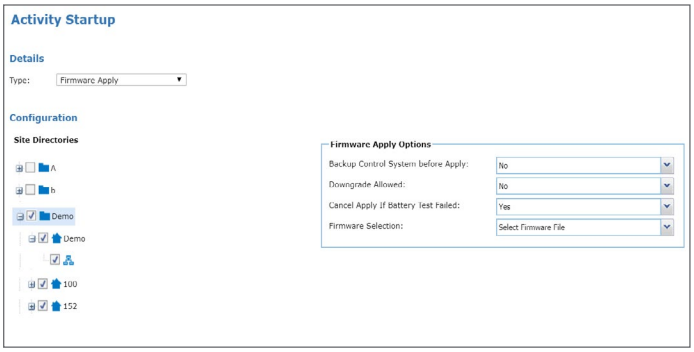
Controllers must be rebooted, and the language must be selected for the update to take effect.

10 Firmware Apply

A **Firmware Apply** can be started from a Directory, Site, or a Control System in the navigation tree **File > Firmware Transfer**.



Firmware Apply



Activity Startup

The **Backup Control System before Apply** drop-down will perform a backup of units in the Control System before the firmware is applied if the option is set to **Yes**. The default value will be **No**.

If **Downgrade Allowed** is set to **Yes**, a warning message will be displayed alerting that the unit(s) existing setpoints will be cleaned out as a result of downgrading the firmware. Click **Proceed** to proceed with the downgrade or **Cancel** to stop.

Warning Prompt

Note that the **Cancel Apply If Battery Test Failed** option is only for E2. If it is set to **Yes**, a battery test will be performed on all units prior to applying the firmware. If any unit fails the battery test, the Firmware Apply will automatically be canceled, and the Activity Details report will be updated to show that the apply process was canceled as a result of the battery test failure of the applicable units.

When you execute Firmware Apply for Site Supervisor and E3, you will see **Cancel Apply If Battery Test Failed** option is set to **No** and is non-editable.

Select a firmware version from the **Firmware Selection** drop-down.

When you are ready to initiate the Firmware Apply activity, click **Go**. The activity will begin.

The Firmware Apply activity will connect to the targeted Control System and validate the firmware

file on each controller of the control system. If any firmware file fails validation, the firmware apply for

the target control system will fail and report the failure in the activity history.

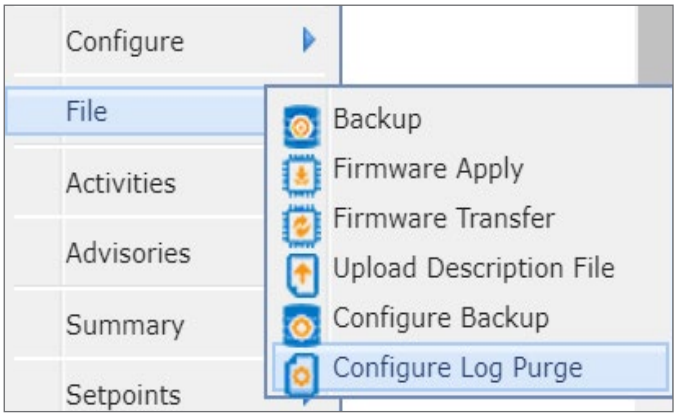
11 Configure Data Retention

When your system runs for a very long time, there might be a great deal of data in your database that can cause your system to run slowly. At this time, you can purge the old and unused data from the database to reduce the database burden.

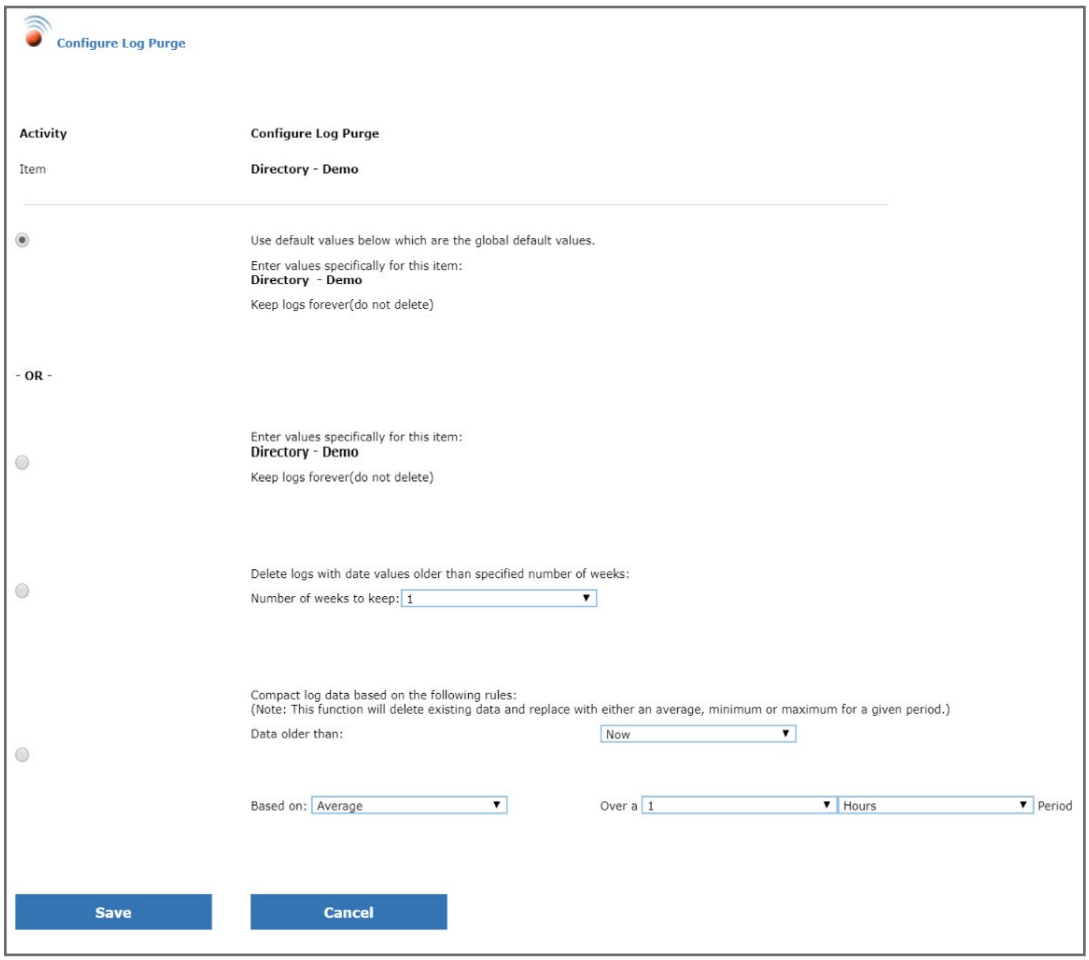
11.1 Configure Log Purge

Controller point log data is stored in the database but can be deleted with the Configure Log Purge feature. The Log Purge function can help you calculate the old log data based on your configuration or delete the old log data.

The Configure Log Purge page allows you to set parameters for the Log Purge activity. Right-click from any level of the navigation tree, select **File** > **Configure Log Purge**.



Configure Log Purge

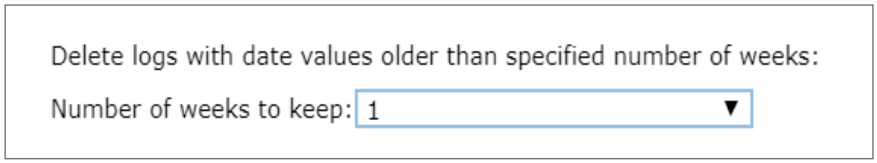


Log Purge Activity

The default selection is **Keep logs forever (do not delete)**. For this selection, log data will be kept permanently in the database.

You can delete or compact logs by selecting the radio button:

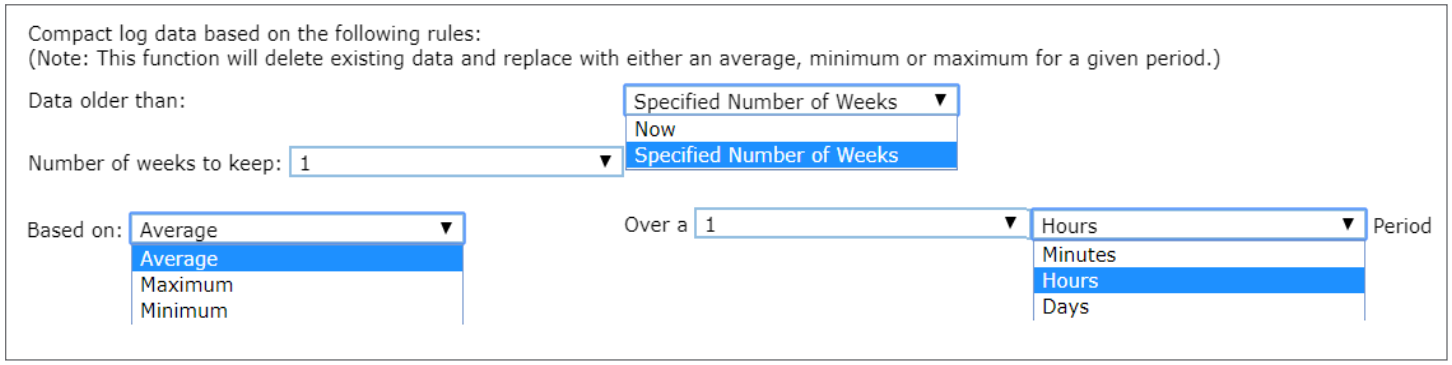
- Delete Logs with date values older than specified number of weeks:



Deleting Logs

Select N**umber of weeks to keep** from the drop-down list, 1 to 156 can be selected to keep. After your selection, the system will keep the latest selection week's data and the data older than the configuration will be deleted from database.

- Compact log data based on the following rules:



Compact Log Data

- **Data older than**: If Now is selected, logs older than the current date will be compacted based on the rules that you specify thereafter. If Specified **Number of Weeks** is chosen, select a number from the **Number of weeks keep** drop-down. The data older than the specified number of weeks will be compacted.
- **Number of weeks keep**: Select a number (1-156) from the list. This option will hide when the **Data older than** rule is set to Now.
- **Based on**: (the method of compaction)

  AVERAGE: Log values for the established time period will be added and the sum of all values will be divided by the number of logs

  MAXIMUM: Over the set period of time, the log with the highest (max) value will be stored.

  MINIMUM: Over the set period of time, the log with the lowest (min) value will be stored.

  Example: Logs recorded were 10, 20, 10, and 10. Compaction by AVERAGE will yield a log value of 12.5. Compaction by MAXIMUM will yield a log value of 20 and a value of 10 if by MINIMUM.

- **Over a/Period**: Logs will be compacted depending on these settings. It can be set as Minutes, Hours or Days. Specify the amount of time for compression of the **Average**, **Maximum**, or **Minimum** values. Select a unit of time from the Period drop-down and choose a number from the **Over a** drop-down.

Click **Save** to save the settings and exit or **Cancel** to exit the page without saving.

Example of Compacting Log Data

Data Source: Consider the following log data for compaction.

Date and Time Recorded	Value
April 1, 2010 12:00pm	10
April 1, 2010 12:15pm	20
April 1, 2010 12:30pm	10
April 1, 2010 12:45pm	20
April 1, 2010 01:00pm	40
April 1, 2010 01:15pm	5
April 1, 2010 01:30pm	15
April 1, 2010 01:45pm	35
April 1, 2010 02:00pm	10

Example 1: Assuming that compaction is to be carried out based on the Average and the established time period is 1 hour, the following log values will be stored in the database:

Date and Time	Reduced Value
April 1, 2010 12:00pm	15
April 1, 2010 01:00pm	23.75

Calculate steps:

1. Log values that were recorded for the first hour will be grouped together and compressed by Average. That is: (10 + 20 + 10 + 20) / 4 = 15.
2. The equivalent value, which is 15, will be stored in the database; old values (10, 20, 10, and 20) will be purged.
3. For the next hour, log values will be compressed, (40 + 5 + 15 + 35) / 4 = 23.75.
4. The compressed value (23.75) will be stored and old values (40, 5, 15, and 35) will be purged.

Example 2: If data compaction is to be carried out based on the Minimum and the established time period is 45 minutes, the source data will be compacted as below result:

Date and Time	Reduced Value
April 1, 2010 12:00pm	10
April 1, 2010 12:45pm	5
April 1, 2010 01:30pm	10

Calculate steps:

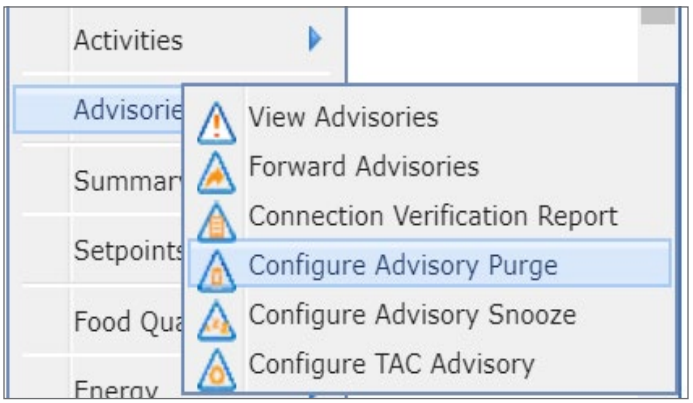
1. Log values that were recorded for the first 45 minutes will be grouped together.
2. The minimum value in the first 45 minutes, that is 10, will be stored in the database; old values (10, 20, 10) will be purged.
3. For the next 45 minutes, log values will be stored as lowest value 5, and old values (20, 40, 5) will be purged.
4. For the last 45 minutes, log values will be stored as lowest value 10, and old values (15, 35, 10) will be purged.

Example 3: Same rules apply for compaction by Maximum, the source data will be compacted as below result:

Date and Time	Reduced Value
April 1, 2010 12:00pm	20
April 1, 2010 12:45pm	40
April 1, 2010 01:30pm	35

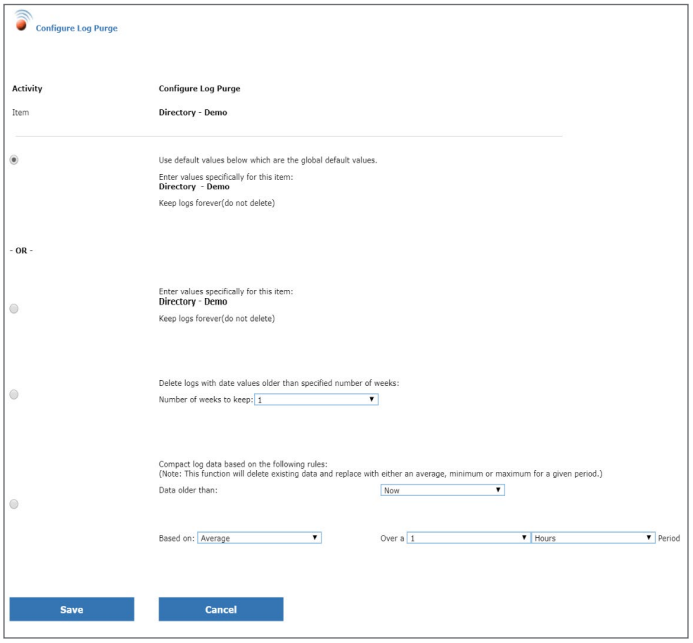
11.2 Configure Advisory Purge

Configure Advisory Purge allows you to set parameters for advisories. Right-click on a navigation tree on directory, site, control system, or unit level and select **Advisories** > **Configure Advisory Purge** to open the page.



Configure Advisory Purge

The default setting of keeping advisories forever (advisories are never deleted) is the first **Activity Item** on this page and can also be set from the second radio button under "OR".



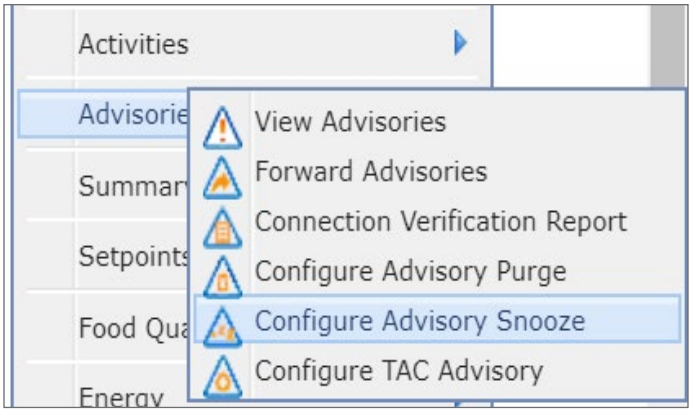
Configure Advisory Purge Page

When selecting the second radio button, you can choose **Specified number of weeks** or **Specified number of months** from **Delete values order than** drop-down list. Once it is selected, **Number of weeks to keep** or **Number of months to keep** field will be displayed. You can enter the number to keep the latest configured weeks or months advisories. Click the **Save** button once the configuration has completed.

The advisory will be purged after the system schedule **AdvisoryPurgeJob** run, and the default schedule will run every 2 hours. You can check the schedule from schedule manager.

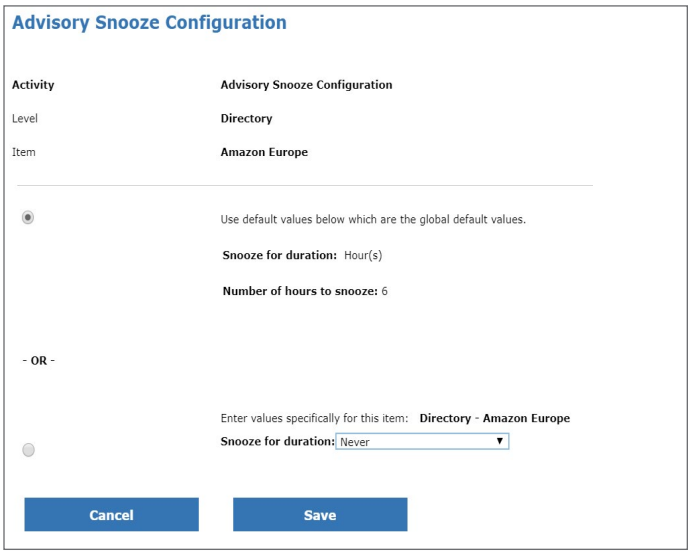
11.3 Configure Advisory Snooze

Advisory Snooze Configuration allows you to set an alarm wait time (a Snooze alarm) to reduce the total amount of recurring advisories in the database. Right-click on a navigation tree of each level and select **Advisories > Configure Advisory Snooze** to open the page.



Configure Advisory Snooze

The default setting of keeping advisories forever (advisories are never deleted) is the first **Activity Item** on this page and can also be set from the second radio button under "OR".



Configure Advisory Snooze Page

Snooze configuration will set the snooze time for a historical advisory.

The default configuration is 6 hours. Set your own configuration from the drop-down list under the "OR" section. You can choose **Never, Minute(s) or Hour(s)** from **Snooze for duration** drop-down list. Once it is set as Minute(s) or Hour(s), **Number of minutes to snooze** or **Number of hours to snooze** field will be display. You can enter the number of minutes or hours in the field depending on which one you select. The default value for hours and minutes is **6**.

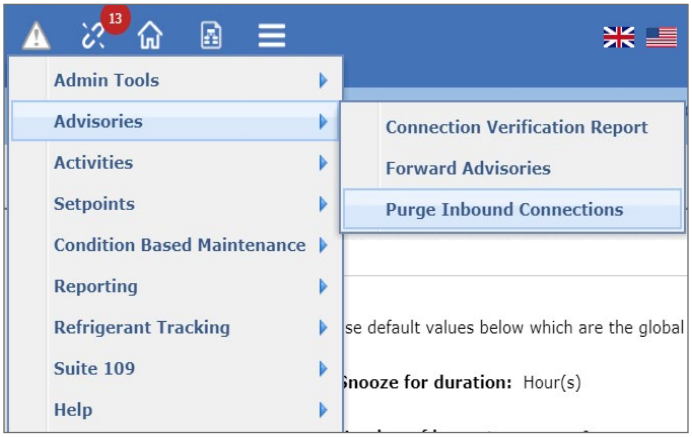
Once sent, a snoozed advisory will not be sent to the monitoring server again until the Snooze has expired and the advisory is still active. The advisory will then be resent to the monitoring server as a new advisory.

Click **Save** to save changes and see the confirmation screen. Click **Cancel** to exit.

11.4 Configure Inbound Connection Purge

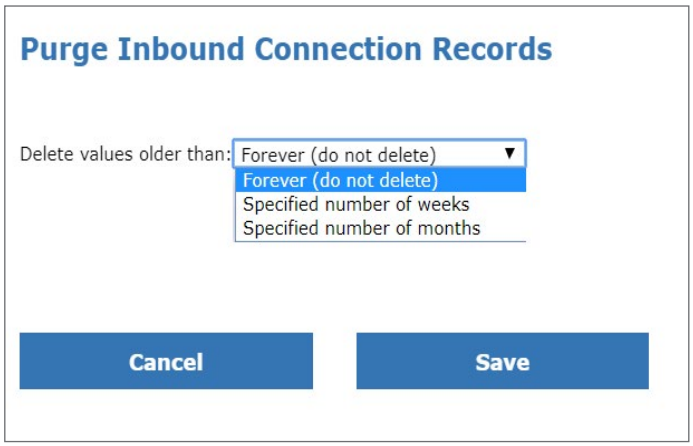
Controllers contact Monitoring once a day to verify the controller connection and record connection information in **Connection Verification Report**.

You can choose to purge the records in Connection Verification Report from **Top Menu** > **Advisories** > **Purge Inbound Connections**.



Purge Inbound Connections

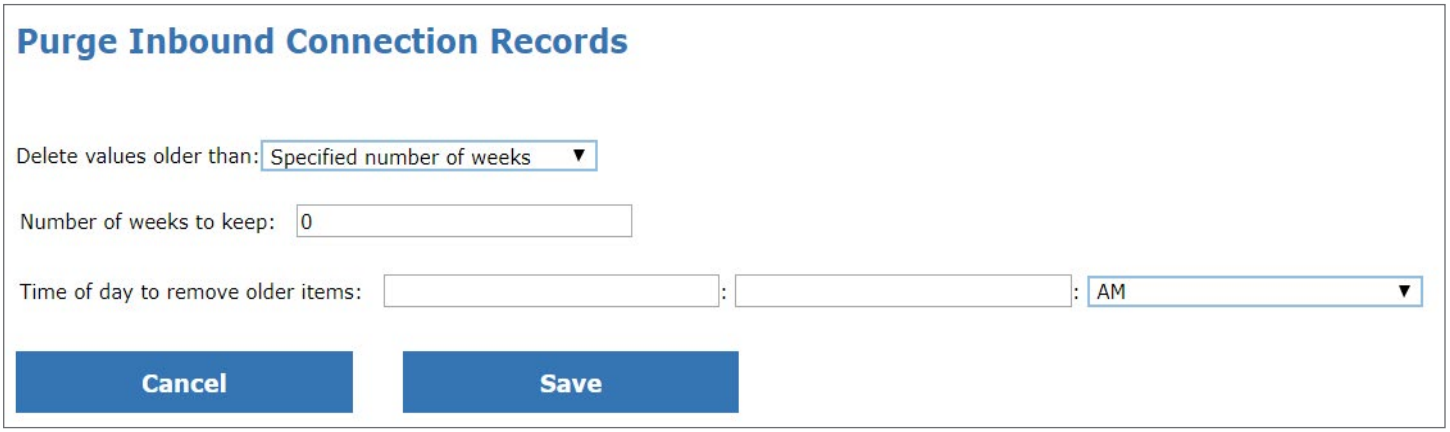
The default setting of connection purge is **Forever (do not delete)**. It can keep all records for this option.



Purge Inbound Connections Records

With the Purge Inbound Connection Records, you can set purge configurations for these inbound connection records. Choose **Specified number of weeks** or **Specified number of months** to keep the latest time period of weeks or months.

If you choose to purge a specific number of connection records, specify either weeks or months from the drop-down list and enter the specific number into the **Number of weeks/months to keep** field. Enter the time of day to remove the older items in the spaces provided and click Save to save changes or **Cancel** to exit the screen.



Purge Inbound Connections Prompt

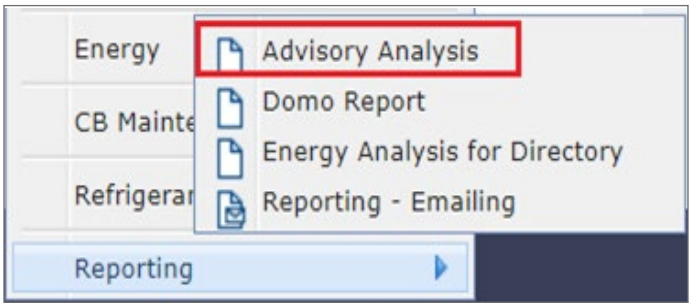
The inbound connection will be purged after the system schedule **InboundAdvisoryQueueToAdvisoryJob** run, and the default schedule will run every 1 minute. You can check the schedule from schedule manager.

12 Advisory Analysis and Energy Analysis Report

Advisory Analysis and **Energy Analysis** reports can provide the intuitive energy consumption and the a complete picture of alarm information about the region and site.
If these reports are not showing for your directory and site, contact your administrator.

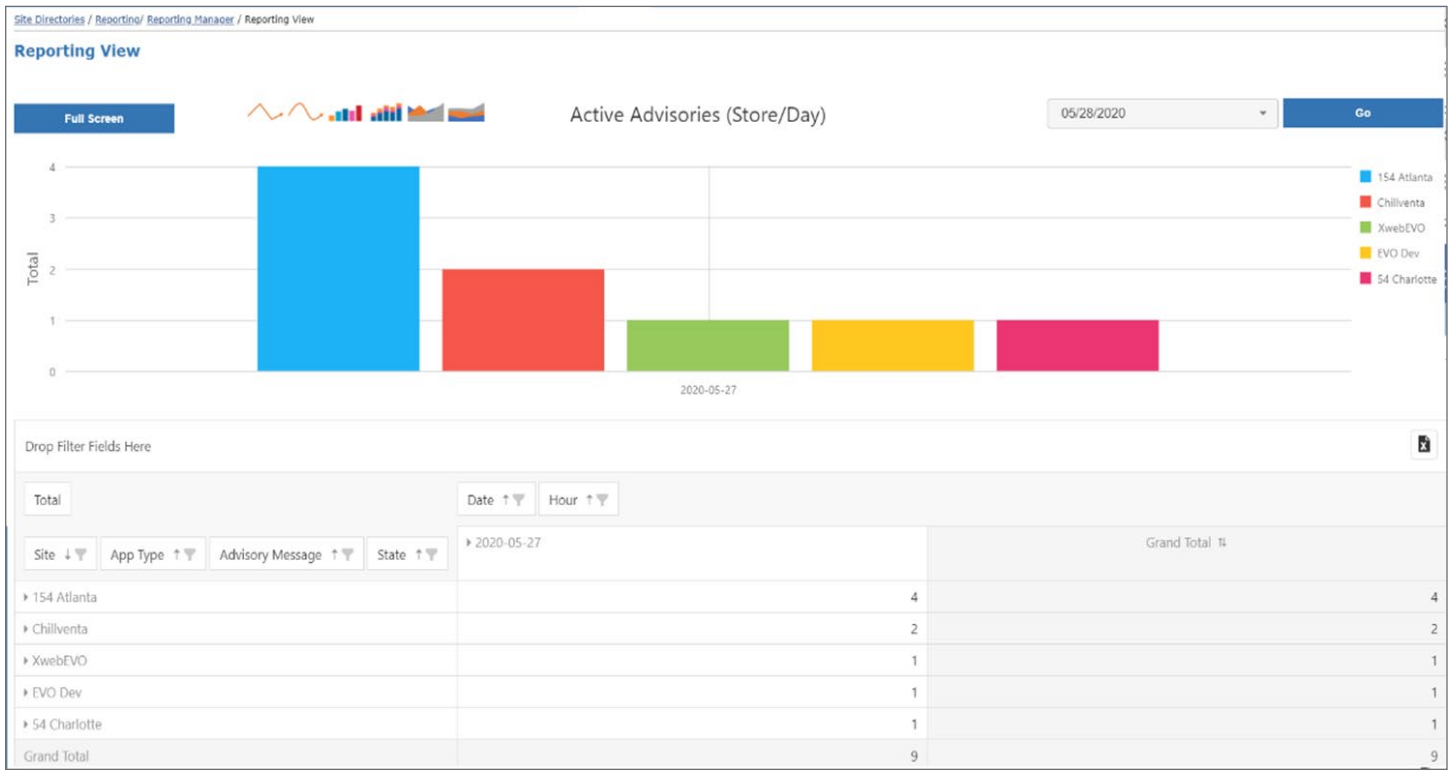
12.1 Advisory Analysis Report

Select **Reporting** > **Advisory Analysis** from right-click menu of the directory.



Advisory Analysis

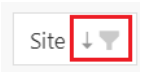
You will see the advisories summarized and displayed in the following dashboard. It will show last 24 hours advisories by default.



Reporting View

You can change the date or date range from the date selection field and the report will be displayed according to the selected date range. Chart and the table will be grouped per site per day.

You can change the graph UI by clicking the graph icons.

And in the table, you could expand the arrow ahead of each item to view next level detail in the table. Filter or sort the column by clicking the icon next to the column name. 

Total				Date			Hour							
Site	App Type	Advisory Message	State	2020-05-25			2020-05-26	2020-05-27	2020-05-28	2020-05-29	2020-05-30	2020-05-31	Grand Total
				12	18	7							
154 Atlanta					1		20						21
	Air Handlers (AHUs)	Application config has changed	Active					1					1
	Circuits (Standard)	Case Temp Hi Limit Exceeded	Active					1					1
		Comb Temp Hi Limit Exceeded	Active					1					1
	Flexible Combiner	Link to Output bad-no output	Active				1						1
	Sensor Control DV	Digital Sensor Alarm	Active				1	1					2
Chillventa				1		1	2	2	2	2	2	1	13

Table View

In the report, you might see **Controller Not Sending Alarms since last received time** advisory displayed without App Type. This is because the advisory is generated for the controller, and not for a specific application type.

Site	App Type	Advisory Message	State	2020-05-25		
				12	18	7
154 Atlanta					1	
	Air Handlers (AHUs)	Application config has changed	Active			
	Circuits (Standard)	Case Temp Hi Limit Exceeded	Active			
		Comb Temp Hi Limit Exceeded	Active			
	Flexible Combiner	Link to Output bad-no output	Active			
	Sensor Control DV	Digital Sensor Alarm	Active			
Chillventa		Controller Not Sending Alarms since last received time		1		1

Controller Not Sending Alarms Message

12.2 Energy Analysis Report

The Energy Analysis Report is now available from the directory and site levels. Right-click on directory or site, select **Reporting** > **Energy Analysis Report for Directory or Energy Analysis Report for Site**.

Energy Analysis Report

The bar chart and pivot table are visible and shown per site per day. It shows the past 7 days data by default.

You can filter the data by clicking the icon in the top right corner , then you will see each filter item listed above the report.

Data Filter

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