WebCTRL® v7.0

User Manual

1150 Roberts Boulevard, Kennesaw, Georgia 30144
770-429-3000 Fax 770-429-3001 | www.automatedlogic.com

AUTOMATEDLOGIC
United Technologies

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 Verify that you have the most current version of this document. Go to **https://accounts.automatedlogic.com**, then select **Support** > **Download** > **Documents** > **Software**.

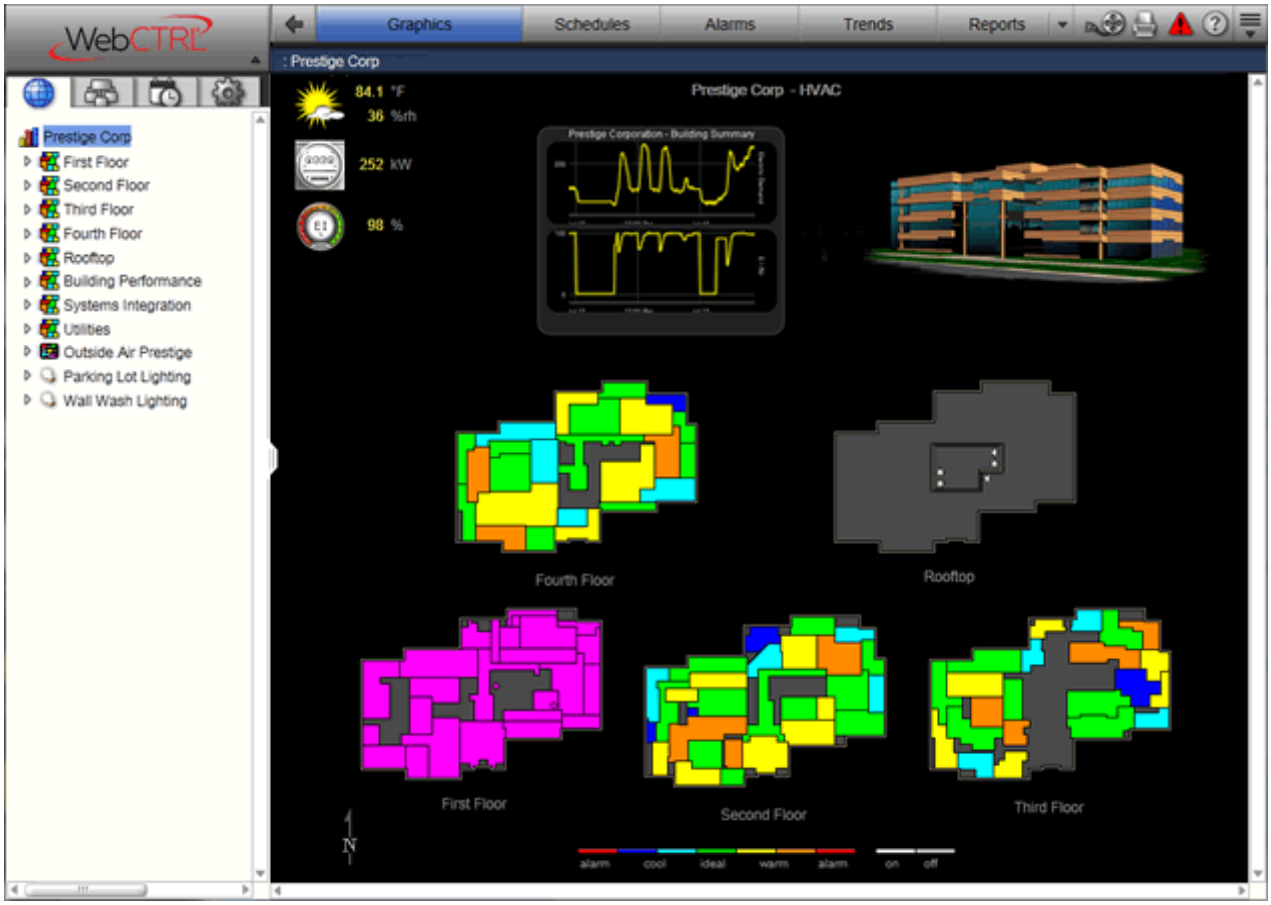
Important changes are listed in **Document revision history** at the end of this document.

Contents

What is a WebCTRL® system?

The WebCTRL® building automation system offers an intuitive user interface and powerful tools to help facility managers keep occupants comfortable, manage energy conservation measures, identify key operational problems, and analyze the results. The web-based WebCTRL® system can be accessed from anywhere in the world through a web browser. On a workstation or mobile device, you can perform building management functions such as:

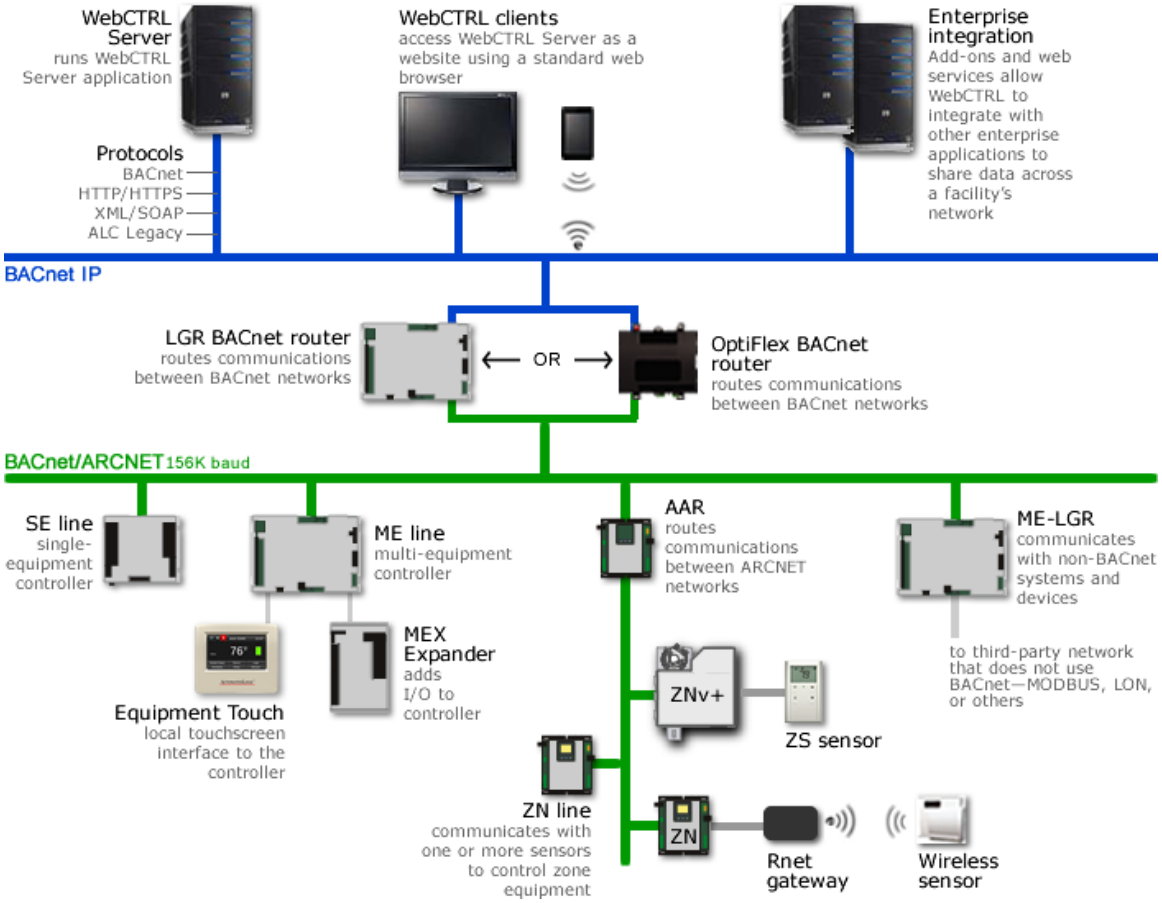
- adjust setpoints and other control parameters
- set and change schedules
- graphically trend important building conditions
- view and acknowledge alarms
- run preconfigured and custom reports on energy usage, occupant overrides, and much more



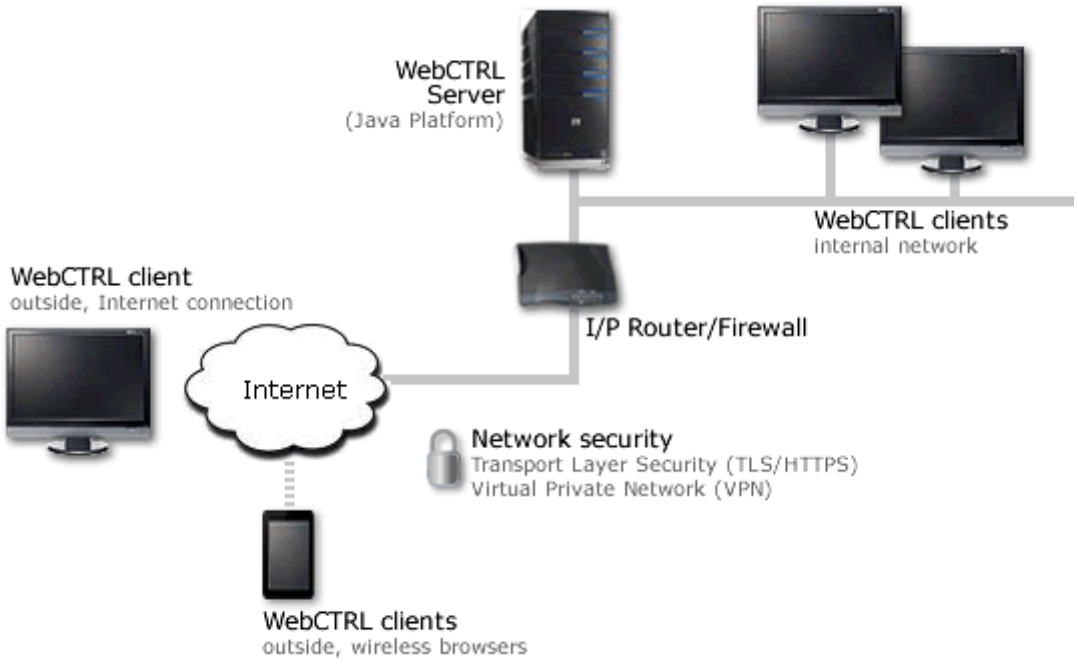
A typical WebCTRL® system

A WebCTRL® system uses a network of microprocessor-based controllers to control heating, air conditioning, lighting, and other facility systems. A web-based server communicates with these controllers and generates the WebCTRL® interface that the user can access through a web browser. Through the interface, you can gather information, change operating properties, run reports, and perform other building management functions on a single building, an entire campus, or a network of facilities that stretch around the globe.

A typical WebCTRL® system may include:



The WebCTRL® client uses a web browser to access the WebCTRL® Server application as a website. Access and security options may include:



WebCTRL® editions and optional packages

A WebCTRL® system is available in 3 editions: Standard, Advantage, and Premium.

Feature	WebCTRL® edition		
	Standard	**Advantage**	**Premium**
Unlimited simultaneous users	✓	✓	✓
Multiple operating systems and databases	✓	✓	✓
Mobile devices	✓	✓	✓
Custom graphics and dashboards for equipment, system, floorplan and campus visualization	✓	✓	✓
Alarms	✓	✓	✓
The following alarm actions: • Send SNMP trap • Web service request • Write property • Write to database	✗	Requires Advanced Alarming Package	Requires Advanced Alarming Package
Trends	✓	✓	✓
Hierarchical schedules	✓	✓	✓

Feature	WebCTRL® edition		
	Standard	**Advantage**	**Premium**
Time-lapse	✓	✓	✓
Third-party integration	✓	✓	✓
Secure server access using TLS	✓	✓	✓
International languages (International English, Brazilian Portuguese, Canadian French, French, German, Italian, Japanese, Korean, Russian, Traditional and Simplified Chinese, Spanish, Swedish, Thai, Vietnamese)	✓	✓	✓
Reports:			
Run preconfigured reports	✓	✓	✓
Schedule reports	✗	✓	✓
Import custom reports	✗	✓	✓
Create custom reports (current and legacy)	✗	Requires Advanced Reporting Package	✓
Discovery and communication with Carrier Open and CCN controllers	✗	Requires WebCTRL® Superset Package	Requires WebCTRL® Superset Package
Points (all input and output points regardless of vendor)	200	500	Unlimited
Supports licensed add-ons	✗	✓ *	✓
Advanced security features	✗	Requires Advanced Security Package	Requires Advanced Security Package

* Does not support the Automated Demand Response add-on.

Optional WebCTRL® packages

Package	Features
Advanced Reporting*	Report Manager that lets you create: • Custom reports A legacy-style report designer for creating the following reports: • *Equipment Values* (page 145) • *Trend Samples* (page 147)
Advanced Security	• *Location-dependent operator access* (page 158) • *Requirement of operator comments and operator verification prior to accepting system changes* (page 161)
Advanced Alarming	The following alarm actions: • *Send SNMP Trap* (page 79) • *Web Service Request* (page 81) • *Write Property* (page 82) • *Write to Database* (page 83) In addition to running an alarm action when an alarm or return-to-normal occur, alarm actions can be set to run: • After a delay period • Based on a schedule group's occupancy status
WebCTRL® Superset	Allows discovery of and communication with Carrier Open and CCN controllers.
Multi-CCN	Allows for mulltiple CCN Bus 0's for a WebCTRL system that has the WebCTRL Superset optional package. See the *CCN Integration Guide* for information on using this feature.

* These features are included in WebCTRL® Premium. This package can be purchased for WebCTRL® Advantage.

NOTES

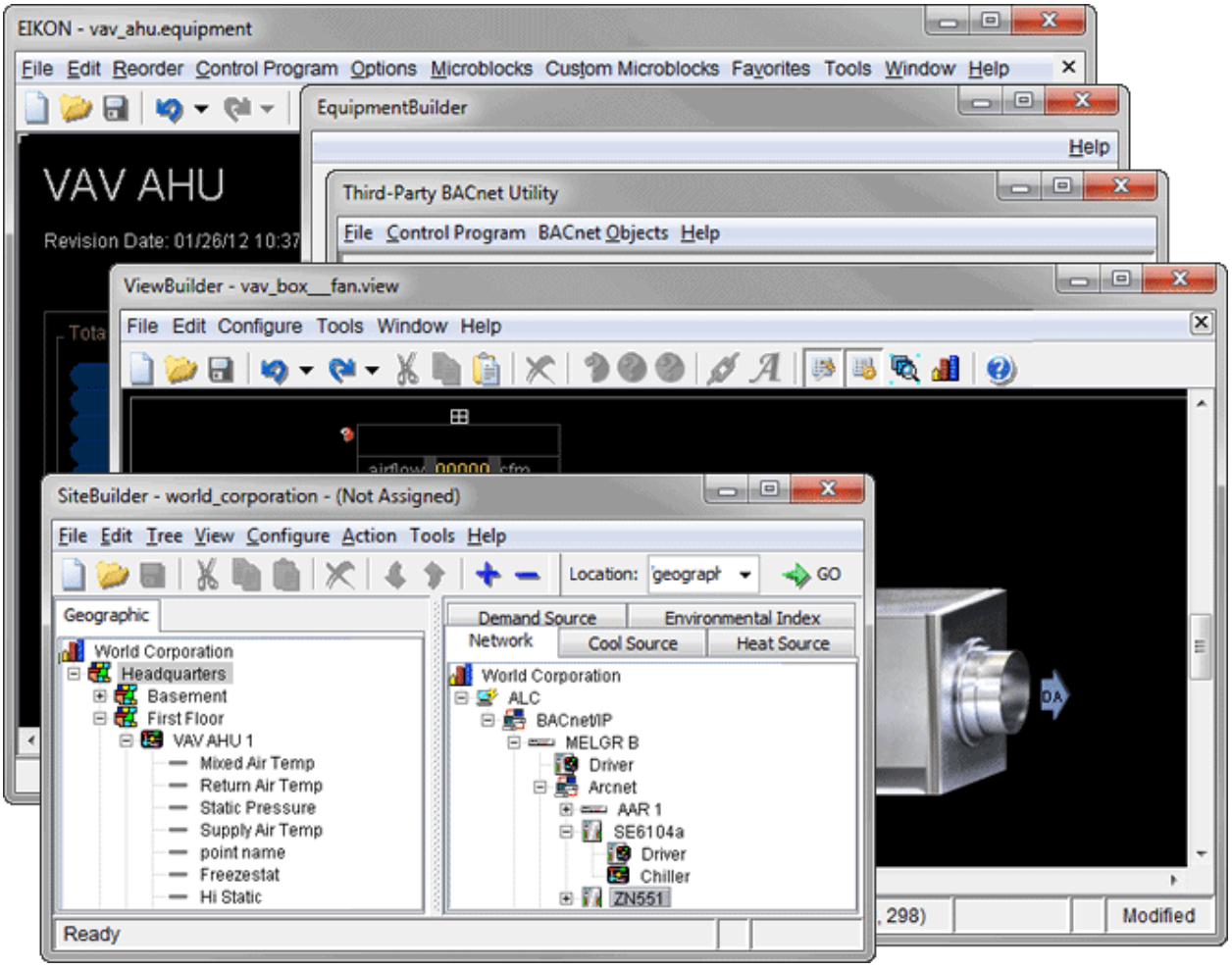
- An optional package is enabled when you *install a license* (page 191) that provides the optional package.
- What you can see and do in the WebCTRL® interface depends on your system's edition, optional packages installed, and which privileges have been assigned to you.

WebCTRL® tools

A WebCTRL® system includes the following tools.

Design Tools

Use...	To...
EIKON®	Create control programs and Properties pages.
ViewBuilder	Create graphics, touchscreens, and BAC*view*® screens.
SiteBuilder	Create and modify the system database and associate control programs and graphics with equipment.
Third-Party BACnet Utility	Use discovered BACnet information to choose and address microblocks for third party BACnet integration.
EquipmentBuilder	Generate the following files from a library of pre-defined applications. • Control program (.equipment) • Graphic (.view) • BAC*view*® file (.bacview), if applicable to the equipment • Sequence of operation (.odt) • Visio schematic (.vdx)



Start-up, Commissioning, and Service Tools

Use...	To...
Field Assistant	Service or start up and commission a piece of equipment or a partial network of controllers.
Test & Balance	Calibrate airflow in VAV zone controllers, commission air terminals, and override reheat and terminal fans.
Virtual BACview®	Let your laptop serve as a local interface to a single piece of equipment.

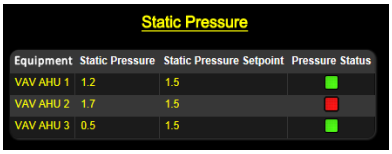
What's new in v7.0

What's new in the WebCTRL® application

Feature	Improvement
v7.0 cumulative patch #3	
Color maps (page 127)	When a color map graphic is viewed in Time-Lapse, the color map will now ignore report data and show thermographic colors.
v7.0	
Custom reports (page 105)	Custom reports are now created and managed through the new Report Manager. You can export one or more custom reports to a file so that they can be imported into another system. A custom report can provide data for the following new items on a Graphics page: • *Data table* (page 128) • *Chart* (page 132) • *Color map* (page 136) See *What's new in the ViewBuilder application* (page 3) for more information on the above items. **NOTES** • Data in a data table, chart, or color map does not change when the graphic is viewed in Time-lapse. • To support upgraded systems, you can still create and access *legacy (v6.5 and earlier) custom reports* (page 143).
Scheduled Reports (page 142)	You can set up a report to run on a recurring basis. The report is saved as a file (PDF, CSV, or XLS), and you can choose to have it automatically emailed to someone.
Default Email Server Configuration settings (page 181)	The Email Server Configuration settings, used by scheduled reports and the Send Email alarm action, are now located on the **System Settings** > **General** tab.
Send Email alarm action (page 77)	This alarm action can use the default Email Server Configuration settings defined in **System Settings**, or you can enter settings specific to the alarm action.
New FDD alarm categories (page 92)	The WebCTRL® application now has two new alarm categories, FDD Comfort and FDD Energy.
Send Web Service Request alarm action (page 81)	This new alarm action sends a web service request to a third-party server when an alarm occurs.
Disabling the Schedules feature (page 181)	You can disable the *Schedules* (page 43) feature in System Settings so that Schedules are no longer visible in the WebCTRL® interface for systems that do not use them.

Feature	Improvement
Improved Foreign Device Registration	If your system requires that WebCTRL® be registered as a foreign device to a BBMD, you can now define a second BBMD in case the first one fails.
System Statistics (page 181)	The System Statistics button on the General tab of System Settings now includes the following totals: • Number of controllers • Number of controllers that can run control programs • Number of points, regardless of vendor
Re-authentication of operator for 21 CFR Part 11 (page 161)	If an operator is required to record a reason for making system changes, the operator is now required to re-enter their system password in the box where they record the changes.
Run External Program alarm action (page 73)	This alarm action can now be set up only when running WebCTRL® Design Server.
Add-ons (page 189)	By default, the WebCTRL® application now allows only signed add-ons that are supported by Automated Logic®. This default can be overridden in SiteBuilder. See *What's new in the SiteBuilder application* (page 4). **NOTE** Some previously installed add-ons may not run after upgrade. See the "After the upgrade" in the *WebCTRL® v7.0 Upgrade Guide* for conditions and solutions.
Security enhancements	• The WebCTRL® login page no longer shows customer identifying "Licensed To" and "For use at" information, but the customer information is still available in the About WebCTRL box. • Apache Tomcat web server has been upgraded to v7.0.82. • The WebCTRL® application has been upgraded to Java 8 update 144.
64-bit server	The WebCTRL® v7.0 application will run only on a server with a 64-bit operating system. If you have a previous WebCTRL® version that is running on a 32-bit server, you will need to upgrade your server before installing v7.0.
2 new optional packages (page 3)	• The WebCTRL® Superset package allows the discovery of and communication with Carrier Open and CCN controllers. • The Multi-CCN package allows for multiple CCN Bus 0's for a WebCTRL® system that has the WebCTRL® Superset optional package. See the *CCN Integration Guide* for information on using this feature.
WAP device support	This has been removed from the WebCTRL® application. Smart phone support introduced in v6.5 replaced this functionality.

What's new in the ViewBuilder application

Feature	Improvement
v7.0 cumulative patch #3	
Color maps	When a color map graphic is viewed in Time-Lapse, the color map will now ignore report data and show thermographic colors.
v7.0	
Data tables (page 128) and *charts* (page 132)	These new controls on a Graphics page pull data from a WebCTRL® report. The chart control allows you to specify a line chart, pie chart, horizontal bar chart, or vertical bar chart.  **Data table**  **Vertical bar chart**
Color maps (page 136)	A Graphics page color map shows specified colors for various conditions that are defined in a WebCTRL® report. 
Default graphic size	The default graphic size in ViewBuilder is now 1666 x 849 pixels.
Local Variables	ViewBuilder now preserves local variables through cut/copy and paste, as well as when importing a .viewsymbol.
Layers	• ViewBuilder now preserves layers when importing a .viewsymbol. • If cutting/copying a selection assigned to layers, you must hold Shift while pasting in a new file to preserve layer assignments.

Feature	Improvement
Downloading a Custom Equipment Touch file	If a .touch file contains many screens or large images that cause the file to become too large for the controller's memory, you can download only the name of the .touch file to the controller instead of the entire file. You will then need to manually copy the .touch file to your device.

What's new in the SiteBuilder application

Feature	Improvement
v7.0 cumulative patch #3	
Hierarchical systems	You can now add a link from one child system to another child system so that the second child system appears in the first child system's navigation tree.
HTTP redirect to HTTPS	If you enable web server ports for Both HTTP and HTTPS, you can optionally elect to have HTTP requests automatically redirected to HTTPS.
v7.0	
Improved security settings	To increase security, the WebCTRL® application defaults to the following settings: • If your system is set to use TLS, the WebCTRL® application automatically uses TLS 1.2. • The WebCTRL® application requires SOAP applications to run over HTTPS. • The WebCTRL® application allows only add-ons that have been approved by Automated Logic®. **NOTE** If needed, you can override these defaults in SiteBuilder; however, doing so will lessen the security of your system.

What's new in the EIKON® application

Feature	Improvement
Support for the following new optional features has been added to EIKON®. When released, you can download them from https://accounts.automatedlogic.com/dowload under **Software Products and Updates** > **v7.0 installs and updates**.	
Improved Edit Order	Provides more flexibility and reduces the time needed to create property pages for equipment.
Translation Assistance Tool	Simplifies the process of creating non-English control programs.

Running WebCTRL® Server

The WebCTRL Server application communicates with the system's controllers and accesses and maintains the system database. You view and edit the system in client web browsers. WebCTRL Server must be running for an operator to log in from a web browser.

The application's **Current Users**, **Connections**, and **Output** tabs let you monitor the status of the system. Output information is continually archived to **WebCTRLx.x\logs**< date >**\core.txt**.

NOTE The instructions below are for a system that has been designed and set up. While designing a system, you can run the WebCTRL® application without communicating with the system's controllers. See Options for running a WebCTRL® system.

To start the WebCTRL® system

1. Click **Start** > **All Programs** > **WebCTRL x.x** > **WebCTRL Server**.

   TIP If you run the WebCTRL Server application as a Windows® service, your computer can automatically start the application every time the computer starts. See *Running WebCTRL Server as a Windows service* (page 198).
2. Open a web browser on one or more client computers.
3. Verify that your web browser is set up to display the WebCTRL® interface. See *Setting up WebCTRL® client devices and web browsers* (page 174).
4. Type the WebCTRL® server's address in the web browser's address field.

   NOTE You can type `http://localhost` if WebCTRL Server and the web browser are running on the same computer.
5. Enter a **Name** and **Password**.

To send a message to logged in operators

Messages are delivered immediately to WebCTRL® client web browsers. You can send multiple messages, but the operator must click **Ok** for the first message before the next message can be delivered. If the web browser window is minimized, the message is not visible.

1. On the WebCTRL Server application's **Current Users** tab, click  beside the user you want to send a message to. Or, click **Notify All Users**.
2. Type a message.
3. Click **OK**.

To log off an operator

From the WebCTRL Server application

NOTE The operator will be logged off without warning.

1. On the WebCTRL Server **Current Users** tab, right-click the operator, then select **Log Off User**.
2. Click **Yes**.

From the WebCTRL® interface

NOTE The operator will be logged off without warning.

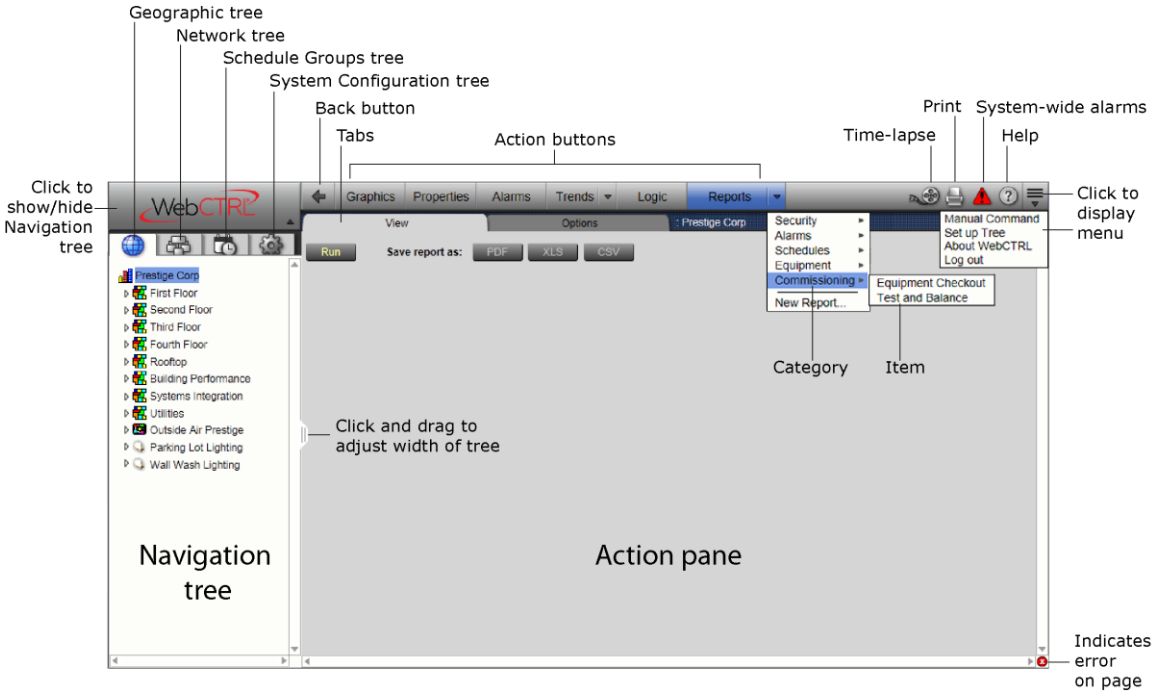
1. In the WebCTRL® interface, press **Ctrl**+**M**.
2. Type `whoson` in the manual command field.
3. Obtain the ID number of the operator you want to log off.
4. Press **Ctrl**+**M**.
5. Type `logoffuser x` (where x is the ID number).
6. Click **OK**.

To shut down a system

1. In the WebCTRL Server application, select **Server** > **Shut Down**.
2. Optional: Select a delay option, then edit the **Notification message**.
3. Click **Shut Down**.

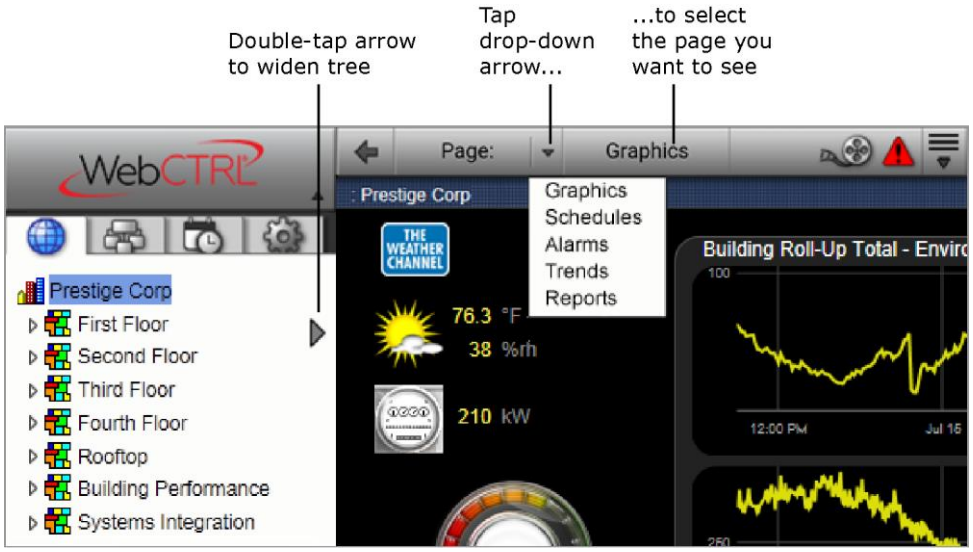
Getting to know the WebCTRL® interface

Computer and large-screen mobile interface



Small-screen mobile interface

Most of the WebCTRL® interface is the same on small-screen mobile devices except for the differences shown below.



- When you click  to hide the tree, the button changes to  .
- **Help** and **Print** are in the  menu.

NOTES

- After you log in, you will see the page defined as your starting location on the **My Settings** page. To change your opening page, see *To change My Settings* (page 156).
- Privileges control what an operator can see or do in the WebCTRL® system. If you cannot see or do something that you read about in Help, ask your System Administrator to check your privileges.

Navigation trees

The WebCTRL® interface has 4 navigation trees.

Geographic tree

This tree lets you navigate through the WebCTRL® interface using the system's geographic layout.

Network tree

This tree lets you navigate through the WebCTRL® interface using the system's network layout.

Schedule Groups tree

On this tree, you can create groups that can consist of areas, equipment, or other groups. You can then assign a schedule to the entire group instead of the individual items. See *To apply a schedule to a group of items* (page 45).

System Configuration tree

Most of the items on this tree are used for the setup and maintenance of your system.

My Settings	Lets you change settings that are specific to you such as your password, viewing preferences and contact information. See *To change My Settings* (page 156).
System Settings	Contains the system-wide settings that control the way the WebCTRL® system runs. See *System Settings* (page 181).
Operators **Privilege Sets** **Operator Groups**	Lets your system administrator define operators and what they can see and do in the WebCTRL® interface. See *Operator access* (page 149).
Categories	Lets you define categories for *schedules* (page 49), *alarms* (page 92), *graphics* (page 20), properties, *trends* (page 57), and *reports* (page 126). Categories allow you to view or control groups of similar items.
Scheduled Reports	Shows any report that was scheduled on the report's page. See *To manage scheduled reports* (page 143) for details.
Alarm Templates	See *If you upgraded alarms from v2.0 or earlier* (page 94).

Connections	Lets you set up, start/stop, and troubleshoot your network connections. See Setting up networks.
Services	Shows internal processes of the WebCTRL® application for troubleshooting.
License Administration	Lets you update your WebCTRL® license. See *To register your WebCTRL® software* (page 191).
Update	Click **Update** to select and apply patch, service packs, drivers, language packs, graphics libraries, and Help updates.
Hierarchical Servers	If your system has hierarchical servers, this page shows the servers that your server is connected to.
Client Installs	Lets you install applications that are to run on client computers.

Navigating the system

NOTE Use only the WebCTRL® interface to navigate; do not use the web browser's navigation buttons.

To navigate to an item in the system

1 Select an item on the **Geographic** or **Network** tree.

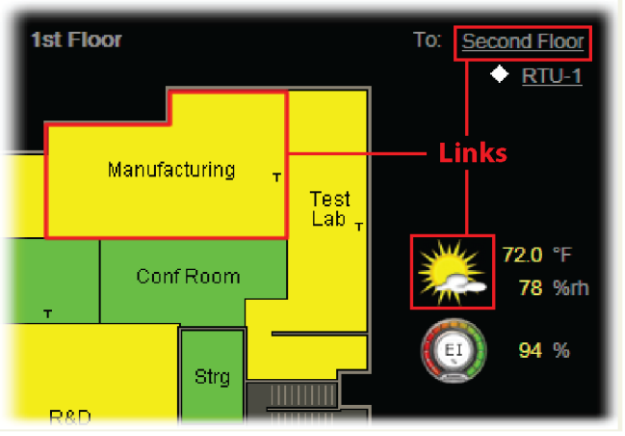
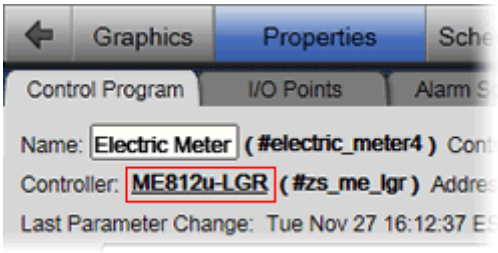
NOTE The **Schedule Groups** and **System Configuration** trees are used to set up your system.

2 Use the action buttons and their drop-down menus to navigate to specific types of information about the selected tree item.

3 Use the tabs to filter the information further.

To navigate using links

Click links to jump to related pages.

On a Graphics page	On a Properties page
	

Tree icons and hover text

The navigation tree displays an icon to the left of each item to denote the type of item. For example:

System Area Equipment

To select custom equipment icons in the WebCTRL® interface, right-click the equipment on the **Geographic** or **Network** tree, select **Configure**, then select the **Icon**. You can also select custom icons in the EIKON® application.

Optional icons

You can display the following icons to denote locations on the **Geographic** tree where items were created or assigned.

Schedules Trend Graphs Alarm Actions

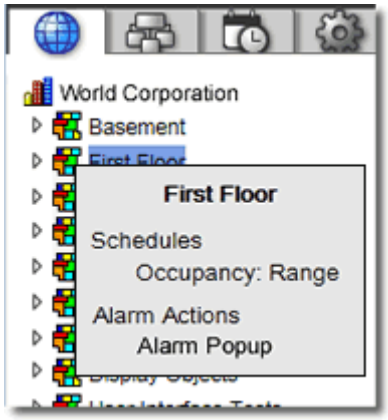
Schedule Groups Reports Privileges

To turn on optional icons:

1. Right-click the **Geographic** tree.
2. Select **Tree Display Options**.
3. Select the desired **Tree Icons**.
4. Click **Accept**.

Optional hover text

If you turn on hover text, you can hold the cursor over a system, area, or equipment icon to display information about its item. The information displayed depends on which hover text options you select.



To turn on hover text:

1. Right-click the tree.
2. Select **Tree Display Options**.
3. Select the desired **Tree Hover Text**.
4. Click **Accept**.

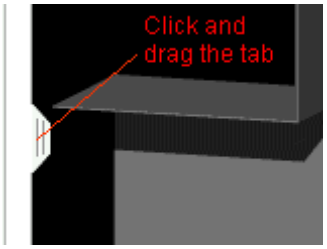
To show, hide, or resize the navigation tree

On a computer or large screen mobile device

Click 

at the top of the navigation tree to hide or show the tree.

Click and drag the tab on the right side of the tree to adjust its width.



On a small-screen mobile device

Touch 

at the top of the navigation tree to hide the tree. Touch  to show it.

Double-tap the arrow on the right side of the tree to widen the tree. Double-tap again to return to the original size.

Zooming in and out

On a computer

- To zoom in and out on the WebCTRL® interface:
  - Hold down **Ctrl** and press + or -. Press **Ctrl+0** to return to 100%.
  - Hold down **Ctrl** while rolling your mouse wheel.
  - Use your web browser's zoom functions.
- If a graphic does not fit in the action pane, right-click it and select **Scale to Fit** to make it fit the action pane. Select **Scale to Fit** again to return the graphic to its original size.

On a mobile device

Apple® iPad and iPhone

- Double-tap to zoom in/out.

Microsoft® Surface™

- Pinch-zoom works on individual frames, instead of the whole screen. So, you can zoom and scroll the navigation pane and action pane separately.
- If browser text is too small, use **Ctrl +** to increase Internet Explorer's zoom level, then reload the page.

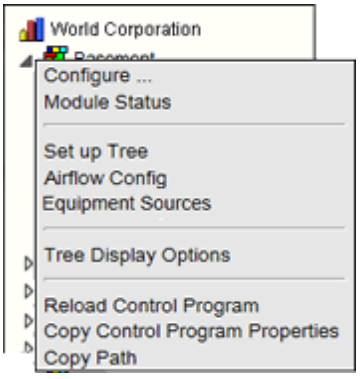
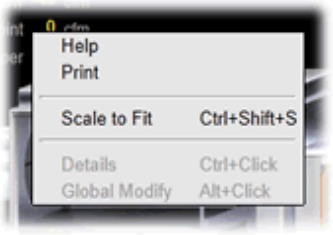
Google™ Nexus™ and Nexus Lumia

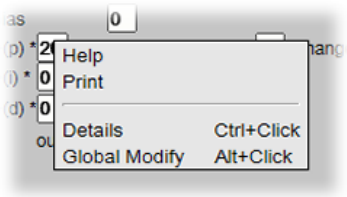
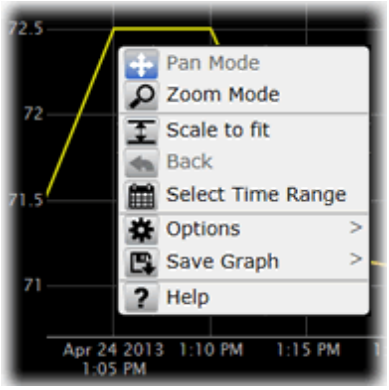
- Pinch-zoom to zoom in/out.

Using right-click menus

On a computer

You can right-click the following items to select options:

A tree item	The action pane
	

A property	A trend
	

On a mobile device

To access the right-click menu for:

- A tree item–Select the item first, then touch and hold the item for several seconds.
- The action pane–Touch and hold the item for several seconds.

NOTE For iPhones and iPads, touch and hold your finger on the item to bring up the right-click menu, then drag your finger to the menu option that you want without lifting your finger.

To print the action pane

On a computer

Click  at the top of the page to print the contents of the action pane. Set the print orientation to **Landscape** in the **Print** dialog box.

 **TIP** To print a Graphics page that exceeds the size of the action pane, right-click the graphic and select **Scale to Fit**.

On a mobile device

Touch  and then select **Print**.

Colors and status in the WebCTRL® interface

The following colors indicate equipment status on floor plans, equipment property pages, and some reports.

Color	Color Name	Status Code	Condition Indicated
	Mustard	none	In equipment when running WebCTRL Design Server
	Purple	0 or 15	In a controller—non-operational or no communications In equipment—a hardware or software error
	Charcoal	14	In a controller—a download is required or is already in progress In equipment—a controller has stopped
	Coral	13	Control program error **NOTE** If a zone controlled by a U line controller shows coral on a floorplan, the controller may be offline.
	Red	2 or 9	Heating or cooling alarm
	Orange	8	Maximum cooling
	Dark blue	3	Maximum heating
	Yellow	7	Moderate cooling
	Light blue	4	Moderate heating
	Gray	1	Unoccupied/inactive
	White	10	Occupied/active
	Light green	6	Free cooling
	Green	5	In a controller—operational or operational read only In equipment—No heating or cooling

Colors and setpoints

Thermographic colors indicate how much a zone's actual temperature differs from its setpoints.

Five conditions may affect a zone's thermographic color:

- Setpoint adjust
- Timed local override (TLO)
- Optimal start
- Demand level
- Hysteresis

In the examples below, a zone's heating occupied setpoint is 70° and its cooling occupied setpoint is 74°.

If you normally see...	when the zone temp is...	but...	then you will see...
green	72.5°	someone adjusts the setpoints (for example, with a **setpoint adjust** of two degrees, the new setpoints would be 68 and 72°)	yellow
gray	73° (unoccupied)	someone presses the **Override** button on a zone sensor to use the occupied setpoints	green
gray	77° (unoccupied)	the zone is in **optimal start** and is ramping up to its occupied setpoint in the few hours before occupancy	an occupied color
yellow	75°	the zone's electric meter is in **demand level** 2 with relaxed setpoints of 68 and 76°	green
green	73.5°	cooling began when the temperature rose above 74° and the temperature has not yet dropped beyond the 1° **hysteresis** (to 73°)	yellow

Working with equipment

You can view and adjust equipment operation from the following pages:

Graphics pages (page 17)

You can view and adjust your essential building controls on most Graphics pages.

- **Thermographic floor plans** indicate the temperature of zones compared to their effective setpoints.

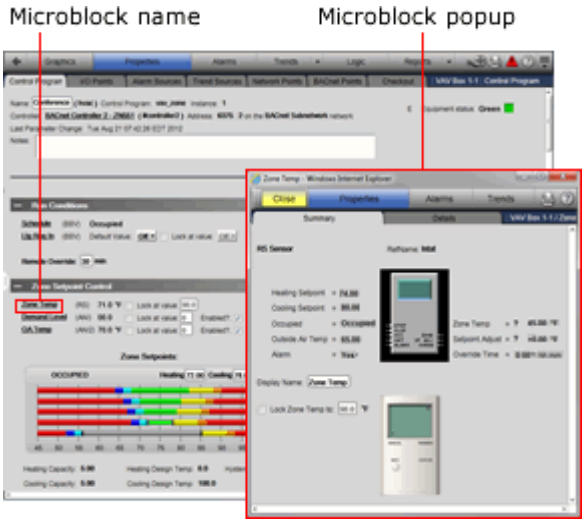
- **Equipment graphics** show the current status of mechanical equipment and often include an adjustable setpoint control or other editable properties.

Properties pages (page 22)

Each piece of equipment and each microblock has a Properties page. You can view and adjust more equipment properties on a Properties page than on its corresponding Graphics page.

Logic pages (page 25)

Logic pages show the control program for a piece of equipment. Use the sequence of control and yellow status values on the Logic pages for troubleshooting your mechanical equipment.



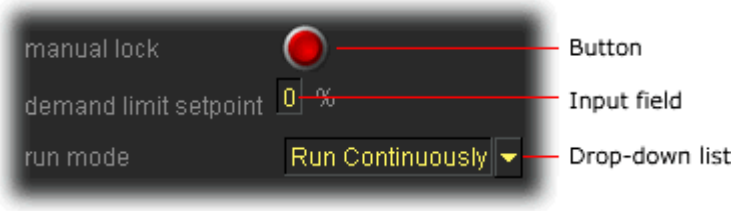
Microblock pop-ups

To open a microblock pop-up where you can view and change properties:

- Click a microblock on a Logic page.
- Click the bold, underlined microblock name on a Properties page.
- Right-click a value and then select **Details**.

Graphics pages

You can view and adjust your system from Graphics pages, which include navigation maps, floor plans, and equipment.



Some typical items that may appear on a graphics page are:

- Button or switch to turn equipment on or off
- Input field to set a property value
- Drop-down list to select a state

- Interactive zone sensor to override an unoccupied schedule
- Setpoint graph to adjust *setpoints* (page 37)
- Trend graph to view *trend* (page 52) information
- Link to jump to another WebCTRL® page or to the Internet
- A data table, chart, or color map that pulls information from a *custom report* (page 127).

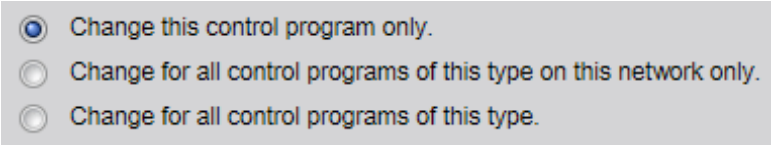
NOTES

- Right-click a value, then select **Details** to view and change properties in the microblock pop-up.
- Right-click a value, then select **Global Modify** (page 27) to view and change the property in other control programs.
- A yellow dashed box around a value indicates the value is locked. 

- If a graphic does not fit in the action pane, right-click it and select **Scale to Fit** to make it fit the action pane. Select **Scale to Fit** again to return the graphic to its original size.
- When a chart that is based on a report is displayed on a Graphics page, you can hover over various points on the chart to see values. You can also click on each item in the legend to turn that information on and off. See *Using a custom report as the source for a Graphics page* (page 127) for more information on a chart.

To attach a graphic in the WebCTRL® interface

1. On the navigation tree, right-click the item that you want to attach a graphic to, then select **Configure**.
2. Equipment graphic only: If the system has other control programs of this type, select which control programs you want to change.

   NOTES

   - If the control program is in an IP router, the second option will change the graphic for all control programs of this type only on the IP network.
   - If the control program is on the network below an IP router, the second option will not change the graphic for the router's control programs of this type.
3. Do one of the following:

If the graphic is...	
In the **Views Available** list	a. Select the graphic, then click **Attach**. b. Click **Accept**.

If the graphic is...	
Not in the **Views Available** list	a. Click **Add New**. b. Browse to select the view file. c. Click **Open**. d. Click **Continue**. e. Click **Close**. f. Click **Close** again.

NOTES

- Select a graphic in the **Attached** list to edit the following information for the graphic:
  - **Display Name**–The name that appears in the **Graphics** button drop-down list
  - **Category**–The name of the category that multiple graphics may be sorted into in the **Graphics** button drop-down list

    NOTE Changes to **Display Name** or **Category** apply only in the WebCTRL® interface and are not retained if you export source files.
  - **Reference Name**–The name that is used to create links to the graphic in ViewBuilder
  - **Default View**–Sets the selected graphic as the default view if the tree item has multiple graphics. The default graphic is bolded in the **Attached** list.
    NOTE The default graphic is initially set in SiteBuilder.
  - **Included in download**–Equipment graphics only. Select to have the .view file included in an **All Content** download so that it can be uploaded by Field Assistant. The graphic will have  beside it in the **Attached** list. Requires 4.x or later drivers.

- You can click **Delete Unused** at the bottom of the **Views** section to delete all unattached graphic files from your system.

To edit a graphic on a WebCTRL® client

On a WebCTRL® client, you can get a copy of a graphic from the server, edit it, then put it back on the server.

To get the graphic

1. On the WebCTRL® **Geographic**  tree, right-click the item that the graphic is attached to, then select **Configure**.
2. At the bottom of the **Views** section, click **Edit Existing**.
3. Select the graphic you want to edit.
4. Click **Save**
5. Browse to the folder you want to put the file in.
6. Click **Save**.
7. Click **Close**.
8. Click **Close** again.

To put the edited graphic back on the server

1. On the WebCTRL® **Geographic**  tree, right-click the item that the graphic is attached to, then

select **Configure**.

2 At the bottom of the **Views** section, click **Add New**.

3 Browse to select the .view file.

4 Click **Open**.

5 Click **Continue**.

6 Click **Close**.

7 Click **Close** again.

To organize multiple graphics for a tree item

In the WebCTRL® interface, you can create categories and assign graphics to them so that the **Graphics** button drop-down menu has the graphics arranged by category. This is typically done in ViewBuilder or SiteBuilder. See "To define WebCTRL® navigation" in ViewBuilder Help and "To attach graphic files" in SiteBuilder Help.

To add a Graphics category in the WebCTRL® interface

1 On the **System Configuration** tree, click ▷ to the left of the **Categories** folder, then select **Graphic**.

2 Click **Add**.

3 Type the **Category Name** and **Reference Name**.

4 Optional: Select a privilege so that only operators with that privilege can access graphics in the category.

5 Click **Accept**.

NOTES

- To edit a category, select the category, make your changes, then click **Accept**.
- To delete a category, select the category, click **Delete**, then click **Accept**.

To assign a graphic to a category in the WebCTRL® interface

1 On the **Geographic** tree, right-click the item that the graphic is attached to, then select **Configure**.

2 Under **Views**, select the graphic in the **Attached** list.

3 Select the category in the **Category** field.

4 Click **Accept**.

To control equipment using an interactive zone sensor

An equipment graphic may include an interactive zone sensor that provides you with the following control.

If the sensor is a...	You can...
ZS 	• Click ▲ to raise the setpoint or ▼ to lower the setpoint. • Click ⏻ to override the schedule and put the zone in an occupied state. To cancel an override, continue clicking ⏻ until the display shows 0. • See that the zone is in an occupied state when the green LED is lit.

RS Standard, Plus, or Pro
 
	• Click the **WARMER** or **COOLER** button to adjust the setpoint.
	• Click the **MANUAL** button to override the schedule and put the zone in an occupied state.
	• Click the **INFO** button to cycle through the following information:
	  • Outside air temperature, if enabled in the control program
	  • Override time remaining
	  • Heating setpoint
	  • Cooling setpoint
	• See the **Occupied/Unoccupied** state in the display.

If the sensor is a...	You can...

RS Pro-F
 
	• Click the **WARMER** or **COOLER** button to adjust the setpoint.
	• Click the **MANUAL** button to override the schedule and put the zone in an occupied state.
	• Click the **INFO** button to cycle through information such as:
	  • Outside air temperature
	  • Override time remaining
	  • Heating setpoint
	  • Cooling setpoint
	• Click the **FAN** button to adjust the fan speed.
	• Click the **MODE** button to perform customer-specific functions.
	• See the **Occupied/Unoccupied** state in the display.

LogiStat 	• Click ▲ to raise the setpoint or ▼ to lower the setpoint. • Click  to override the schedule and put the zone in an occupied state. • See that the zone is in an occupied state when the red LED is lit.

Properties pages

Properties pages are automatically generated from control programs created in the EIKON® application. Use Properties pages to:

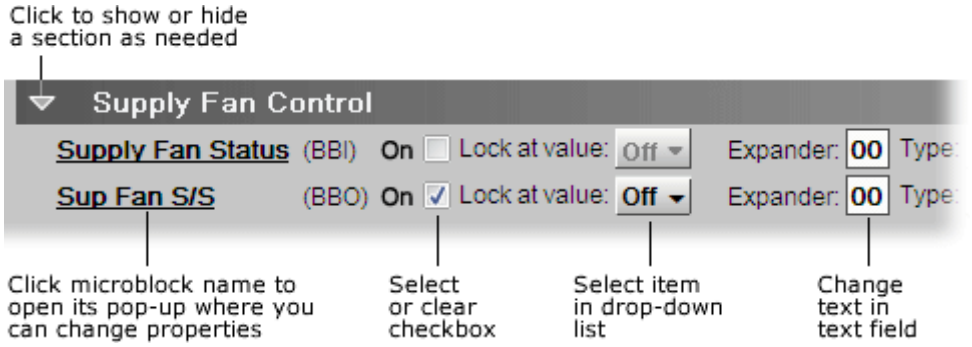
- View the status of a piece of equipment. See *Colors and status in the WebCTRL® interface* (page 14).
- View or change the equipment or microblock properties currently stored in the controller
- Commission equipment

To view or edit properties

1 Select a piece of equipment or a microblock on the **Geographic** or **Network** tree, then click **Properties**.

NOTE You must resolve any condition described in red text at the top of the page before a **Properties** page can obtain current information from its controller.

2 To change a property:



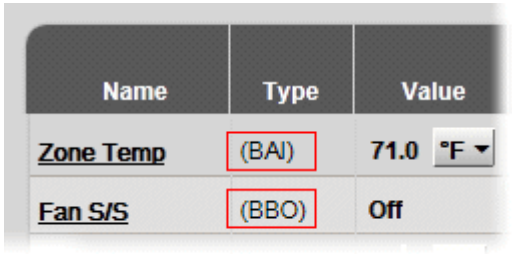
3 Click **Accept**.

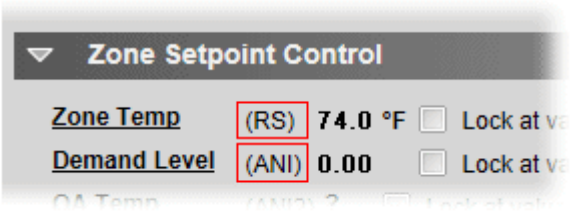
NOTES

- Right-click a value, then select **Details** to view and change properties in the microblock pop-up.
- Right-click a value, then select **Global Modify** (page 27) to view and change the property in other control programs.
- A yellow dashed box around a value indicates the value is locked. 

Point types

A point name on the Properties page is followed by a code that tells you the point type. The table below describes each code.





Code	Point type
AI	Analog Input
ANI	Analog Network Input
ANI2	Analog Network Input 2
ANO	Analog Network Output
ANO2	Analog Network Output 2
AO	Analog Output
ASVI	BACnet Analog Sensed Value Input

Code	Point type
AV	Analog Value
BAI	BACnet Analog Input
BALM	BACnet Alarm
BAO	BACnet Analog Output
BAV	BACnet Analog Value
BBI	BACnet Binary Input
BBO	BACnet Binary Output
BBV	BACnet Binary Value
BFM	Floating Motor
BI	Binary Input
BLSTAT	LogiStat Zone Sensor with Optional OAT Display
BMSV	BACnet Multi-State Value
BNI	Binary Network Input
BNI2	Binary Network Input 2
BNO	Binary Network Output
BNO2	Binary Network Output 2
BO	Binary Output
BPTA	Pulse to Analog Input
BPWM	Pulse-Width Output
BRS	RS Sensor
BRSF	RS Sensor Fan
BSVI	BACnet Binary Sensed Value Input
BTLO	Timed Local Override
BTRN	Trend Log
BV	Binary Value
DI	Digital Input
DO	Digital Output
EVT	BACnet Alarm
LAN AI	LAN Analog Input
LAN AO	LAN Analog Output
LAN DI	LAN Digital Input
LAN DO	LAN Digital Output
LSTAT	LogiStat Zone Sensor
POLLAVG	Average Analog Properties

Code	Point type
POLLMAX	Maximum Analog Properties
POLLMIN	Minimum Analog Properties
POLLTOT	Total Analog Properties
PTA	Pulse to Analog Input
TLO	Timed Local Override

Logic pages

The Logic page shows the control program for a piece of equipment. The live data (yellow text) is updated every few seconds and when you click the **Logic** button. The control program uses exact property values for its calculations, but values are rounded to 2 decimal places when displayed on the Logic page.

TIP Click anywhere on the Logic page, then use your keyboard's Page Up, Page Down, and arrow keys to scroll through the page.

NOTE If you find an unexpected value on a Properties page or a Logic page, you can use the Logic page to troubleshoot.

To view a Logic page

1. Select a piece of equipment on the **Geographic** or **Network** tree.
2. Click **Logic**.
3. Click a microblock to view its details.

To locate a microblock, section, or label

1. Right-click the Logic page, then select **Jump To**.
2. Do one of the following:
   - On the **Microblock** or **Section** tab, select an item to have it located and highlighted.
   - On the **Label** tab, select a label to display a reduced logic page outlined in yellow that shows all instances of the label. A red box indicates an output label; a yellow box indicates an input label. Click a red or yellow box to jump to that label in the full-size logic page.

     NOTE You can also click a label on the full-size Logic page to display the reduced Logic page.

To change properties, alarms, or trends

1. Click a microblock on the equipment's **Logic** page.
2. In the microblock pop-up, click the **Properties**, **Alarms**, or **Trends** button.

3 Change properties, alarms, or trends for that microblock in the same way that you would make changes on a regular *Properties* (page 22), Alarms, or *Trends* (page 52) page.

4 Click **Accept**.

NOTE Right-click a value, then select **Global Modify** (page 27) to view and change the property in other control programs.

Using a Logic page to troubleshoot

The WebCTRL® application monitors your system and provides feedback. If you get unexpected feedback, you can use a Logic page as a troubleshooting tool. On the Logic page, work your way backward (right to left) through the sequence in the control program to discover what caused the problem. See Microblock Reference to understand what each microblock in the sequence is doing.

Unexpected feedback	Possible cause
Space temperature reads excessively high or low	• The sensor has a short (or open) circuit. Verify wires are properly connected at the sensor and controller. • A sensor is missing or configured incorrectly. Open the sensor or input microblock from the Logic page to verify its configuration.
Equipment displays an unexpected color - effective setpoints are different than the programmed setpoints	**NOTE** Equipment operates using effective setpoints. Open the Setpoint microblock from the Logic page and check the following: • Hysteresis • Demand Level • Optimal Start • Timed Local Override (TLO) • Setpoint Adjust
Gaps in trend data on trend graph	Usually gaps result if network communication was disrupted or a point was temporarily disabled. If the gap is not the result of interrupted communication, send reports more frequently. From the Logic page, open the trend microblock that displayed the gap in data, then decrease the notification threshold so that it is approximately 40% of the buffer size (allocated memory size) for that microblock.
The WebCTRL® application is not receiving alarms from a BACnet alarm microblock	Locate the microblock on the Logic page. If the color square on the microblock is black, the alarm is disabled. To enable it: 1 Click the microblock. 2 In the microblock pop-up, click the **Alarms** button. 3 On the **Enable/Disable** tab, select **Potential alarm source**.

Unexpected feedback	Possible cause
The equipment is on when I expect it to be off, or off when I expect it to be on	Use the Logic page to determine whether the program is sending an unexpected signal and why, or if the problem is with the physical equipment. For example, the On-Off-Auto (OOA) switch on the controller for that equipment may be locked in the On (Hand) position.
Sensor value on the Properties page does not match the reading from handheld sensor	Calibrate the sensor. On the Logic page, check to see if the output point is locked on.

Changing multiple microblock properties

Two WebCTRL® features, **Global Modify** and **Global Copy**, allow you to view and change multiple microblock properties at the same time.

CAUTION Global Modify and Global Copy are convenient for making widespread changes in your system. But, because they do not take into account the operation of individual equipment, your changes could produce undesired results in your equipment or system operation. Use with caution because these features do not have an Undo function.

TIP Click to copy a microblock's reference path to the clipboard so you can paste it into another field or application.

To use Global Modify

Use the Global Modify feature to:

- View a microblock's full path, control program name, and the privileges required to change its properties.
- View or change a single property in several control programs at one time.
- View errors on Graphics and Properties pages.

1. Browse to any page that displays the property you want to view or change.
2. Do one of the following to open Global Modify:
   - **Alt+click** the property (**Ctrl+Alt+click** if Linux).
   - Right-click the property and select **Global Modify.**

3 Make changes to the **Control Program** field, if needed.

NOTES

- Use wildcards in the **Control Program** field to broaden the search.
  For example:

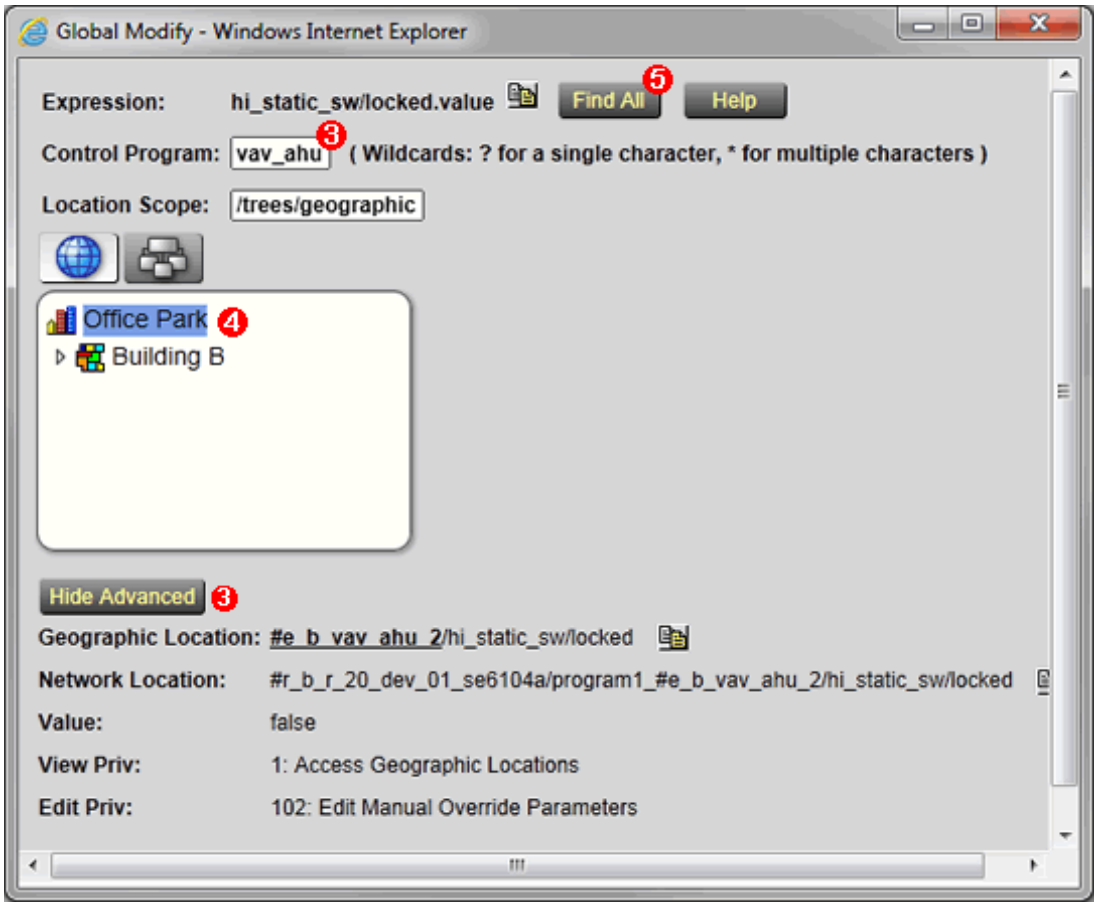
  `vav*` matches vav, vav**1**, vav**x**, vav**12345**

  `vav*z` matches vavz, vav**1**z, vav**x**z, vav**12345**z

  `vav*1*2` matches vav12, vav**abc**1**xyz**2

  `vav??` matches vav**11**, vav**12**, vav**zz**, but does not match vav, vav1, vav123

  `*` matches any control program
- Click **Show Advanced** to view the location, value, and privileges associated with this property.4



4 Select the tree item that you want to search under for every occurrence of that microblock in other control programs.

5 Click **Find All**.

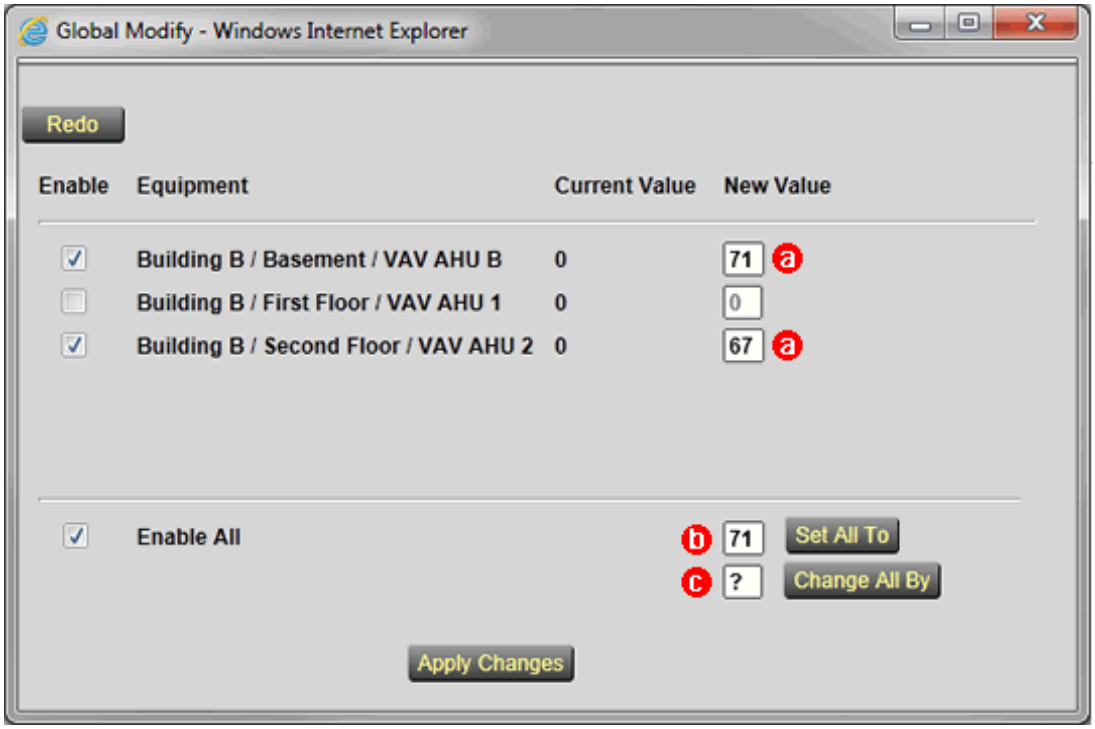
6 Select the properties in the list that you want to change.

7 Do one of the following:

a) Type a **New Value** to the right of each selected item.

b) Select **Enable All**, type a new value in b, then click **Set All To**.

c) Select **Enable All**, type a new value in c, then click **Change All By**.



8 Click **Apply Changes**.

NOTE To modify several properties in multiple control programs at the same time, use **Global Copy**.

To use Global Copy

Use **Global Copy** to copy any or all of the following from one control program to other equipment using the same control program:

- Embedded trend graph settings
- Custom trend graphs
- Custom reports
- Other editable properties to other pieces of equipment using the same control program.

1 On the **Geographic** or **Network** tree, right-click the piece of equipment that has the properties you want to copy, then select **Copy Control Program Properties**.

2 Click **OK** when you see **This will copy this control programs properties to other control programs of the same type. Continue?**. This opens the next screen and does not lock in any changes.

3 In the **Global Copy** dialog box, select the items that you want to copy.

4 Select the area on the tree containing similar control programs that you may want to copy these properties to, then click **Search**.

All instances at that level and below are listed in the expanded lower window.

5 Check or uncheck items as needed.

6 Do one of the following:
   - Check **Skip bad values** to copy all values except a bad value (it cannot be copied because you do not have the necessary privilege, the property to be copied is undefined, etc.).
   - Uncheck this field to prevent any values from being copied if a bad value is found.

7 Click **Apply Changes**, then close the **Global Copy** dialog box.

Downloading to controllers

If you make any of the following changes, you must download the new data from the WebCTRL® application to the affected controllers.

In the WebCTRL® interface	• Change or reload a control program • Change or reload a driver • Change a schedule **NOTE** A schedule change automatically downloads unless you uncheck **Automatically download schedules on each change** on the **My Settings page**. • Change a touchscreen or BAC*view*® file • Check or uncheck a .view file's **Included in download** option
In SiteBuilder	• Add a device • Add equipment • Change or reload a control program • Set an object instance • Change or reload a driver • Assign or unassign equipment • Check or uncheck a .view file's **Included in download** option

The WebCTRL® application automatically marks the affected controllers as requiring a download. You can download these controllers from the **Downloads** *page* (page 31) or **Properties** *page* (page 32) for the controller, the equipment, or a microblock.

When the WebCTRL® application marks a controller for download, it determines what information needs to be downloaded based on the type of information that changed. See *Download Options* (page 31).

NOTES

- A property change in the WebCTRL® interface is automatically downloaded to the controller. If the download fails, the controller is added to the **Downloads** page with the reason for the failure.
- To see who downloaded a controller last, go to the **Network** tree, select the controller, then do one of the following:
   - Go to **Reports** > **Network** > **Controller Status**, then click **Run**.
   - View **Downloaded by** on the **Properties** page.
   - Click **Module Status** on the **Properties** page.

Download Options

When the WebCTRL® application marks a controller for download, it determines what information needs to be downloaded based on the type of information that changed. Below are the options that can be downloaded.

This option...	Downloads...
All Content	• The names and executable portion of the driver and control programs • The names and full content of Equipment Touch and BACview® files • The names of any .view files that are marked to be included in a download • Parameters • Schedules **NOTE** An All Content download also: • Synchronizes the controller's time to the WebCTRL® server. • Overwrites trends in the controller. • Restarts the controller.
Only Schedules	All schedules that are not set for automatic download
Only Parameters	All editable properties
Only BBMDs	BBMD tables (.bdt file) that you have updated but have not yet written to the controller

NOTES

- An **All Content** download clears trend, history, and alarm data from the affected controllers. At the beginning of the download process, trends that have the Trend Historian enabled are saved to the system database.
- You can choose to have the **All Content** option download the full source files. On the WebCTRL® **Network** tree, select a controller, then enable **Download Source Files** on the **Properties** page.

To download from the Downloads page

The **Downloads** page shows any controllers that the WebCTRL® application marked for download. But if needed, you can add other controllers to the list.

To download:

1. On the **Network** tree, select an item to download controllers at and below that item.
2. Click **Downloads**.
3. Click ▶ to the left of a **Location** to see controllers that require a download.
4. Optional: To add controllers to the list:
   a) Click **Add**.
   b) Select the controller(s).
   NOTE Use **Ctrl+click** or **Shift+click** to select multiple controllers.
   c) Select a *Download Option* (page 31).
   d) Click **Add**, then click **Close**.

5 Select the controllers that you want to download.

NOTES

- Use **Ctrl+click**, **Shift+click**, or the **Select All** checkbox to select multiple controllers.
- A network's controllers download in the order shown. To change the order, select a controller(s), then drag and drop or click **Move to Top** or **Move to Bottom**.
  EXCEPTION If a controller's router requires a download, it will download first regardless of its position on the Download page.

6 Click **Start**.

NOTES

- Click **Hold** to stop pending downloads. Active downloads cannot be stopped.
- Up to 5 routers can download simultaneously.
- A controller is removed from the list when its download is complete.
- Icons in the **Tasks** column indicate the following:

	Active—The WebCTRL® application is downloading to the controller.
	Pending—You initiated the download, and the controller is waiting for its turn to download.
	Failed—The download failed. See *If a controller fails to download* (page 32).
	On Hold—Indicates either of the following: • The controller requires a download • You clicked **Hold** to stop a pending download.

- Click in the upper left-hand corner to view a log of download activity in the current session. **Copy to Clipboard** lets you copy the text to paste it into another application.
- To remove an item from the download list, right-click the item, then select **Remove selected tasks**.

To download from a Properties page

If a controller requires a download, a red download message and a **Download** button appear at the top of the **Properties** page for the controller, the equipment, or a microblock. Click the button to start the download.

Downloading from the **Properties** page downloads **All Content** to the controller.

If a controller fails to download

A controller that fails to download appears on the **Downloads** page with this icon .

1 Review the reason for the failure:
   - Hold your cursor over the failed task to see hover text giving the reason.
   - Click in the upper left-hand corner of the page to see information on all failed downloads. **Copy to Clipboard** lets you copy the text to paste it into another application.

2 Correct the problem that caused the failure.

3 Select the controller on the **Downloads** page, then click **Start**.

Checking controller status

On the WebCTRL® **Network** tree, you can select a network, router, site, or the system, and then click the **Devices** button to:

- *View the status of controllers* (page 33)
- View controller information such as address, model, driver, and .view files included in download
- *Download or upload to resolve a mismatch* (page 36)
- Troubleshoot network communication
- Download or upload files for Field Assistant

NOTES

- Use **Ctrl+click**, **Shift+click**, or the **Select All** checkbox to select multiple controllers.
- Click **Hold** to stop pending downloads or uploads. Active downloads or uploads cannot be stopped.
- Icons in the **Tasks** column indicate the following:

	Active—The WebCTRL® application is downloading to the controller.
	Active—The WebCTRL® application is uploading from the controller.
	Pending—You initiated the download, and the controller is waiting for its turn to download.
	Failed—The download failed. See *If a controller fails to download* (page 32).
	On Hold—Indicates you clicked **Hold** to stop a pending download.

- Click in the upper left-hand corner to view a log of activity on the **Devices** page in the current session. **Copy to Clipboard** lets you copy the text to paste it into another application.

Status messages

On the WebCTRL® **Network** tree, you can select a router, network, site, or the system to view the status of controllers. On the **Devices** page, the **Status** column shows a description of the controller's current state. Hold your cursor over that description to see hover text with a more detailed description.

If multiple conditions exist, the WebCTRL® interface displays the message with the highest priority.

The table below shows all possible messages. The message color indicates the following:

Black—In process
Red—An error occurred
Blue—Requires action from the user

Status column message	Hover text message	Notes
Black messages:		
Downloading	The controller is downloading, communications may be disabled.	
Pending	This controller is waiting to be processed.	
Processing clipping	Clipping operation is in progress. Do not make changes as they may corrupt your system.	
Uploading	The controller is uploading, communications may be disabled.	
Red messages:		
Communications Error	Cannot communicate with this controller.	
Connection Disabled	The connection for this controller has been disabled.	Occurs if someone stopped the connection. This includes stopping a connection, using the **No Connect** connection, or running WebCTRL Design Server.
Connection Error	The connection for this controller failed to start.	Occurs if the connection is misconfigured or failed to start.
Download Failed	(Message depends on the cause of the failure.)	
Error	An unknown error has occurred.	
Missing Files	Upload failed. Server is missing source files.	
Not Uploadable	This controller is not configured for content upload.	Occurs if you attempt to upload a controller with a pre-4.x driver.
Out of Service	This controller is out of service.	**Out of Service** is checked on the controller's Properties page.
Unsupported controller	Controller does not support content upload.	
Blue messages:		
Controller Replaced	This controller has been replaced by another controller of the same type in the field.	4.x driver only
Download All Content	Please download all content to the controller.	

Status column message	Hover text message	Notes
Download Parameters	To download parameters, highlight row and select "Parameters" from the Download Action menu and click "Download".	
Download Schedule	To download schedules, highlight row and select "Schedules" from the Download Action menu and click "Download".	
Driver Parameter Mismatch	Driver parameter differences detected. Upload parameters from the controller or download parameters to the controller.	
Parameter Mismatch	Control Program parameter differences detected. Upload parameters from the controller or download parameters to the controller.	See *Handling parameter mismatches* (page 36).
Program Mismatch	Content differences detected. Upload all content from the controller or download all content to the controller.	4.x or later driver
Unprogrammed controller	This is a programmable controller. To add control programs, click on the "Add Control Program" button at the top of the screen.	
Upload All Content	Please upload all content from the controller.	

General messages:	
✓	This controller is ok.
Cancelled	The last operation on this controller was cancelled.

Handling parameter mismatches

A parameter mismatch occurs when a value in a controller does not match the value in the WebCTRL Server application. This can be a driver or control program value.

Use either of the following methods to handle mismatches in your system.

- Method 1: Check **Always resolve parameters on mismatch** on the **System Settings** > **Communications** tab to have the WebCTRL® application automatically upload if a value was changed in the controller or automatically download if a value was changed in the WebCTRL® interface.

- Method 2: Uncheck **Always resolve parameters on mismatch** so that you can evaluate a mismatch to determine the correct value.

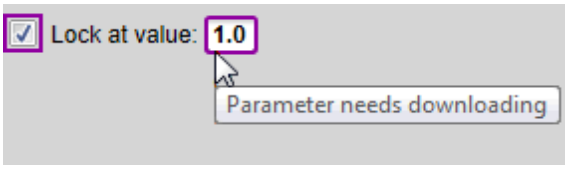
To find mismatches in your system

If your system uses Method 2, you can find mismatches in the following places:

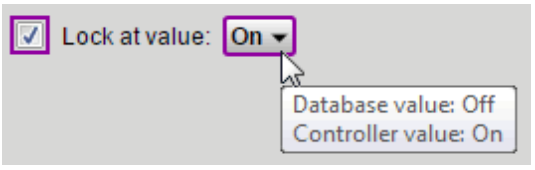
- The **Devices** page > **Manage** tab > **Status** column will show **Parameter Mismatch.**
- The **Properties** page for a controller, driver, control program, or point will show one of the following red messages at the top of the page stating:

  Control Program parameter differences detected.
  Driver parameter differences detected.
  Parameter download required.

  The value that has a discrepancy will appear with a purple box around it. Hover your cursor over the field to see:



or



- Go to **Reports** > **Equipment** > **Parameter Mismatch**, and then click **Run** to get a report of any existing mismatches in your system.

NOTE The **Downloads** page > **Tasks** column will show **Resolve Parameters** for any mismatches that your system discovered in the 3 places listed above.

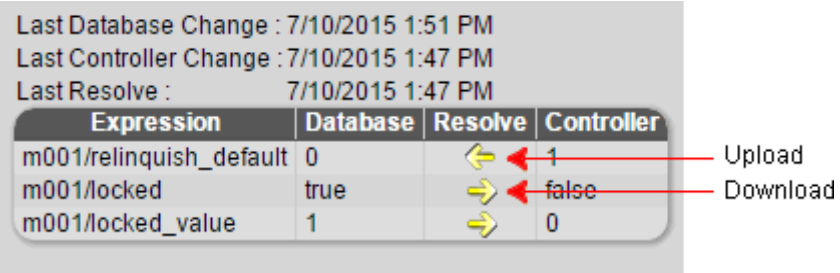
To resolve a mismatch

1 Go to one of the following:

- **Devices** page - Click the **Parameter Mismatch** link
- **Properties** page that shows one of the red messages above

2 Click one of the following:

- **Resolve** to let the WebCTRL® application download changes made in the WebCTRL® interface or upload changes made in the controller. Click the **Details** button to see what the discrepancy is and whether **Resolve** will download or upload parameters. See NOTE below.



- **Upload** to upload the parameters from the controller to the WebCTRL® application
- **Download** to download the parameters from the WebCTRL® application to the controller

NOTE On the **Devices** page with **Show Control Programs** unchecked, if a controller has simultaneous mismatches in the driver and control program, clicking **Details** will show that a control program mismatch exists but it will only show details for the driver mismatch. You must go to the control program in the tree to see details of that mismatch. However, clicking **Resolve** will resolve both mismatches.

Setpoints

Use setpoints to set temperature values that control the HVAC equipment. The WebCTRL® interface shows the color green when a zone is within the desired temperature range determined by the heating and cooling setpoints.

- **Programmed setpoints** are set and changed by operators. See *To change programmed setpoints* (page 38).
- **Effective setpoints** reflect the impact of other system conditions on the programmed setpoints, such as setpoint adjustments, demand reduction adjustments, and hysteresis. Effective setpoints control the equipment.

Besides manually adjusting setpoints, you can use the following *cost-saving strategies* (page 162) to adjust setpoints automatically:

- Optimal Start
- Demand Control
- Setpoint Optimization

To change programmed setpoints

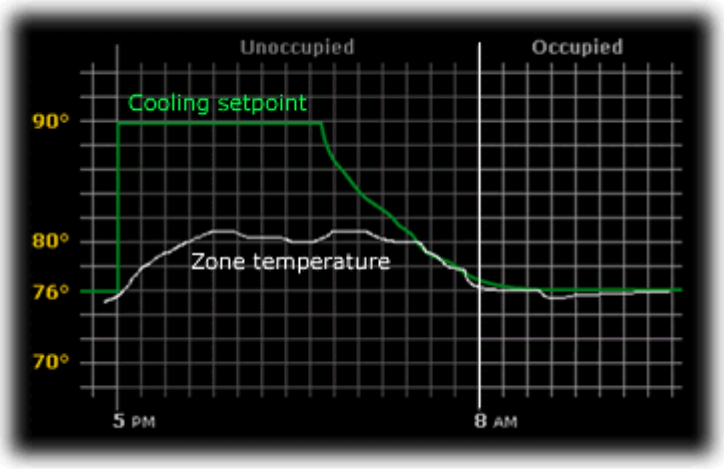
1. Navigate to a setpoint control in one of the following places:
   - The zone temperature section of a **Properties** page
   - The setpoint microblock pop-up on a **Logic** page
   - A **Graphics** page (Click a setpoint trend graph control to access the editable setpoint bar.)
2. On a programmed setpoint bar, click the segment or the gap between segments you want to change.
3. Type new values in the **Heating** and **Cooling** fields.

   TIP You can click and drag a segment or a gap between segments to change setpoints.
4. Click **Accept**.

Optimal Start

Optimal Start gradually moves the unoccupied setpoints toward the occupied setpoints as the occupied time approaches. The actual equation that a controller uses to calculate Optimal Start is nonlinear. An approximation of the equation is shown below.

$$\text{calculated capacity} = \frac{\text{design temp} - \text{OAT}}{\text{design temp} - 65°} \times \text{capacity at } 65°$$



Refining Optimal Start saves energy in the following ways:

- Removing guesswork from preheating or precooling zones
- Ensuring that zones reach the ideal comfort range just as people arrive
- Preventing equipment from running unnecessarily during unoccupied periods

You can adjust the Optimal Start routine in the control program's setpoint microblock.

1. On the **Geographic** tree, select the equipment that you want to change.
2. Click **Properties**.

3 Adjust the following fields located below the setpoint graph.

Field	Notes
Heating Capacity **Cooling Capacity**	The maximum rate (in °F/hr) that the zone temperature could be changed by heating or cooling if the outside temperature were 65°F. For example, if it takes 2 hours for a zone to warm up from 65°F to 72°F, the heating capacity is 3.5°F/hr **NOTE** Use 5°/hr as a starting point if you are unsure of actual capacities.
Heating Design Temp **Cooling Design Temp**	The most extreme outside winter and summer temperatures at which the equipment must run 100% of the time to maintain the zone temperature at a comfortable level. ASHRAE determines design temperatures based on the geographic location of the building.

NOTE A Setpoint microblock with Learning Adaptive Optimal Start functionality automatically adjusts the heating and cooling capacities to optimize efficiency.

Learning Adaptive Optimal Start

If you are using the Learning Adaptive Optimal Start feature and a zone does not reach the ideal temperature range by the time occupancy begins or reaches it too soon, then the heating or cooling capacities of the equipment are automatically adjusted up or down for the next unoccupied period.

When the Learning Adaptive Optimal Start routine runs, adjustments are made based on the color that is achieved when occupancy begins. Adjustment amounts are defined for thermographic colors in the control program's setpoint microblock.

For example, the heating capacity for a zone is 5° per hour. When the zone becomes occupied, the zone temperature is 1° below the occupied setpoint, indicating a need for additional heat. Because the zone temperature was low by 1°, the learned heating capacity will be decreased by the Less than Heating setpoint value. If the value is 0.06, the learned heating capacity will be adjusted to 4.94° for the next optimal start period. The setpoint adjustment will begin sooner in the next unoccupied period.

If you need to change the adjustment values in the Learning Adaptive Optimal Start routine:

1 On the **Geographic** tree, select the equipment that you want to change.

2 Click **Properties**.

3 Adjust the color fields between the **Zone Setpoints** graph and the **Effective Setpoints** graph.

CAUTION When using Learning Adaptive Optimal Start, be sure that all equipment is properly maintained so that your system does not “learn” to compensate for dirty filters or loose fan belts.

TIP After your system has run for at least a year, you may want to turn off learning in your control program, and change the **Heating Capacity** and **Cooling Capacity** in your control program to match the learned heating or cooling capacity shown on the Properties page.

Fields	Notes
Color fields	The amount of adjustment the system makes for the color that is achieved at the beginning of occupancy.
Learned cooling and heating capacity	The rate (in °F/hr) that the zone temperature can change by heating or cooling at an outside temperature of 65°F.
Actual or adjusted capacity	The actual heating or cooling capacity of the equipment at an outside temperature of 65°F.

Demand Control

Demand Control is a cost-saving strategy that saves energy while maintaining comfort in the following ways:

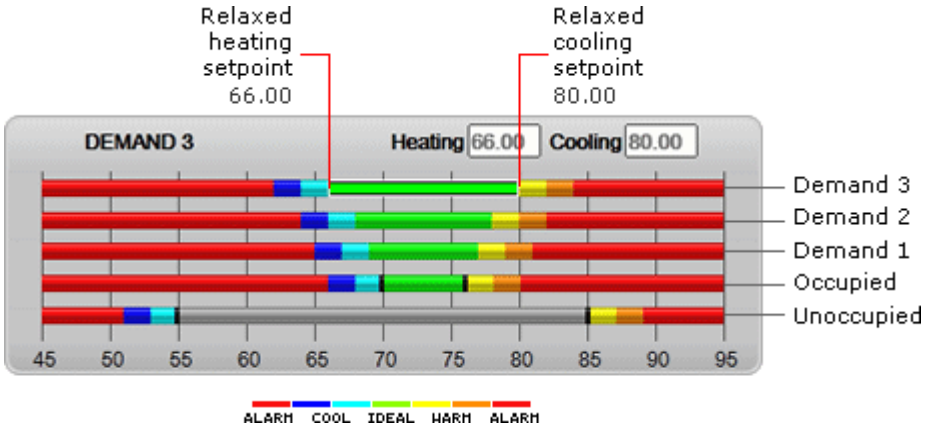
- Controlling energy use to avoid peak demand, ratchet, or time of use utility charges
- Maintaining ventilation at relaxed setpoints rather than shutting down equipment (as with load shedding or duty cycling)

Before you can use Demand Control effectively, you must:

- Obtain details regarding past energy usage and peak demand, ratchet, and time of use charges from your energy provider.
- Understand the demand profiles of the zones you are controlling.

Demand Control can be customized at the zone level. For example, you may relax the setpoints in some zones, like break rooms and closets, by a few degrees, but you may not want to relax setpoints in computer rooms at all.

A Setpoint microblock that has the **Demand Limiting** enabled uses a demand control strategy to conserve energy by relaxing setpoints as the demand level rises. In the EIKON® application, you define the amount that setpoints will be adjusted or relaxed based on the demand level.



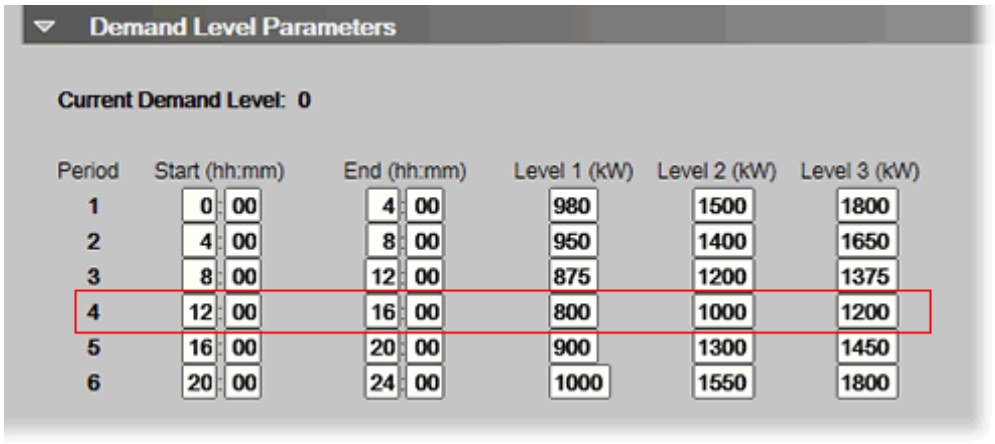
To define Demand Control properties

1. On the **Geographic** or **Network** tree, select the electric meter.
2. On the **Properties** page, expand the **Demand Level Parameters** section.
3. Type the **Start** and **End** time to define the time period that you want demand control to be in effect for this zone.

4 Type kilowatts per hour (kW/hr) in the **Level** columns to define the amount of power that the demand must exceed before the WebCTRL® system calls for a higher demand level.

NOTE Levels are defined in the electric meter control program in the EIKON® application. You can test the Demand Levels by locking the meter to a value.

In the example below, during Period 4, defined as 12:00 (noon) to 16:00 (4:00 p.m.), if the demand exceeds 800 kW/hr, the WebCTRL® system will use Demand Level 1 setpoints. If the demand exceeds 1000 kW/hr, the WebCTRL® system will use Demand Level 2 level setpoints and so on.



Setpoint Optimization

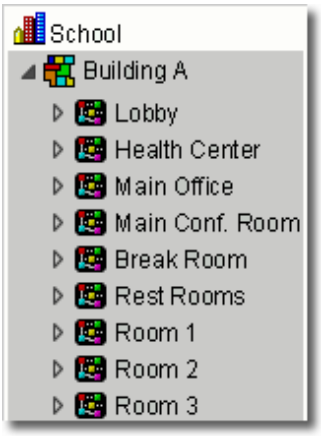
Setpoint Optimization, also known as Trim and Respond, saves energy by calculating the setpoint of a piece of equipment based on the number of heating or cooling requests it receives from other equipment.

You must put a Setpoint Optimization microblock in a control program to receive Total, Average, Minimum, or Maximum microblock outputs from linked equipment.

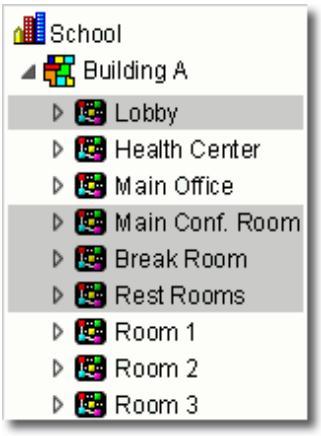
Schedules

Using schedules, your equipment can maintain one set of setpoints during occupied periods to provide comfort, and it can maintain a different set of setpoints during unoccupied periods to reduce energy consumption. Schedules are a WebCTRL® system's most effective *cost-saving strategy* (page 162).

You can apply a schedule to a tree item or to a group of tree items.



When you apply a schedule to a tree item, the schedule affects equipment at and below the area or equipment where the schedule was added.



When you apply a schedule to a schedule group, the schedule affects all pieces of equipment in the group.

For example, a school board meets every third Tuesday of the month and uses the lobby, main conference room, break room, and restrooms. You can create a schedule group to control these different areas with a single schedule.

NOTES

- When multiple schedules affect a tree item, the net result is the *Effective schedule* (page 47).
- Do not include preheating or precooling time in your schedules. *Optimal Start* (page 38), another cost-saving strategy, automatically calculates and controls precise preheating and precooling routines.
- If you are using hierarchical servers, when you add or change a schedule on the parent server, the schedule is automatically downloaded to the corresponding location on the child server(s).
- If your system has no need to run schedules, you can turn off this feature. First, delete any existing schedules. Then go to the System Settings > *General tab* (page 181), and check the box **Disable Schedules feature**.

To view schedules

1. Select a **Geographic** tree item.
2. Click **Schedules**, then the **View** tab.
3. Optional: Click a white **Effective** bar to view all the schedules that contribute to the resulting schedule. If the item has multiple schedules, the schedule closest to the **Effective** bar has the highest priority. You set a schedule's priority when you create the schedule.

NOTES

- You can display icons and hover text on the **Geographic** tree that show where schedules have been created. See *Tree icons and hover text* (page 10).
- You can also view schedules on the following detailed, printable schedule reports. These reports are accessible from the Schedules page **Reports** tab or from the **Reports** button drop-down menu.

This report...	allows you to...
Schedule Instances	Find every schedule with its location that is entered at and below a selected tree item. This report can help you discover newly added and conflicting schedules.
Effective Schedules	View all equipment that may be scheduled and the net result of all schedules in effect for a selected date and time. See *Effective schedules* (page 47).

Setting up schedules

To apply a schedule to equipment

WebCTRL® schedules are typically based on zone occupancy. See *Using schedule categories* (page 49) if you want to create a schedule based on conditions other than occupancy.

1. On the **Geographic** tree, select the area or equipment you want to schedule.
2. Select **Schedules** > **Configure** tab.
3. Click **Add**.
4. Select a **Priority**. A schedule's priority determines whether affected zones will use occupied or unoccupied setpoints.

Select...	For...
Normal	A typical occupied period
Holiday	An unoccupied period that overrides a Normal schedule
Override	An occupied period that overrides a Holiday schedule

5. Select a **Type**. See table below.
6. Type a schedule name in the **Description** field (50 characters maximum).
7. Enter desired values in the fields below **Description**.

8 On the graph, change a time segment's **Start** and **End** times by doing one of the following:
   - Click the segment, then type the times in the **Start** and **End** fields.
   - Click and drag either end of the segment or the entire segment.

9 Optional: Click **Add Time Period** to add one or more segments to the schedule. Or, select a segment and click **Delete Time Period** to delete that segment.

10 Click **Accept**.

Select this Type...	To use the schedule...
Weekly	Every week on the specified days
Date	On a single, specified date
Date Range	Between 2 specified dates
Date List	On multiple, specified dates
Wildcard	For a repeating pattern (For example, the second Tuesday of every month) **NOTE** Wildcard schedules do not work with Automated Logic® legacy equipment. The WebCTRL® interface will indicate if you apply a schedule to legacy equipment.
Continuous	Continuously between 2 specified dates/times
Dated Weekly	On specified weekdays between a start date and an end date (for example, the summer break in the school year) **NOTE** To use a Dated Weekly schedule with an ExecB controller, you must use the 1.71:032 (or later) ExecB driver.

NOTES

- To automatically download all schedules that you create or change, go to *My Setting*s (page 156) and check **Automatically download schedules as you create them**. If you want to manually download schedules, uncheck **Automatically download...** and then see *Downloading system changes to controllers* (page 30).
- When you apply a schedule to an item on the **Geographic** tree, the schedule affects that item and all children of that item. If you do not want an item to be affected by schedules from a higher level, check **Ignore Schedules above this level** on the **Schedules** > **Configure** tab.

To apply a schedule to a group of items

You must create a group, then add members (areas, equipment, or other groups) to the group before you can apply a schedule to it.

1 On the **Schedule Groups** tree, select **Scheduling Groups**.

   Optional: If you have created folders to organize your groups, select the appropriate folder. See "To organize groups using folders" below.

2 Click **Add Group**.

3 Type a name for the new schedule group in the **Name** field.

4 Optional: Change the default **Reference name**. A group's reference name must be unique throughout the system.

5 Click **Accept**.

6 Click **Add Members to Group**.

7 On the **Members** page, select the areas, equipment, or other groups that you want to add to the group from the tree on the right. Use **Ctrl+click**, **Shift+click**, or both to select multiple items.

8 Click **Add**.

TIP Use the **Raise** and **Lower** buttons to reorder items in the **Members** list. Changing the order is for your viewing convenience and does not affect the system.

9 Click **Accept**.

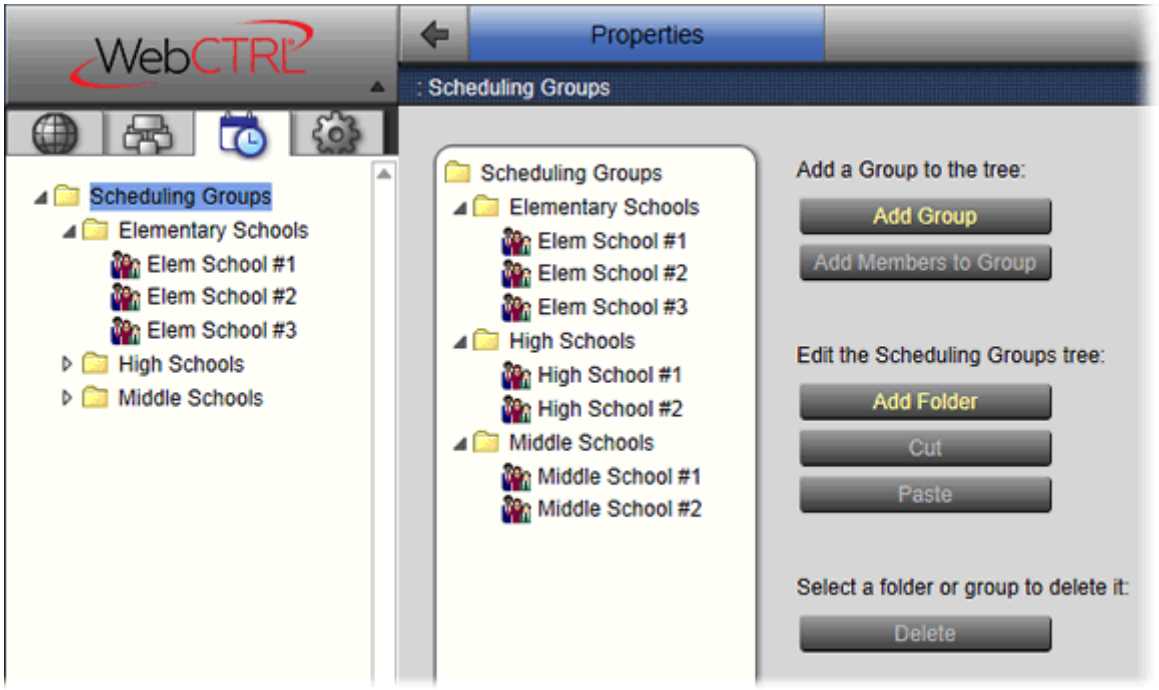
10 Click the **Schedules** button, then **Configure**.

11 Add a schedule to the group. See *To apply a schedule to equipment* (page 44).

NOTE When using hierarchical servers, you can place a server link in a schedule group on the parent server. This automatically creates a schedule group with the same name on the child server(s). This group includes only the top-most area node of the child server. However, from the child server you can edit the group to add other members.

To organize groups using folders

You can create folders and sort your groups into them to organize the **Schedule Groups** tree. For example, a large school system that has a group for each school may want to create an Elementary School folder, a Middle School folder, and a High School folder, and put the appropriate groups in each folder.



To create folders and add groups to them:

1 On the **Schedule Groups** tree, select **Scheduling Groups**.

2 Click **Add Folder**.

3 Type a name for the new folder in the **Name** field.

4 Optional: Change the default **Reference name**.

5 Click **Accept**.

6 Repeat steps 1–4 for each folder that you want to add.

7 Do one of the following to add a group to a folder:

- If you have already created the group, drag and drop it into the appropriate folder in the tree on the **Scheduling Groups** page, then click **Accept**.
- Select the folder in the tree on the **Scheduling Groups** page, then click **Add Group** to add a new group inside the folder.

NOTE You can also add a folder to a folder, or drag and drop a folder into another folder.

To edit or delete a schedule

1 Do one of the following:

- On the **Geographic** tree, select the tree item where the schedule was defined, then select **Schedules** > **Configure** tab.
- On the **Schedule Groups** tree, expand **Scheduling Groups**, then select the group that has the schedule you want to edit or delete.

2 Select the schedule you want to edit or delete.

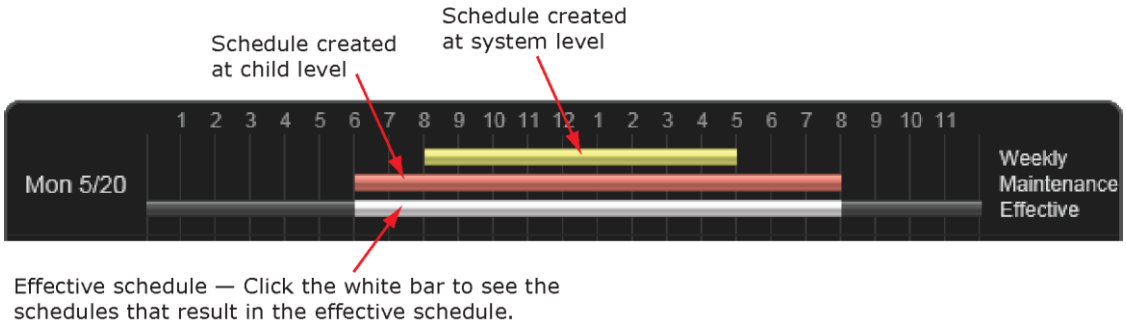
3 Edit the fields you want to change or click **Delete**.

4 Click **Accept**.

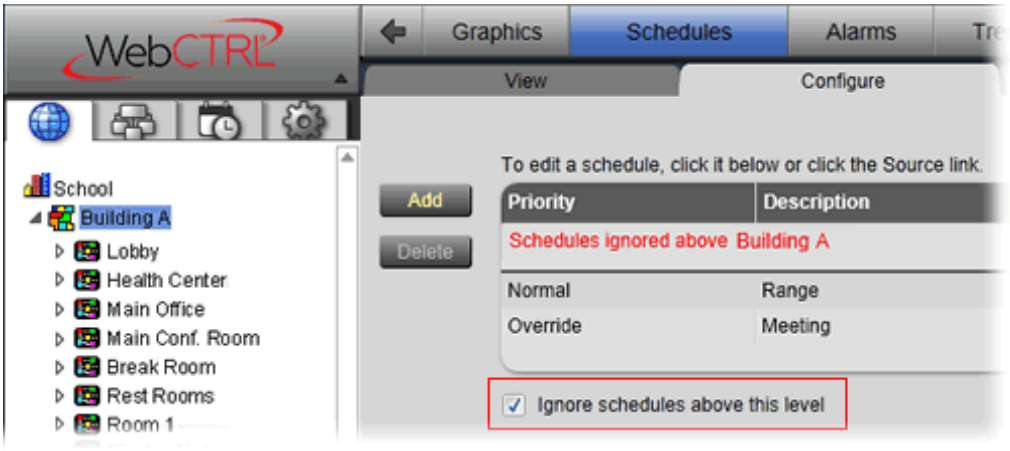
NOTE Expired dated schedules are automatically deleted from the database at 3:30 AM every day. But expired schedules remain in the controller until the next time schedules are downloaded to the controller. You can change the deletion time on the **Scheduled Tasks** tab of the *System Settings* (page 181) page.

Effective schedules

The effective schedule that you see on the **Schedules** > **View** tab can be the result of multiple overlapping schedules.



The following schedule features can influence an item's effective schedule.

Feature	Description
Hierarchy	A schedule applied to an item on the WebCTRL® tree affects that item and all of its children. A child item's effective schedule could be the result of multiple schedules applied at different levels above it. To change a child item's effective schedule: • Add a schedule at the child that overrides the current schedule. See the *Priority* feature below. • Set the child to ignore the parent schedules. To do this, select the child item on the tree, then go to **Schedules** > **Configure**. Select the schedule, then click **Ignore Schedules above this level**. You can then add a different schedule for the child.  Any schedule change that you make to an item affects it and all of its children.
Priority	You must assign one of the following priorities to every schedule. **Use...** / **For...** **Normal** — A typical occupied period **Holiday** — An unoccupied period that overrides a Normal schedule **Override** — An occupied period that overrides a Holiday time **EXAMPLE** For a school, you define: • A **Normal** schedule that has it occupied every Monday–Friday, 6 am–5 pm • A **Holiday** (unoccupied) schedule for the week of Spring Break • An **Override** schedule on the first day of Spring Break from 9 am–1 pm for the cafeteria only where a teacher's meeting will be held.

Feature	Description
Type	You must assign one of the following types to every schedule.* **Weekly** **Wildcard** **Date** **Continuous** **Date Range** **Dated Weekly** **Date List** See *To apply a schedule to equipment* (page 44) for a description of each type. **EXAMPLE** For a school, you define the following 3 schedules: • Full calendar year: Normal, Weekly, Monday–Friday, 6am–5pm • Summer months: Holiday, Continuous, 12am June 1st –11:59pm August 31st • Work days in summer months: Override, Dated Weekly, Monday–Thursday, 9am–2pm * If you do not see one of the types listed above, on the **System Configuration** tree, select **Categories** > **Schedule**. Select the **Occupancy** category, then the **Priority**. Under **Schedule Types**, select the missing type, then click **Accept**.

Using the **Priority** and **Type** options, you can often accomplish the effective schedule you need in several different ways. For example, the effective schedule resulting from the 3 schedules described above for **Type** could also be accomplished with the following schedules:

School year: Normal, Dated Weekly, Monday–Friday, September 1st–May 31st, 6am–5pm

Summer months: Normal, Dated Weekly, Monday–Thursday, June 1st–August 31st, 9am–2pm

Using schedule categories

Occupancy is the only default schedule category. It is a binary schedule category that allows a zone or piece of equipment to be defined as On when a space is occupied and Off when it is unoccupied.

You can add custom schedule categories to handle other conditions if the equipment's control program includes a Time Clock microblock. For example, you can add a multi-state schedule category to control lights: on during work hours, off at night, and dim for janitorial work.

Creating a custom schedule category

1. Create the custom schedule category in the EIKON® application. See "To use custom alarm and schedule categories" in EIKON® Help.
2. In the EIKON® application, select the new category from the **Schedule Category** droplist in a the schedule microblock.
3. Create the same custom schedule category in the WebCTRL® interface. The **Reference Name** must be identical to the category's name in the EIKON® application. See "To add a custom schedule category in the WebCTRL® interface" below.

To add a custom schedule category in the WebCTRL® interface

TIP Study the default Occupancy category to understand the various properties you need to set when adding a new schedule category.

PREREQUISITES

- Add the custom schedule category in the EIKON® application. See "To use custom alarm and schedule categories" in EIKON® Help.
- In the EIKON® application, select the new category from the **Schedule Category** droplist in a Time Clock microblock.

1. On the **System Configuration** tree, click ▷ to the left of the **Categories** folder, then click **Schedule**.
2. Click **Add**.
3. Enter values or add items for the fields in each section of the page. See table below.

   NOTE The fields that you see depend on selections you made in previous sections.
4. Click **Accept**.

Field	Notes
Category Name	The name used in the WebCTRL® interface
Reference Name	• Must be unique in the database, be lowercase, and not contain any spaces. • This name must be identical to the name of the custom schedule category that you added in the EIKON® application. • Do not use **occupancy** as the reference name.
Allowed Type	Replace **Undefined** with one of the following: • **Boolean**: binary (on/off, true/false) condition • **Multi State**: list of integer-defined states. For example, 1=off, 2=on, 3=dim
Default Value	Displays what schedule value is in effect for times not specified by the schedule. To set this value, in the **Allowed Values** table, select the value that you want to use as the default, then click the **Make Default OK** button.
Allowed Values	If you selected **Boolean** above, select **True Value** or **False Value**. If you selected **Multi State**, click the **Add Value** button to create each schedule state.
Allowed Value Description	The name used in the WebCTRL® interface.
Pattern	Type `none`, `dark`, or `/_common/lvl5/graphics/patterns/xxx.gif`, where xxx.gif is any .gif file in the **webroot_common\lvl5\graphics\patterns** folder. 

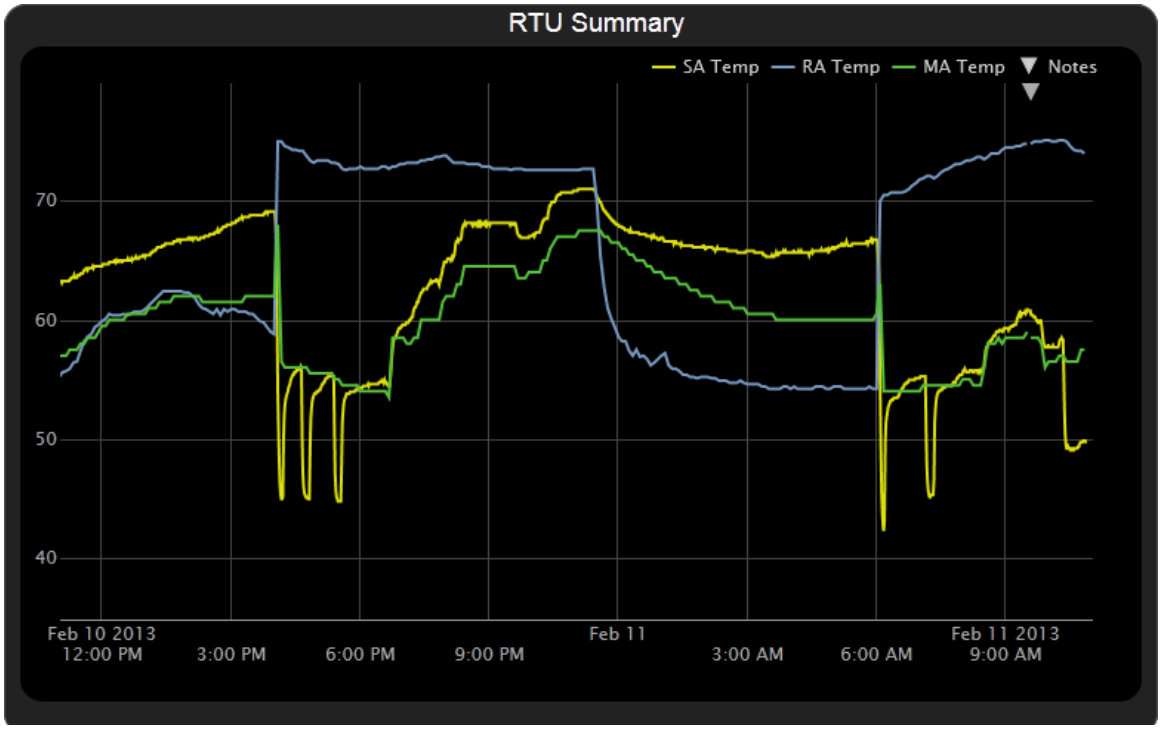
Field	Notes
Priority Description	The name used in the WebCTRL® interface.
Index	Represents this priority's relative level of importance within this schedule category. The WebCTRL® application automatically assigns the priority index, which is zero for the first priority level. The higher the index value, the higher the priority of the schedule type relative to other schedules. BACnet limits the number of priority indices to 16.
Color	Color of the schedule bar on the **Schedules** page.
Schedule Types	The **Weekly** type is available for Index 0 only. The **Allow Wildcards** and **Partial Day** options affect all selected schedule types.
Default Schedule	The default schedule used when this category is selected. Create the schedule by adding segments for each state until every hour in the 24-hour schedule is covered by a segment. **EXCEPTION** If you selected **Partial Day** in the **Schedule Types** field, you do not have to add segments for the entire 24-hour period.

To view, edit, or delete a schedule category

1. On the **System Configuration** tree, click ▷ to the left of the **Categories** folder, then click **Schedule**.
2. In the table, select the category you want to edit or delete.
3. Edit the fields or click **Delete**.
4. Click **Accept**.

Trends

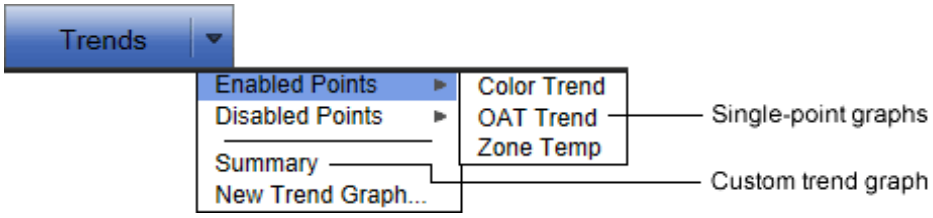
The WebCTRL® system can read and store equipment status values over time and then display this information in a trend graph to help you monitor the equipment's operation.



You can collect trend data for any point value in the WebCTRL® system. The controller reads point values at intervals that you define and then stores that data in the controller. A controller has limited memory for storing trend data, so you can set up historical trending to archive the trend data from the controller to the WebCTRL® database. A trend graph can display data from the controller and the database, or it can display only data stored in the database.

After you *set up the desired points for trend data collection* (page 52), you can:

- *View built-in trend graphs that show a single point* (page 54)
- *Create custom trend graphs with multiple points* (page 55)



To collect trend data for a point

Before you can see a point's trend graph, you must enable trending for that point and then define how

you want the controller to collect the point's data. This can be done in the EIKON® application or you can do it in the WebCTRL® interface using the instructions below.

NOTE I/O microblocks have trending capability built-in, and you enable trend logging in the I/O microblock. Any other microblock value must have a trend microblock attached in the control program, and you enable trend logging of the value in the trend microblock.

To set up a point's trending in the WebCTRL® interface:

1 On the **Geographic** tree, select the equipment that has the point you want to trend.
2 Click the **Trends** button drop-down arrow, select **Disabled Points**, then select the point.
3 On the **Enable/Disable** tab, check **Enable Trend Log**.
4 Enter information in the appropriate fields. See table below.
5 Click **Accept**.

TIP You can set up all trends for a piece of equipment at once on the **Trend Sources** tab of the equipment's **Properties** page.

Field	Notes
Sample every _:_:_ (hh:mm:ss)	Records the point's value at this interval. **NOTE** Set trend intervals for U line controllers to one minute or greater. U line controllers are designed to meet low end, high volume terminal control applications and are not suited to very short trend intervals.
Sample on COV (change of value)	Records the point's value only when the value changes by at least the amount of the **COV Increment**. **NOTE** Use this method for a binary point or for an analog point that has infrequent changes in value.
Max samples	The maximum number of samples that you want the controller to store. **CAUTION** Changing the value in **Max samples** will delete all of the point's trend samples currently stored in the controller. Click the **Store Trends Now** button before changing the value to transfer the trend data from the controller to the system database. **NOTES** • Trending consumes memory in the controller. The amount of memory available depends on the type of controller. Each trended point consumes 48 bytes of memory plus 10 bytes for each trend sample. Each trend microblock consumes 416 bytes of memory plus 10 bytes for each trend sample. • Click **Reset** to delete all samples currently stored in the controller.
The above sample and memory allocation fields together define trend data storage in the controller in terms of hours. **EXAMPLE** If you set these fields so that samples are collected every 5 minutes for a maximum of 120 samples, the controller will store 600 minutes (5 x 120) or 10 hours of trend data.	
Stop When Full	Check this field to stop trend sampling when the maximum number of samples is reached.
Enable trend log at specific times only	Collects trend data for the specific period of time you define in the **time** and **date** fields.

Field	Notes
Enable Trend Historian	Archives trend data to the system database.
Store Trends Now	Writes all trend data in the controller to the system database without having to enable trend historian.
Write to historian every __ trend samples	Writes all trend data in the controller to the system database each time the controller collects the number of samples that you enter in this field. This number must be greater than zero and less than the number entered in the field **Max samples**. The number of trends specified must be accumulated at least once before the historical trends can be viewed.
Trend samples accumulated since last notification	Shows the number of samples stored in the controller since data was last written to the database.
Last Record Written to Historian	Shows the number of trend samples that were last written to the database.
Keep historical trends for __ days	This is based on the date that the sample was read. Select the first option to use the system default that is defined on the **System Settings** > **General** tab. Select the second option to set a value for this trend only.
Delete	Deletes all trend samples stored in the database for the item selected on the **Geographic** tree.
BACnet Configuration	The **Object Name** is a unique alphanumeric string that defines the BACnet object. Although the **Object Name** field can be edited, it is not recommended. The **Notification Class** is set to 1 to receive alarms generated by Automated Logic® controllers.

NOTES

- You can use *Global Copy* (page 27) to copy trend properties to other pieces of equipment that use the same control program.
- Run a *Trend Usage report* (page 103) to view trend configurations.

Viewing a built-in, single-point trend graph

1 On the **Geographic** tree, select the equipment whose trend you want to view.

2 Click the **Trends** button drop-down arrow, select **Enabled Points**, and then select the graph you want to view.

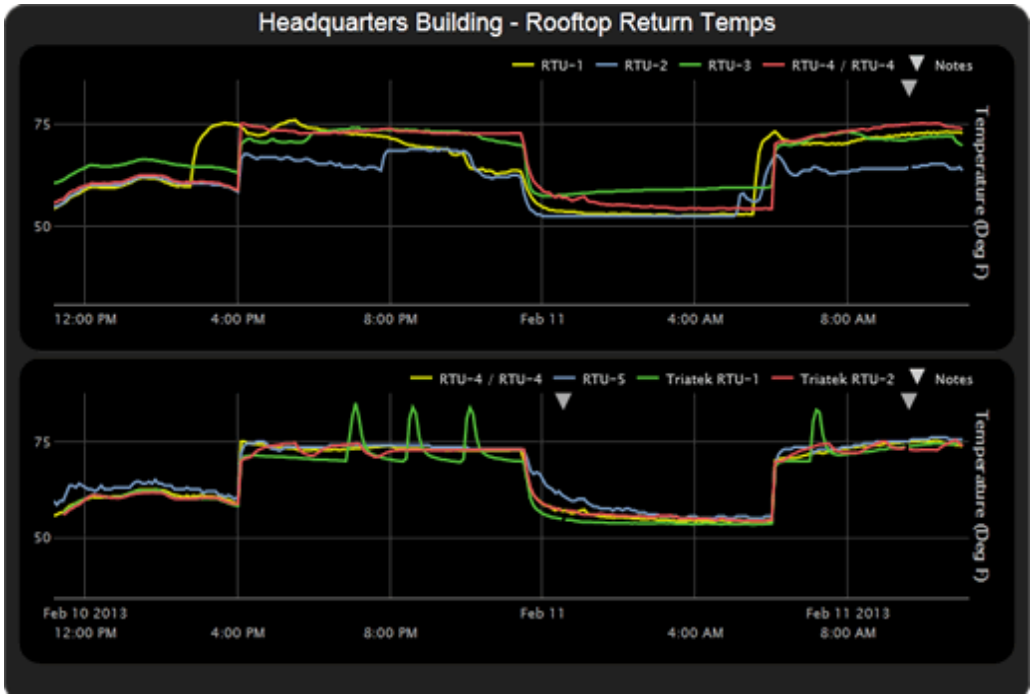
3 Select the **View** tab. See *Using trend graphs* (page 58).

NOTE On the **Configure** tab, you can:

- Enable/disable the grid.
- Set the time range for the X axis. For example, enter 7 days to see the data for the last week.
- Turn off autoscaling so that you can define a range for the Y-axis
- Type a Y-axis label that will appear on the right side of the graph.

Creating a custom trend graph

When creating a custom trend graph, you can select up to 16 points. If you select more than 4 points or points with different units, the WebCTRL® application splits the data into subgraphs. Each subgraph can show a maximum of 4 points with similar units.



NOTES

- You must enable trending for points that you want to include in the custom trend graph. See *To collect trend data for a point* (page 52).
- You can display icons and hover text on the **Geographic** tree that show where custom trend graphs were created. See *Tree icons and hover text* (page 10).

To create a custom trend graph

1 On the **Geographic** tree, select the area or equipment where you want to see the graph.

2 Click the **Trends** button drop-down arrow, then select **New Trend Graph**.

NOTE If the **Trends** button does not have a drop-down arrow, the **New Trend Graph** page is already displayed.

3 In the tree on the **New Trend Graph** page, use **Ctrl**+**click** or **Shift**+**click** to select the points (16 maximum) that you want to see on a graph.

NOTE The tree shows only points that have trending enabled. See *To collect trend data for a point* (page 52).

4 Click **Save**.

5 Optional: If your system has trend categories defined, you can select a **Category** for this trend. For more information on trend categories, see *Adding trend categories* (page 57).

6 Type a **Name** for the graph that will appear at the top of the graph and in the **Trends** button drop-down list.

7 Click **OK**.

8 Select:

- The **View** tab to see the custom trend graph. See *Using trend graphs* (page 58).
- The **Configure** tab to edit the trend graph. See *To edit a custom trend graph* (page 56).

To edit a custom trend graph

1 On the **Geographic** tree, select the area or equipment where you created the graph.

2 Select the **Trends** > **Configure** tab. On this page, you can:

- Change the name of the custom trend graph
- Enable/disable the grid
- Set the time range for the X axis
- Edit a subgraph's Y-axis label that will appear on the right side of the graph
- Turn off autoscaling so that you can define a range for the Y-axis
- Add/delete subgraphs (see instructions below)
- Add/delete points (see instructions below)
- Change a point's name on the graph
- Change a binary point's active/inactive text on the graph
- Click **Delete Trend Graph** to delete the entire custom trend graph

To add a subgraph to a custom trend graph

1 Click **Add** below the **Subgraphs** list.

2 Type a Y-axis label.

3 Click **Add** below the **Points** list.

4 Select a point in the **Data source** tree.

NOTE The tree shows only points that have trending enabled. See *To collect trend data for a point* (page 52).

5 Repeat steps 3 and 4 to add up to 4 points to the subgraph.

6 Click **Accept**.

NOTE To delete a subgraph, select it in the **Subgraphs** list, click **Delete** below the list, and then click **Accept**.

To add a point to a subgraph

1 Select the subgraph in the **Subgraphs** list.

2 Click **Add** below the **Points** list.

3 Select a point from the **Data source** tree.

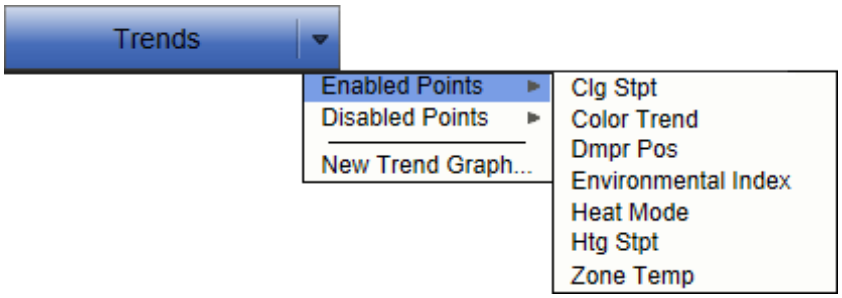
NOTE The tree shows only points that have trending enabled. See *To collect trend data for a point* (page 52).

4 Click **Accept**.

NOTE To delete a point, select the appropriate subgraph, select the point, click **Delete** below the **Points** list, and then click **Accept**.

Adding trend categories

A point trend graph is in the **Enabled** or **Disabled** category in the **Trends** button drop-down menu.



You can create additional categories for your custom trend graphs.

1 On the **System Configuration** tree, click ▷ to the left of **Categories**, then select **Trend**.

2 Click **Add**.

3 Type the **Category Name** and **Reference Name**.

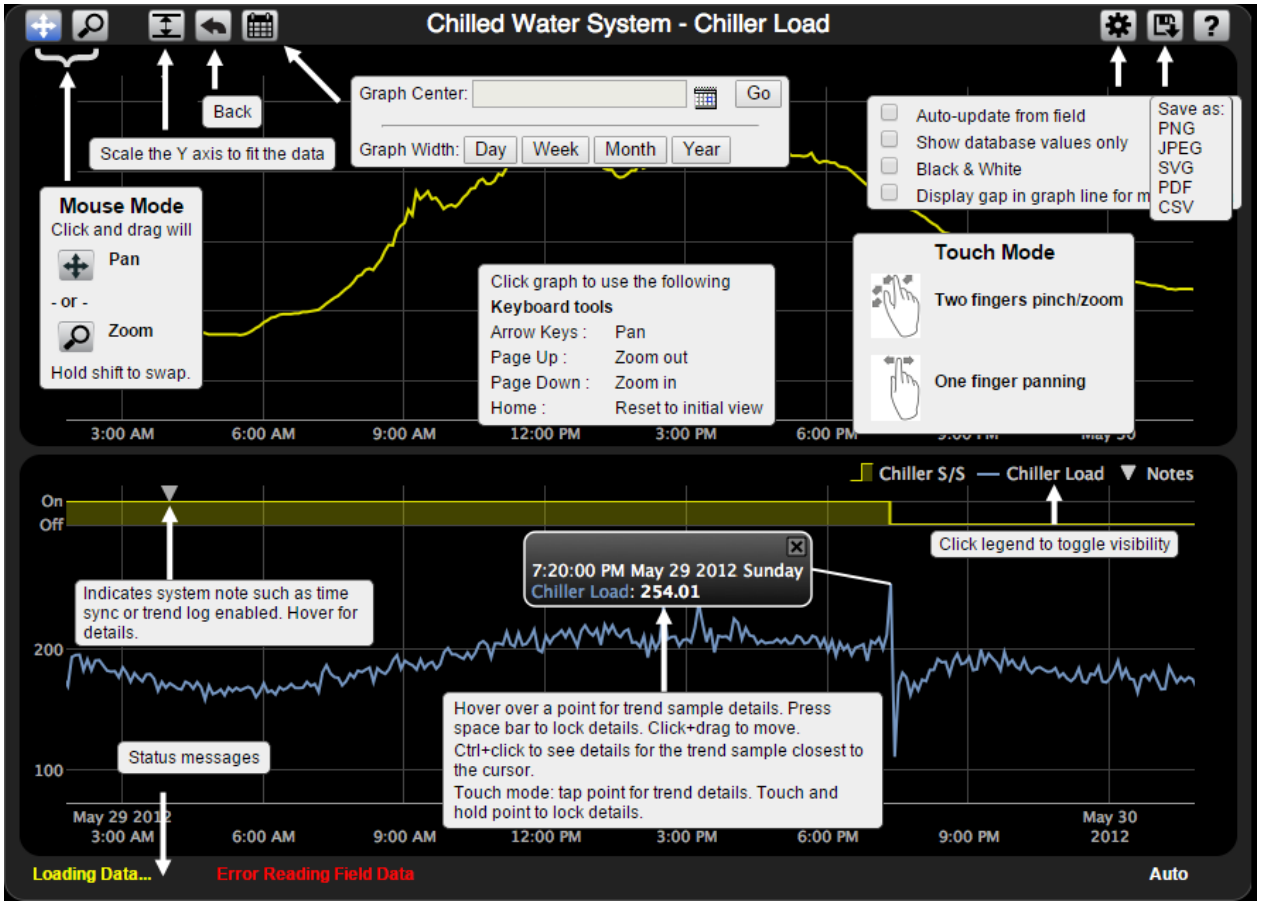
4 Optional: Select a privilege so that only operators with that privilege can access trends in the category.

5 Click **Accept**.

NOTES

- To edit a category, select the category, make your changes, then click **Accept**.
- To delete a category, select the category, click **Delete**, then click **Accept**.

Using trend graphs



NOTES

- A gray triangle at the top of a graph indicates a note from the system. Hover your cursor on the triangle to see which of the following occurred:
  - Equipment received a time synchronization from its network router or from the WebCTRL® application.
  - Trend Historian has been enabled or disabled.
  - Trend Log has been enabled or disabled.

The trend object ID of a third-party trend source has been changed. For information only, you do not need to do anything.

- Click  at the top of the WebCTRL® page to print the graph. You may need to set your printer's orientation to Landscape.
- Toolbar options are also accessible by right-clicking a trend graph.
- You can check **Display gap in graph line for missing data** on an individual trend graph page, or you can go to the *System Settings* > *General tab* (page 181) to set this for all future trend graphs.

To view trend data in a spreadsheet program

You can save trend data as csv data that you can open in a spreadsheet program such as Microsoft® Excel®.

1 On the **Trends** > **View** tab, select  > **Save as CSV data**.

2 Save the data (.zip file) wherever you want. The .zip file contains the following:
   - A .csv file for each trend source (point). The filenames match the point names.
   - A **Combined** folder containing a file with the combined data for all of the graph's trend sources.

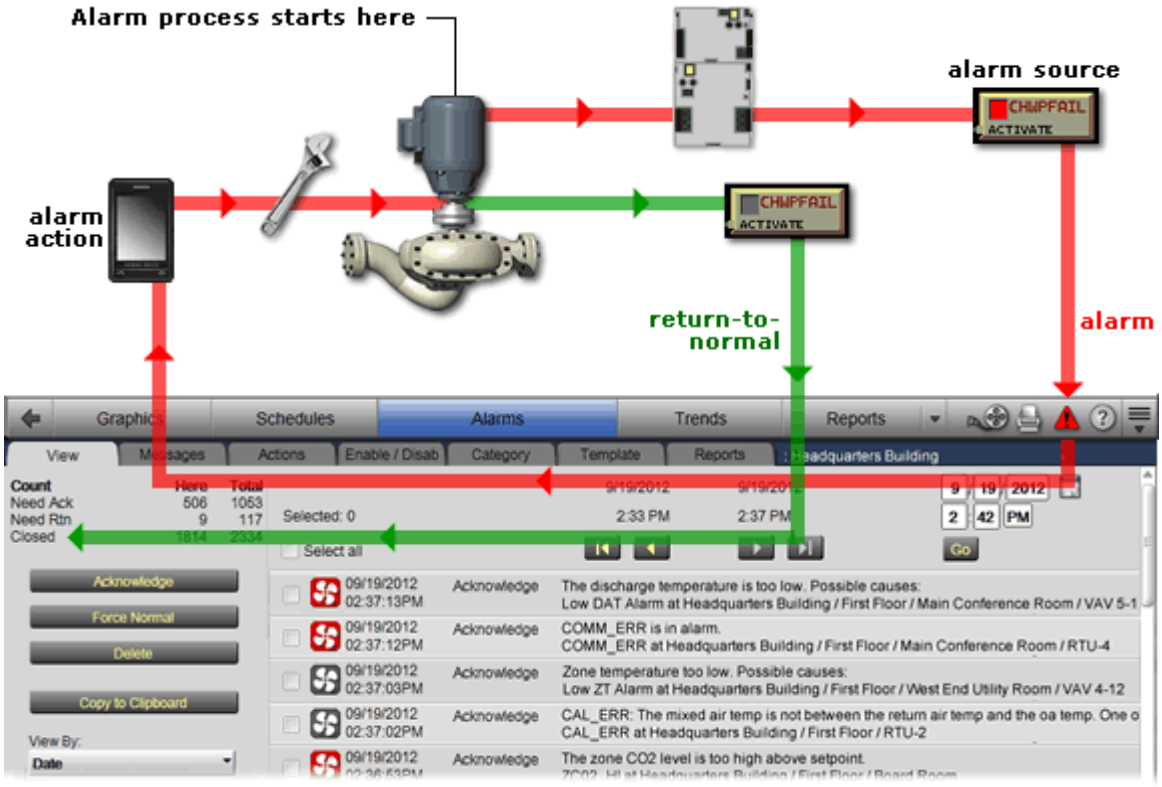
3 Open the .csv file in a spreadsheet program.

NOTES

- You will need to convert the data in the spreadsheet's **Time** column to a readable date/time format.
- If you use Microsoft® Excel® on a Mac and the converted date shows the wrong year, do the following:
  1. In Excel, go to **File** > **Options** > **Advanced**.
  2. Scroll down to the section **When calculating this workbook**, and then uncheck **Use 1904 date system**.

Alarms

An alarm is a message sent from an alarm source (usually a microblock in a control program) to the WebCTRL® application to notify you that certain conditions exist, such as a piece of equipment has stopped running or a temperature is too high. When the WebCTRL® application receives an alarm, it displays information about the alarm on the Alarms page. It can also perform alarm actions to inform personnel of the condition and to record information about the alarm. An alarm source can also send a return-to-normal message when the alarm condition returns to its normal state.



Alarm sources and the alarms they generate are assigned to categories, such as HVAC Critical or HVAC Maintenance, to help you work with related alarms.

The application engineer usually sets up alarm sources in the EIKON® application. In the WebCTRL® interface, you can:

- *View, troubleshoot, acknowledge, and delete alarms* (page 61)
- *Set up the alarm actions that the WebCTRL® application performs* (page 67)
- *Edit alarm sources that were set up in the EIKON® application or set up new alarm sources to generate alarms* (page 88)
- *Customize alarms by changing the category or message* (page 91)

NOTE Besides the alarms that you set up, the WebCTRL® application has built-in system and equipment alarms.

Viewing, troubleshooting, acknowledging, and deleting alarms

The WebCTRL® **Alarms** page displays alarms as they are received. If desired, an operator can set options on the **My Settings** page to have the WebCTRL® application play an audio file when an alarm is received.

An alarm's setup may require that it be acknowledged and/or the alarm condition returned to normal. The alarm, its return to normal, and any other alarms related to the incident are referred to as an alarm incident group. The WebCTRL® application closes an alarm incident group when all of the following have occurred:

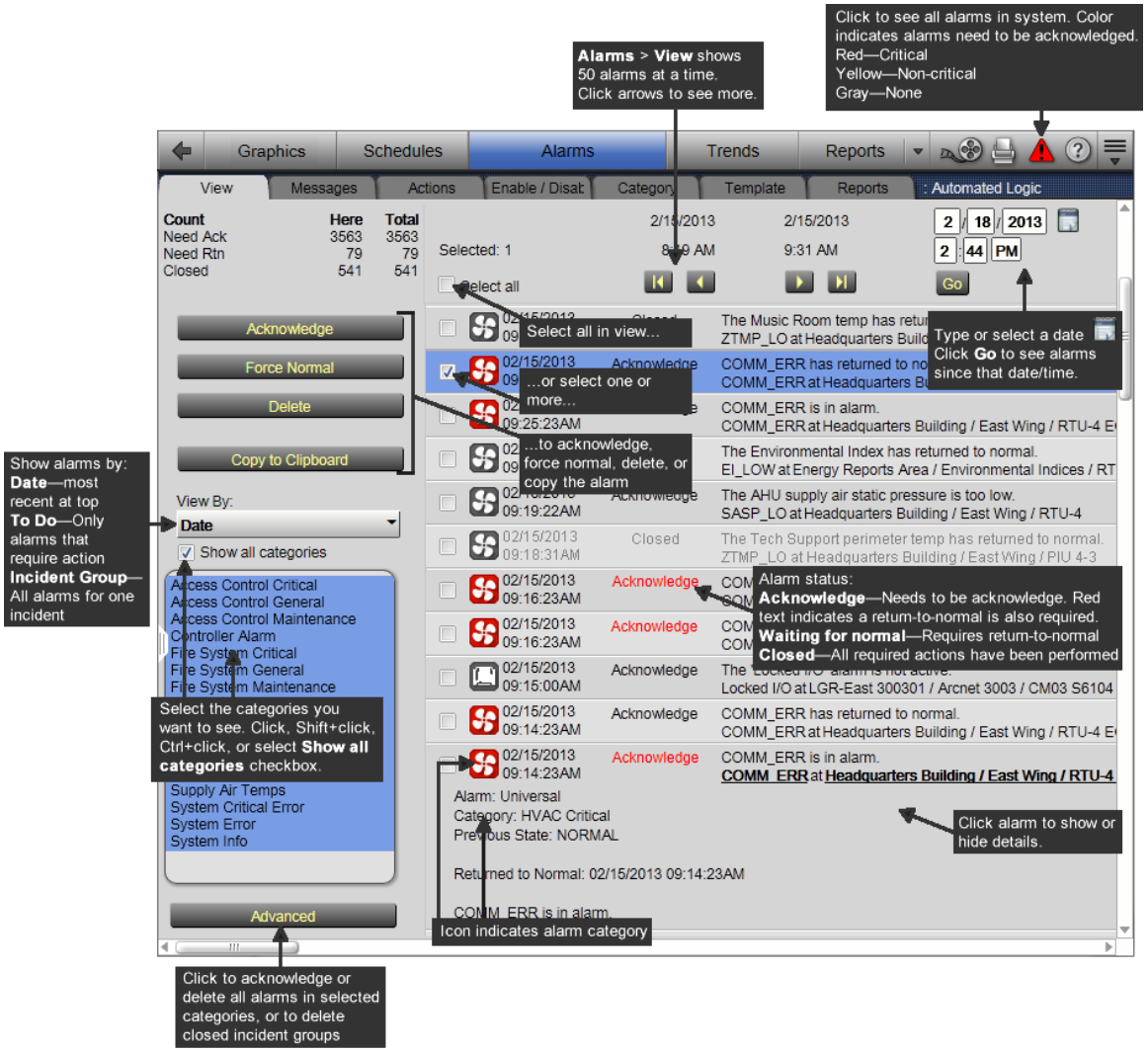
- You acknowledge the alarm (if required)
- The WebCTRL® application receives a return-to-normal (if required)
- The WebCTRL® application performs all alarm actions defined for the group

You should delete alarms from your system as they are closed because large quantities of stored alarms can reduce the efficiency of your system.

To view alarms in the WebCTRL® interface

- Click  at the top of the page to see all alarms in the system.

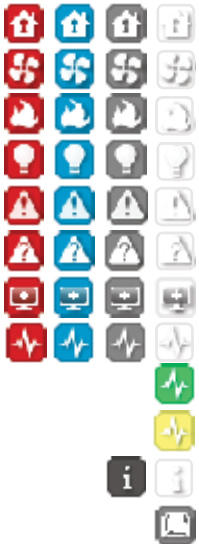
  or
- Click the **Alarms** button and then select an item on the navigation tree to see all alarms at and below that level.



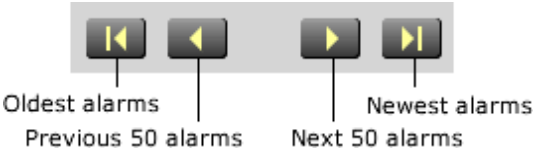
NOTES

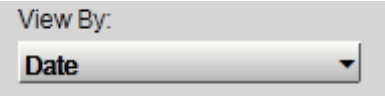
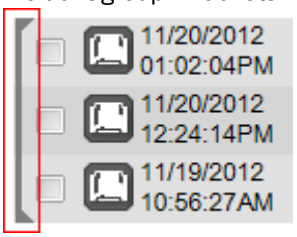
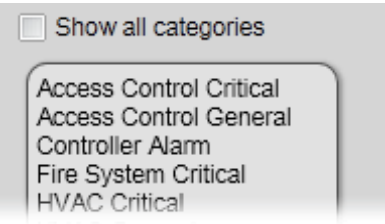
- The WebCTRL® tree can show 10 levels. If an alarm source is deeper than 10 levels, the alarm is reassigned to the system level.
- Alarms generated by the WebCTRL® application appear at the system level.
- Alarms generated by controllers appear at the system level on the **Geographic** tree, but in the network hierarchy on the **Network** tree.
- An alarm's details include a path to the alarm source. Each section of the path is a link to that location. For example, in the path **East Wing/RTU-4/SSP_LO**, East Wing links to the East Wing graphic, RTU-4 links to the equipment graphic, and SSP_LO links to the microblock's Properties page.

- You may see any of the following alarms icons in the WebCTRL® interface:

These icons...	Indicate...	Icon color indicates...
	Access control HVAC Fire system Lighting system General alarm Unknown System FDD FDD comfort FDD energy General message Controller alarm	Red = Critical Blue = Maintenance Gray = General Grayed out = Closed

To control which alarms you see

Use these tools...	To control the Alarms list
	Click the arrow buttons to display other alarms.
	Type a date and time or click  to select a date. Then click **Go** to show up to 50 alarms since that date/time. When finished, click  to display the 50 newest alarms or  to display the oldest 50 alarms.

Use these tools...	To control the Alarms list
	**Date–**Sorts list by date/time the alarms were generated with the most recent at the top. **To Do–**Shows only alarms that require one or more actions before they are closed. **Incident Group**–Sorts alarms by incident. For example, an alarm and its return-to-normal form an incident group. Brackets indicate a group. 
	Select the alarm categories that you want to see in the alarms list. Use **Ctrl+click**, **Shift+click**, or both to select multiple categories, or check **Show all categories**.

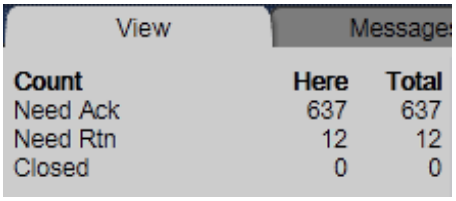
To troubleshoot an alarm

You can select an alarm's checkbox and then click  to open the **Alarms** time-lapse showing the 1-hour period in which the alarm occurred. You can step backward or forward through the time-lapse at 1-minute intervals to see what other alarms occurred at each minute during that hour. You can also go to the **Graphics** or **Trends** time-lapse to see what else happened when the alarm occurred. See *Time-lapse* (page 101) for information on this feature.

To acknowledge alarms

You must acknowledge alarms that have been set up to require acknowledgment. An alarm shows if it needs to be acknowledged.

The table in the upper left corner of the page shows how many alarms need acknowledgment at the current location (**Here**) and in the entire system (**Total**). This table also shows how many alarms need a return-to-normal and how many are closed.



Count	Here	Total
Need Ack	637	637
Need Rtn	12	12
Closed	0	0

To acknowledge an alarm

1 On the **Alarms** page > **View** tab, select the checkbox of an alarm that shows **Acknowledge**.

2 Click the **Acknowledge** button.

To acknowledge all alarms in the alarms database for selected categories

1 On the **Alarms** page > **View** tab in the left-hand column, select the categories whose alarms you want to acknowledge.

NOTE Use **Ctrl+click**, **Shift+click**, or both to select multiple categories, or select the **Select All** checkbox.

2 Click **Advanced**.

3 Click **Acknowledge All**.

TIP Acknowledging many alarms simultaneously can take a long time. Acknowledge alarms as they occur to avoid long waits.

To delete alarms

You should delete alarms from your system as they are closed because large quantities of stored alarms can reduce the efficiency of your system. To save alarm information before deleting, select **Alarms** > **Reports** tab > **Alarms**, then click the **Run** button.

To delete an alarm

1 On the **Alarms** page > **View** tab, select an alarm's checkbox.

2 Click **Delete**.

To delete all alarms in the alarms database for selected categories

1 On the **Alarms** page > **View** tab in the left-hand column, select the categories whose alarms you want to delete.

NOTE Use **Ctrl+click**, **Shift+click**, or both to select multiple categories, or select the **Select All** checkbox.

2 Click **Advanced**.

3 Click **Delete All**.

To delete all closed alarm incident groups in the alarms database

An incident group is all alarms related to a particular incident. For example, an alarm and its return-to-normal form an alarm incident group. An incident group is considered closed when all alarms in the group are closed.

1 On the **Alarms** page > **View** tab in the left-hand column, select the categories whose alarms you want to delete.

NOTE Use **Ctrl+click**, **Shift+click**, or both to select multiple categories, or select the **Select All** checkbox.

2 Click **Advanced**.

3 Click **Delete Closed Incidents**.

NOTES

- To have the WebCTRL® application automatically delete alarm incident groups a specified number of days after the groups close, select this option on the **System Settings** > **Scheduled Tasks** (page 187) tab.
- Also on the **System Settings** > **Scheduled Tasks** tab, you can set the WebCTRL® application to archive alarm information to a text file as alarms are deleted.
- An alarm source may be set up to generate an alarm and a return-to-normal. If an alarm occurs but the WebCTRL® application never receives the return-to-normal, you can select the alarm and then click **Force Normal** so that the alarm can be closed. **Force Normal** has no effect on the alarm condition that generated the alarm.

To receive audible notification of alarms

You can set up the WebCTRL® application to play an audio file on your workstation when it receives a critical or non-critical alarm.

1 On the **System Configuration** tree, select **My Settings**. See *To change My Settings* (page 156).

2 On the **Settings** tab, select **Non-critical alarms** or **Critical alarms** to be notified of each type of alarm.

3 In the **Sound File** field, type the path to the sound file.

When an alarm triggers the audio file to play, you can click and then select:

- **Snooze** to temporarily stop the sound for 5 minutes
- **Silence** to stop the sound

The alarm sound is silenced until another alarm that triggers a sound is received.

Setting up alarm actions

The WebCTRL® application can perform alarm actions listed below to notify personnel of an alarm or to record information about the alarm. You can assign alarm actions to an alarm source, a category of alarm sources, alarm sources from a certain location, or a combination of these criteria.

The alarm actions are:

- Alarm Popup
- Print
- Propagate To Server
- Run External Program
- Send Alphanumeric Page
- Send E-Mail
- Send SNMP Trap *
- Send Web Service Request *
- Write Property *
- Write to Database *
- Write to File

* Available only in WebCTRL® Premium and WebCTRL® Advantage with the Advanced Alarming package.

To see a report of each alarm action defined in your system and how it is configured, go to **Reports** > **Alarms** > **Alarm Actions**.

See the following topics for a description of each alarm action.

To assign alarm actions to alarm sources

To assign alarm actions to multiple alarm sources

Although you can assign an alarm action to a single alarm source, you typically assign an action to multiple alarm sources at the area or equipment level. The alarm action applies to all instances of the alarm sources at the selected location and below. Click an action's **Edit** button to make any changes.

To assign an alarm action to alarm sources:

1. On the **Geographic** or **Network** tree, select the area, equipment, or controller containing the alarm sources.
2. On the **Alarms** page > **Actions** tab, follow the 3 steps on the screen.

   NOTE Use **Ctrl+click**, **Shift+click**, or both to select multiple items.
3. Click **Add**.
4. Set up the alarm action by editing the fields on the alarm action page. See the appropriate alarm action below for field descriptions.
5. Click **Accept**.

After you have assigned alarm actions to an alarm source, *simulate the alarm* (page 90) to check your work. If an alarm action fails, the WebCTRL® application receives an alarm for the failed action.

NOTES

- Click **View Selected Sources** to view or change settings for each alarm.
- You can display icons and hover text on the **Geographic** tree that show where alarm actions have been created. See *Tree icons and hover text* (page 10).

To assign an alarm action to a single alarm source

1 On the **Geographic** or **Network** tree, select the alarm source (microblock).
2 On the **Alarms** page > **Actions** tab, click the drop-down arrow, then select an alarm action.
3 Click **Add**.
4 Set up the alarm action by editing the fields on the alarm action page. See the appropriate alarm action below for field descriptions.
5 Click **Accept**.

Alarm Popup

The **Alarm Popup** alarm action pops up a message on any computer with a Windows® operating system that is running the WebCTRL® Alarm Notification Client application.

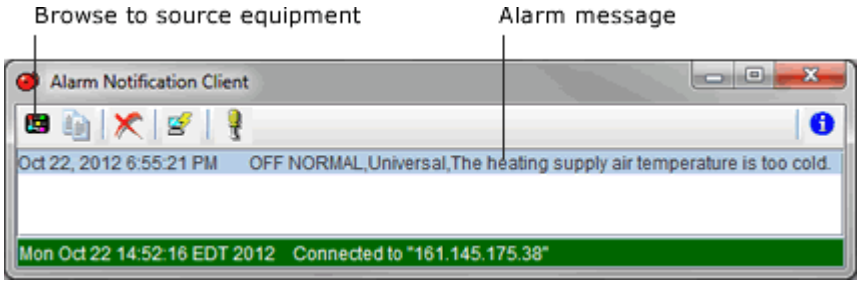
Field	Notes
To Operator **To Group**	Select individual operators or operator groups who should receive alarm notification.
Generate alarm if delivery fails	Check this field to generate a System Info alarm if the popup recipient is not currently running the Alarm Notification Client application.
Message text	Use punctuation, spaces, or returns to format the text. To add live data to the text, select *field codes* (page 95) from the **Append Field Code** list.
Append Field Code	Add *field codes* (page 95) to the message text if desired.
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. * • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. * EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **Perform Action**, select **If schedule group <your new group> is Unoccupied**. * Available only if you have the Advanced Alarming package.

Using the Alarm Notification Client application

The Alarm Notification Client application must be running on each client computer (Windows only) that should receive popup notifications. Keep the application minimized to the right side of the Windows task bar. The window will pop up with a message when an alarm occurs.

Select an alarm message, then click  to open the WebCTRL® interface displaying the piece of equipment that generated the alarm. A grayed out alarm indicates that it was acknowledged in the WebCTRL® interface.

If the Alarm Notification Client is set up to play a continuous alarm sound, you can silence an alarm by clicking **Silence!**, by pressing **Ctrl+S**, or by acknowledging the alarm in the WebCTRL® interface.



Button	Notes
	Opens the WebCTRL® interface displaying the equipment that generated the alarm. **NOTES** • If WebCTRL Server is to use https (SSL), you must do the following to enable communication between the server and Alarm Notification Client. In SiteBuilder, go to **Configure** > **Preferences** > **Web Server**. For **Enabled Web Server Ports**, select **Both HTTP and SSL** or **SSL only**. In the Server Connection field described below, enter the number of the SSL port. • If WebCTRL Server is v6.0 and an Alarm Notification Client is an earlier version, you will have to log in when you click  .
	Copies the selected alarm information to the clipboard.
	Removes the alarm information from the alarm popup list. Removing items from this list has no effect on the alarms list in the WebCTRL® interface.
	View information about the server connection.
	**On this tab...** **You define...**
	Server Connection The WebCTRL® server and port, and the WebCTRL® operator name and password **NOTES** • If you upgraded Alarm Notification Client to v6.0, you will need to reenter your operator name and password on this tab while Alarm Notification Client is connected to the WebCTRL Server application. • The default port is TCP 47806. If you change this, you must also change the **Port** field in the WebCTRL® System Settings. See "To set up the WebCTRL Server application to support Alarm Popup clients" below.

Button	Notes	
	Browse To	The WebCTRL® page that you want to see first when browsing to the equipment
	Notification Sounds	• If you want to hear a sound when an alarm occurs • Which sound you want to hear for each type of alarm. **NOTE** A **Connection Failure** occurs when the Alarm Notification Client loses communication with the WebCTRL Server application. • Whether you want the sound to continue until silenced **NOTE** If multiple types of alarms occur simultaneously, the application plays the sound of the most critical alarm (Connection Failure first, then Critical, then Normal).

To set up the WebCTRL Server application to support Alarm Popup clients

1 On the **System Configuration** tree, select **System Settings**.

2 On the **General** tab, select **Enable support for Alarm Notification Clients to connect to this server**.

3 If the server has more than one network interface adapter, type in the **Restrict to IP Address** field the IP address that the Alarm Notification Client application will connect to. You must specify the same IP address in the **Server** field in the Alarm Notification Client.

4 Use the default port or specify a different port. You must specify the same port in the **Port** field in the Alarm Notification Client.

5 Click **Accept**.

NOTE If the Alarm Notification Client application is not on the local network and will access WebCTRL® alarms through a NAT router, you must port forward the TCP port you defined in step 4 above.

To install the Alarm Notification Client application

Follow the steps below on each client computer that should receive alarm popups.

PREREQUISITE Enable support for Alarm Popup client in System Settings. See above topic.

1 On the **System Configuration** tree, click **Client Installs**.

2 Select **Alarm Notification Client**.

3 Click **Run**, then follow the on-screen instructions to install the Alarm Notification Client application. After you click **Done**, the application starts automatically.

4 In the **Settings** dialog box, enter appropriate values. You can also click to open this box. See the table above for a description of each setting.

NOTE You can lock the **Settings** so that a user cannot edit them. See *To lock a client's Settings feature* below.

5 Click **OK**.

6 Minimize the Alarm Notification Client window.

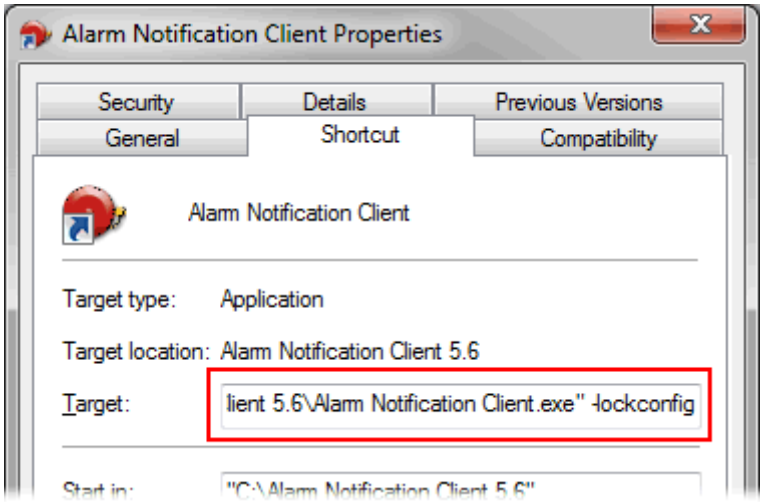
To lock a client's Settings feature

To prevent a user from editing the **Settings** :

1 Right-click **Alarm Notification Client** in the Windows **Start** menu.

2 Select **Properties**.

3 On the **Shortcut** tab, type `-lockconfig` at the end of the **Target** path.



Print

The **Print** alarm action prints alarm information.

Field	Notes
Text Printing	Select to use the WebCTRL® server's local dot-matrix printer. Text Printing will not print to a network printer. In the **Port Name** field, type the computer port that the printer is connected to. In the **Line Width** field, type the number of characters to be printed per line. Prints multiple alarms per page.
Graphics Printing	Select to use the WebCTRL® server's default printer (local or network printer). Prints one alarm per page to the WebCTRL® server's default printer.
Text to Print	Use punctuation, spaces, or returns to format the text. To add live data to the text, select *field codes* (page 95) from the **Append Field Code** list.

Field	Notes
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. * • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. * EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **Perform Action**, select **If schedule group <your new group> is Unoccupied**. * Available only if you have the Advanced Alarming package.

Propagate To Server

The **Propagate To Server** alarm action sends the selected alarm to the parent server in a system with hierarchical servers.

Field	Notes
Message text	The alarm message that is sent to the parent server.
Append Field Code	Add *field codes* (page 95) to include live data in the **Message text** field.

Field	Notes
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. * • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. * EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **Perform Action**, select **If schedule group <your new group> is Unoccupied**. * Available only if you have the Advanced Alarming package.

Run External Program

The **Run External Program** alarm action starts a program or batch file on the server.

NOTE You must be running WebCTRL Design Server to set up this alarm action.

Field	Notes
Command Line	The path of the executable file on the WebCTRL® server followed by the path of the output file. **EXAMPLE**: `c:\windows\notepad.exe c:\WebCTRL\webroot\alarms.txt`
Append Field Code	Add *field codes* (page 95) to the **Command Line** field. **EXAMPLE**: c:\reports\run_report.bat $Generation_time$$To_State$ This starts a batch file on the server and uses the alarm's generation time and state as values.
Synchronize	Tells the WebCTRL® application to wait for the external program to finish running before initiating the next **Run External Program** alarm action.

Field	Notes
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. * • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. * EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **Perform Action**, select **If schedule group <your new group> is Unoccupied**. * Available only if you have the Advanced Alarming package.

Send Alphanumeric Page

The **Send Alphanumeric Page** alarm action sends a page to one or more alphanumeric pagers or sends text messages to cell phones. The pager or phone must be able to accept e-mail.

Field	Notes
To	Type the address(es) that you want to send the alarm to. To enter multiple addresses, type a space or press **Enter** after each address.
From	Enter a valid address if required by your mailserver.
Mail Host	The mailserver's address. This can be an IP address or a system name, such as mail.mycompany.com.
Mail Host Port	Change this field if using a port other than the default port 25.
Mail Host Security Options	Select the type of security the mailserver uses. • **Cleartext** – Uses the SMTP protocol to send as clear text over TCP/IP • **Secure SSL** – Uses SSL, a communication protocol that provides data encryption • **Secure TLS** – Uses TLS, but does not begin encryption until the WebCTRL® application issues STARTTLS command

Field	Notes
Specify Mail User For Mail Host Authentication	Select if your mailserver requires a username and password.
Send mail as MIME attachment	Select if your mailserver allows only MIME attachments.
Message Text	Use punctuation, spaces, or returns to format the text. To add live data to the text, select *field codes* (page 95) from the **Append Field Code** list.
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. * • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. * EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **Perform Action**, select **If schedule group <your new group> is Unoccupied**. * Available only if you have the Advanced Alarming package.

NOTE You should not assign this alarm action to frequently-occurring alarms as this may cause problems on your network or the Internet.

To secure mailserver communication using SSL or TLS

Before the WebCTRL® application sends an email using SSL or TLS, it requests an SSL certificate from the mailserver. If the certificate that the WebCTRL® application receives is in its list of trusted certificates, it sends the email. If the certificate is not in the list, the WebCTRL® application generates a system alarm indicating that the email alarm action failed. If this occurs, you will need to add the mailserver's certificate to the WebCTRL® application's list of trusted certificates.

1 Get a copy of the certificate file from the mailserver. Ask your Network Administrator for help.

2 Put the file on the WebCTRL® server.

3 On the WebCTRL® server, click the Windows® **Start** button.

4 In the **Search programs and files** field, type the following command:

```
C:\WebCTRL<x.x>\bin\java\jre\bin\keytool.exe -import -trustcacerts
-alias smtpserver -keystore webserver\keystores\certkeys -file
<file_path>
```

replacing:
`<x.x>` with the system's version number
`<file_path>` with the full path and file name of the certificate file

5 The information for the smtpserver key is displayed and you are prompted to trust this certificate. Type `yes`.

NOTE If your mailserver is using SSL or TLS, the WebCTRL® server is running antivirus software, and the email alarm action fails because it cannot find an SSL certificate, do one of the following:

- Disable scanning of outgoing SMTP traffic in the antivirus software. See your antivirus software's Help for assistance.
- Obtain the antivirus software's SSL certificate and install it on the WebCTRL® server using the above procedure.

To set up a dial-up networking connection

The WebCTRL® application can use a dial-up internet connection through a modem to deliver e-mail for the Send E-mail or Send Alphanumeric Page alarm action.

To set up the dial-up connection:

1 Set up your modem to dial out to your Internet Service Provider. See your modem documentation.
2 On the WebCTRL® server, open Internet Explorer®.
3 Select **Tools** or  > **Internet Options**.
4 On the **Connections** tab, click **Setup**.
5 Follow the instructions in the wizard. See Windows Help for assistance.
6 In a text editor such as Windows Notepad, open **WebCTRLx.x\webroot\<system>\system.properties**.
7 At the end of the file, type the following line:

```
repactions.connection.name=<name of connection>
```

where <name of connection> is the ISP name you entered in the wizard in step 2.

8 Open Internet Explorer, then select **Tools** > **Internet Options** > **Connections** tab.
9 If the box under **Dial-up and Virtual Private Network settings** shows more than one connection, select the connection that you just created, then click **Set Default**.
10 Select **Always dial my default connection**.

Send E-mail

The **Send E-mail** alarm action sends a message to one or more e-mail accounts. The alarm action can also run a report and attach it to the e-mail as a PDF, HTML, or XLS file.

Field	Notes
To and **CC**	Type the address(es) that you want to send the alarm to. To enter multiple addresses, type a space or press **Enter** after each address.
Subject	Enter the text that you want to appear on the Subject line of the email. The subject can include *field codes* (page 95).
Use default email server configuration	Check this field to have this alarm action use the email server configuration settings defined on the **System Settings** > **General** tab. Uncheck to enter settings specific to this alarm action.
From	Enter a valid address if required by your mailserver.
Mail Host	The mailserver's address. This can be an IP address or a system name, such as mail.mycompany.com.
Mail Host Port	Change this field if using a port other than the default port 25.
Mail Host Security Options	Select the type of security the mailserver uses. • **Cleartext (SMTP)** – Uses the SMTP protocol to send as clear text over TCP/IP • **Secure SSL (SMTP with SSL)** – Uses SSL, a communication protocol that provides data encryption • **Secure TLS (STARTTLS)** – Uses TLS, but does not begin encryption until the WebCTRL® application issues STARTTLS command
Specify Mail User For Mail Host Authentication	Select if your mailserver requires a username and password.
Send mail as MIME attachment	Select if your mailserver allows only MIME attachments.
Message Text	Use punctuation, spaces, or returns to format the text. To add live data to the text, select *field codes* (page 95) from the **Append Field Code** list.
Attach Report	Select to attach a report to the e-mail, then select the **Report** and the **Format**. The attached report will include the date and time. For example, **Alarm Sources 2017 Jan 01 1230**. **NOTE** The **Report Name** field shows a custom report only if it is accessible at the current level. **Run as** shows the name and login name of the operator creating the alarm action. The report will be run using the privileges and report options of this operator. **TIP** You may want to create a new operator with limited privileges for this purpose.

Field	Notes
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. * • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. * EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **Perform Action**, select **If schedule group <your new group> is Unoccupied**. * Available only if you have the Advanced Alarming package.

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Before the WebCTRL® application sends an email using SSL or TLS, it requests an SSL certificate from the mailserver. If the certificate that the WebCTRL® application receives is in its list of trusted certificates, it sends the email. If the certificate is not in the list, the WebCTRL® application generates a system alarm indicating that the email alarm action failed. If this occurs, you will need to add the mailserver's certificate to the WebCTRL® application's list of trusted certificates.

1 Get a copy of the certificate file from the mailserver. Ask your Network Administrator for help.

2 Put the file on the WebCTRL® server.

3 On the WebCTRL® server, click the Windows® **Start** button.

4 In the **Search programs and files** field, type the following command:

```
C:\WebCTRL<x.x>\bin\java\jre\bin\keytool.exe -import -trustcacerts
-alias smtpserver -keystore webserver\keystores\certkeys -file
<file_path>
```

replacing:
`<x.x>` with the system's version number
`<file_path>` with the full path and file name of the certificate file

5 The information for the smtpserver key is displayed and you are prompted to trust this certificate. Type `yes`.

NOTE If your mailserver is using SSL or TLS, the WebCTRL® server is running antivirus software, and the email alarm action fails because it cannot find an SSL certificate, do one of the following:

- Disable scanning of outgoing SMTP traffic in the antivirus software. See your antivirus software's Help for assistance.
- Obtain the antivirus software's SSL certificate and install it on the WebCTRL® server using the above procedure.

To set up a dial-up networking connection

The WebCTRL® application can use a dial-up internet connection through a modem to deliver e-mail for the Send E-mail or Send Alphanumeric Page alarm action.

To set up the dial-up connection:

1 Set up your modem to dial out to your Internet Service Provider. See your modem documentation.
2 On the WebCTRL® server, open Internet Explorer®.
3 Select **Tools** or  > **Internet Options**.
4 On the **Connections** tab, click **Setup**.
5 Follow the instructions in the wizard. See Windows Help for assistance.
6 In a text editor such as Windows Notepad, open **WebCTRLx.x\webroot\<system>\system.properties**.
7 At the end of the file, type the following line:

```
repactions.connection.name=<name of connection>
```

where <name of connection> is the ISP name you entered in the wizard in step 2.

8 Open Internet Explorer, then select **Tools** > **Internet Options** > **Connections** tab.
9 If the box under **Dial-up and Virtual Private Network settings** shows more than one connection, select the connection that you just created, then click **Set Default**.
10 Select **Always dial my default connection**.

Send SNMP Trap

Optional WebCTRL Package

NOTE To see if your system has this optional package, click  , then select **About**. You have this package if **Enabled Features** shows **Adv. Alarming**.

The **Send SNMP Trap** alarm action sends an SNMP trap in response to receiving an alarm. Traps contain the text created in the **Text to send as the SNMP Trap** field in the alarm action dialog box. You can configure up to five SNMP servers to receive traps.

NOTES

- WebCTRL® supports SNMP v1.
- Each SNMP server you want to receive these traps must have SNMP monitoring equipment installed. If problems arise with your SNMP connection or receiving traps, contact your IS department.

- This alarm action uses Port 162 to send SNMP traps. To use a different port, open **WebCTRLx.x\webroot\<system_name>\system.properties** in a text editor such as Notepad. In the line **#snmp.trap.port = 162**, delete **#** at the beginning of the line and change 162 to the port you want to use. If you make this change while the WebCTRL Server application is running, you must restart it to have the change take effect.

Field	Notes
Network Address**	The network address of the SNMP server receiving the SNMP trap.
Community Name**	The community name that the SNMP server belongs to.
Comment	The physical location of the SNMP server. This field is optional.
Trap number**	If the network administrator has configured trap numbers, type a unique number from 1 to 127. **NOTE** The same trap number is used for all messages from this alarm action.
Text to send as the SNMP Trap	255 character limit. Type punctuation, spaces, or returns after the entries to format the message. You can customize this text by selecting *field codes* (page 95) from the **Append Field Code** list.
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **PerformAction**, select **If schedule group <your new group> is Unoccupied**.

** Ask your network administrator for this information.

Send Web Service Request

Optional WebCTRL Package

The **Web Service Request** alarm action sends a web service request to a third-party server when an alarm event occurs. For example, the WebCTRL® application could send a request to a work order system so it could create a work order for someone to respond to the alarm condition.

Field	Notes
Destination Address	The URL of the server that will receive the request. Example: https://192.168.168.102/workorder/bas
Web Service Action	Select the type of web service request required by the target server: GET or POST
Content Type	If you selected POST in the previous field, select the format required by the target server: `Application/json` or `/x-www-form-urlencoded`
Web Service Request Parameters	Optional–Create a parameter for each piece of information that the target server requires. You should be able to find information about required parameters in the target server's documentation.
Parameter Name	Enter a name for the parameter. For example, Parm1 or Date. Click **Add Parameter**.
Value	Text required for the parameter. To add live data to the request, select a *field code* (page 95) from the **Append Field** list.
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **PerformAction**, select **If schedule group <your new group> is Unoccupied**.

Write Property

Optional WebCTRL Package

NOTE To see if your system has this optional package, click  , then select **About**. You have this package if **Enabled Features** shows **Adv. Alarming**.

The **Write Property** alarm action writes a specified value to a BACnet property. You typically set up 2 alarm actions, the first writes a value when the alarm occurs and the other writes a value when the return-to-normal occurs.

Field	Notes
Expression	Type the path to the target property. To get the path, right-click the property on a **Properties** page, then select **Global Modify**. The **Geographic Location** field in the **Advanced** section shows the path. Click  to copy it. **NOTES** • A BACnet Parameter microblock's present value cannot be written to directly. However, you can change the present value by writing to the relinquish_default property, or to the priority_array/priority16 property. For example, change `#rtu-1/vfd_ovrde/present_value` to `#rtu-1/vfd_ovrde/relinquish_default`, or `#rtu-1/vfd_ovrde/priority_array/priority16`. • Do not use a BACnet address in this field.
Value to Write	Type the value you want to write to the microblock property. Type `0` or `1` for a binary property.
Append field code to value	Select *field codes* (page 95) to add this information to the **Value to Write** field.

Field	Notes
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **PerformAction**, select **If schedule group <your new group> is Unoccupied**.

Write to Database

Optional WebCTRL Package

NOTE To see if your system has this optional package, click  , then select **About**. You have this package if **Enabled Features** shows **Adv. Alarming**.

The **Write to Database** alarm action stores alarm information in a table in the WebCTRL® alarm database or in a custom database. Third-party applications can access the alarm information for building maintenance management or alarm analysis. For example, an application can perform actions such as triggering a stored procedure or running a report.

Writing to the WebCTRL® alarm database

When you add the **Write to Database** alarm action, by default the WebCTRL® application writes alarm information to the **write_db_ra** table in the WebCTRL® alarm database. The following table describes the information that is written to the database and gives the column name and data type that you will need to access the alarm information from a third-party application.

Description	Column Name	Data type
Alarm generation time	EVENT_TIME_	Datestamp
Path to the alarm source Example: #slm/m073	SOURCE_PATH_	String

Description	Column Name	Data type
Display name path to the alarm source Example: Atlanta Office/R&D Facility/Second Floor/VAV 2-1/Zone Temp	DISPLAY_NAME_	String
Alarm state Example: OFF NORMAL, LOW LIMIT, HIGH LIMIT	EVENT_STATE_	String
Alarm text as defined in the **Text to write to the database** field on the alarm action page. You can add live data to the text by selecting *field codes* (page 95) from the **Append Field Code list**.	RA_TEXT_	String

Perform Action

By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action:

- Only when the alarm source generates an alarm **or** when it returns to normal.
- After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation.
- If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group.
  EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours:
  1. Create a *schedule group* (page 45), but do not assign members to it.
  2. Create a schedule for the group. Set the occupied hours to be the same as the work hours.
  3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**.
  4. Create the alarm action that is to be performed after work hours. Under **PerformAction**, select **If schedule group <your new group> is Unoccupied**.

NOTES

- To keep the database table from growing too large, you must delete old entries using a third-party database application. You cannot view, edit, or delete entries in the WebCTRL® interface.
- If your system uses an Access or Derby database, you cannot open the database in a third-party application while the WebCTRL® or SiteBuilder application is running.

Writing to a custom database

The WebCTRL® application can write alarm information to the following types of custom databases. The custom database does not have to be the same type as the WebCTRL® database.

- SQL Server
- MySQL
- PostgreSQL
- Oracle

You may create a table in an existing third-party database or create a new database.

Using your database management tool, create a table in your custom database that includes fields for each alarm field code to be written to the table. Each field length in the table should be as long as the longest value to be written to that field.

To set up writing to a custom database instead of the WebCTRL® alarm database, check **Specify Custom Database** on the Alarms page **Actions** tab, then enter information in the remaining fields. See table below.

Field	Notes	
Text to write to the database	The text is made up of *field codes* (page 95) that add live data to the text. You can select additional field codes from the **Append Field Code** list. **NOTE** To write the text in this field to the custom database, you must include the Report Text field code ($report_text$) in the **Database Insert String** field described below.	
Database Connect String	**For database type...**	**The connect string format is...**
	SQL Server	jdbc:odbc:<*odbc_alias*>
	MySQL	jdbc:mysql://<*host*>:<*port*>/<*instance*>
	PostgreSQL	jdbc:postgresql://<*host*>:<*port*>/<*instance*>
	Oracle	jdbc:oracle:thin@<*host*>:<*port*>/<*instance*>
		where: <*host*> is the database server name/IP address <*port*> is the port number for the database <*instance*> is the database name in the database server <*odbc_alias*> is the name of the ODBC data source
Database Login and Password	The login and password to connect to the database.	

Field	Notes
Database Insert String	Use the following format: Insert into <TABLE_NAME> (<column1_name>, <column2_name> ...) values (<$field_code1$>, <$field_code2$>, ...) Example: Insert into WebCTRL_ALARMS (TIME_, LOCATION_, TO_STATE_, TEXT_) values ($generation_time$, $location_path$, to_state, $report_text$) **NOTES** • You can add *field codes* (page 95) to the Insert String using the **Append Field Code** list. • If you add a timestamp type field code (for example, $generation_time$), you should have the data go into a timestamp data type field in the custom database. Otherwise, you must use *field code formatting* (page 95) to format the time. • You can add only one Database Insert String per alarm action.
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. * • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. * EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **Perform Action**, select **If schedule group <your new group> is Unoccupied**. * Available only if you have the Advanced Alarming package.

Write to File

The **Write to File** alarm action can do either of the following:

- Record alarm information in a standard ASCII text file that you can view and edit using a text editor such as Windows® Notepad.
- Write a WebCTRL® report to a file.

Field	Notes
File Name	Path to the file you want to write to such as **c:\WebCTRLx.x\webroot\alarms.txt**. • If you do not specify a path, the file is written to the system folder. • If you type a path that does not exist, the WebCTRL® application will create the necessary folders. • You can write to one of the following: - a file on the server - a networked computer if you map the network drive. Use the drive mapping in the path from the server to the computer. • The path name may contain *field codes* (page 95).
Write alarm data	Select to record alarm information in a text file. Select **Append** to add new alarm information to the end of the file instead of writing over existing data. **NOTE** Because you can append new alarm information to the end of the file, this file can become very large. You must back up and delete this file frequently if you are using this alarm action with many alarms. In the **Text to write to the file**, enter the information you want to record for an alarm. Use punctuation, spaces, or returns to format the text. To add live data to the text, select *field codes* (page 95) from the **Append Field Code** list.
Write a report	Select to write a WebCTRL® report to a file, then select the **Report** and the **Format**. **NOTE** The **Report Name** field shows a custom report only if it is accessible at the current level. **Run as** shows the name and login name of the operator creating the alarm action. The report will be run using the privileges and report options of this operator. **TIP** You may want to create a new operator with limited privileges for this purpose.

Field	Notes
Perform Action	By default, the WebCTRL® application performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Perform Action**, you can choose to run the alarm action: • Only when the alarm source generates an alarm **or** when it returns to normal. • After a specified amount of time if the alarm has not been acknowledged or has not returned to normal. Use this option for alarm escalation. * • If the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the unoccupied hours defined for a schedule group. * EXAMPLE To have one alarm action performed during work hours and a different alarm action performed after work hours: 1. Create a *schedule group* (page 45), but do not assign members to it. 2. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 3. Create the alarm action that is to be performed during work hours. Under **Perform Action**, select **If schedule group <your new group> is Occupied**. 4. Create the alarm action that is to be performed after work hours. Under **Perform Action**, select **If schedule group <your new group> is Unoccupied**. * Available only if you have the Advanced Alarming package.

Setting up an alarm source in the WebCTRL® interface

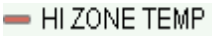
The application engineer usually sets up alarm sources in the EIKON® application. In the WebCTRL® application, you can:

- Edit an existing alarm source's settings or set up a new alarm source to generate alarms.
- Set up all alarms for a piece of equipment at once on the **Alarm Sources** tab of the equipment's **Properties** page.
- Simulate an alarm to test its setup.

Two types of microblocks generate alarms in control programs.

- Alarm microblocks include logic that takes into account conditions such as space occupancy.
- I/O point microblocks can generate an alarm when the present value exceeds defined limits (analog) or when the present value changes to an off-normal state (binary). This type of microblock is typically set up for analog points to generate alarms for sensor failure.

Alarm microblocks and I/O microblocks can have similar names. So, when you are going to enable an alarm source, first look for an alarm microblock on the **Geographic** or **Network** tree.

This type of microblock...	Appears on the Geographic or Network tree as...
	
	

To set up, edit, or disable alarm sources

To set up, edit, or disable a single alarm source

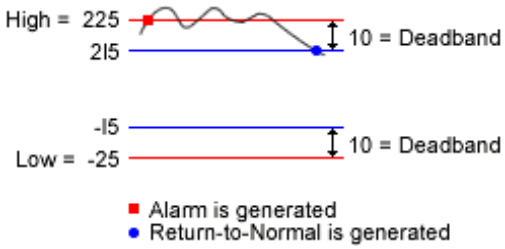
1 On the **Geographic** or **Network** tree, select the alarm source (microblock).

2 Click **Alarms**, then select the **Enable/Disable** tab.

3 Make changes to the fields as needed. The fields can vary for different types of alarm sources. See table below.

4 Click **Accept**.

TIP To set up all the alarms for a piece of equipment at once, click **Properties**, then select **Alarm Sources**.

Field	Notes
Potential alarm source	Check to enable the alarm source to generate alarms. Uncheck to disable the alarm source.
Alarm	Check to have the alarm source generate an alarm when the specified conditions occur. • For a binary input, enter the conditions for generating an alarm. • For an analog input, type the low and high limits that, when exceeded, will generate an alarm. **Deadband** The amount inside the normal range by which an alarm condition must return before a return-to-normal notification is generated. **EXAMPLE**  **NOTE** If **Status** is checked, the alarm condition currently exists.
Return to Normal	Check to have the alarm source generate a return-to-normal when the alarm condition returns to a normal state.
Alarm requires acknowledgment	Check to have the WebCTRL® application require that an operator acknowledge the alarm.
Return requires acknowledgment	Check to have the WebCTRL® application require that an operator acknowledge the return-to-normal.
Classified as critical	This property determines the color of the system-wide alarm button when the alarm comes in. = Critical = Non-critical

Field	Notes
Event State	The current state of the alarm source can be: • Normal—value is normal • Off normal—the value is not normal (binary only) • Fault—the alarm source microblock may be misconfigured • High Limit—the value exceeds the normal range (analog only) • Low Limit—the value is below the normal range (analog only)
BACnet Configuration:	
Dial on alarm	Check to have this alarm immediately delivered through a modem connection. **NOTE** When monitoring your system through a modem connection, non-critical alarms are stored in the gateway until one of the following happens: • a critical alarm occurs • the gateway is contacted by the WebCTRL® application • the gateway buffer is full, at which time all alarms are sent to the WebCTRL® application
Notification Class	Do not change this field.

To set up, edit, or disable multiple alarm sources simultaneously

1 On the **Geographic** or **Network** tree, select the area, equipment, or controller containing the alarm sources.

2 Click **Alarms**, then select the **Enable/Disable** tab.

3 In step **1**, select the categories that contain the alarm sources.

NOTE In step **1** and step **2**, **Ctrl+click**, **Shift+click**, or both to select multiple items, or check **Select All**.

4 In step **2**, select the alarm sources.

5 Make appropriate changes in step **3**.

6 Click **Accept**.

NOTE Click **View Selected Sources** to view or change settings for each alarm.

To simulate an alarm

To test the setup of an alarm source and its *alarm actions* (page 67), you can simulate an alarm or its return-to-normal.

1 On the **Geographic** tree, select the alarm source (, but not) whose alarm you want to simulate.

2 On the **Alarms** > **Enable/Disable** tab, check **Enable** next to **Alarm** or **Return to Normal**.

3 Click **Simulate** next to **Alarm** or **Return to Normal**.

4 Select the equipment on the tree, then select the **View** tab to see the alarm.

To view all instances of an alarm source

To find all instances of an alarm source at and below a selected area:

1 On the **Geographic** or **Network** tree, select an area.

2 Select the **Message**, **Actions**, **Enable/Disable**, or **Category** tab.

3 Select an alarm source from the list in step **2**.

4 Click **View Selected Sources**.

Each path in the dialog box links to the alarm source microblock.

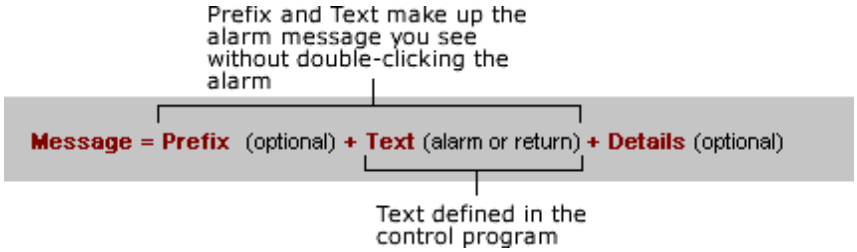
NOTE You may be able to change settings that relate to the tab you selected.

Customizing alarms

Each alarm source has an alarm message, category, and template defined in the EIKON® application. You can change messages and categories in the WebCTRL® application.

Alarm messages

An alarm message is the information that appears on the Alarms page **View** tab for an alarm. An alarm message can consist of 3 parts.



You can edit Text only at the alarm source in the EIKON® application.

Prefix and Details are hierarchical. They apply at the location where they are added and to all its children. For example, you could enter Details at the system level to show the acknowledge time for alarms in the HVAC Critical category. The acknowledge time would then be in any HVAC critical alarm message in the system.

NOTE An alarm action can have a different message from the alarm message seen on the **View** tab. To edit the message for a particular alarm action, see *Setting up alarm actions* (page 67).

To edit the message for an alarm source

1 On the **Geographic** tree, select the alarm source (microblock).

2 Click **Alarms**, then select the **Messages** tab.

NOTE **Sample Alarm Message** and **Sample Return Message** show the messages as they are currently defined.

3 Do the following as needed:
   - Edit the **Text** for **Alarm** or **Return**. You can add live data to the text by selecting *field codes* (page 95) from the **Append Field Code** list.
   - Click the **Edit** button to edit **Message Prefix** or **Message Details**.
   - In the drop-down list to the right of **Message formation,** select **Add new prefix to beginning of message** or **Add new details to end of message**, then click **Add**.
4 Click **Accept**.

To add a Prefix or Details for multiple alarm sources

1 On the **Geographic** or **Network** tree, select the area, equipment, or controller containing the alarm sources.
2 Click **Alarms**, then select the **Messages** tab.
3 In step **1**, select the categories that contain the alarm sources whose messages you want to edit.

   NOTE In step **1** and step **2**, **Ctrl+click**, **Shift+click**, or both to select multiple items, or check **Select All**.
4 In step **2**, select the alarm sources.
5 In step **3**, select **Add new prefix to beginning of message** or **Add new details to end of message**.
6 Click **Add**.
7 Type text and add field codes as needed.
8 Click **Accept**.

Alarm categories

Alarm categories sort related alarm sources and their alarms into groups such as HVAC Critical and Access Control General. Alarm categories let you:

- *View, acknowledge, or delete selected categories of alarms* (page 61) received by the WebCTRL® application
- *Assign alarm actions* (page 67) to selected categories of alarm sources
- *Set up alarm sources* (page 88) in selected categories

Each alarm source is assigned to an alarm category in either the EIKON® application or in the WebCTRL® interface. See "To use custom alarm and schedule categories" in EIKON® Help.

In addition to the default alarm categories in your system, you can create custom categories if needed. If you create a custom category in the EIKON® application, you must create the same category in the WebCTRL® interface. The **Reference Name** must be identical in both applications.

To assign alarm sources to a category in the WebCTRL® interface

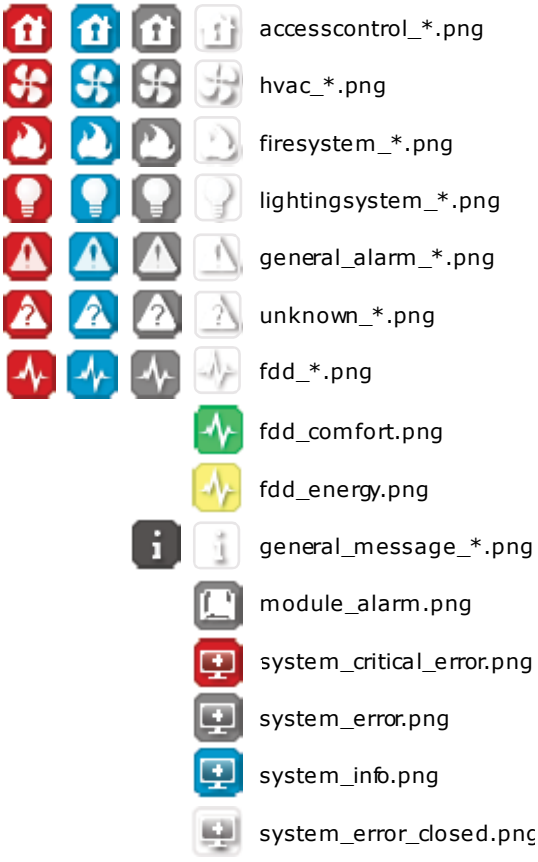
1 On the **Geographic** or **Network** tree, select the area, equipment, or controller containing the alarm sources.
2 Click **Alarms**, then select the **Category** tab.
3 In step **1**, select the category that currently contains the alarm sources.

   NOTE In step **1** and step **2**, **Ctrl+click**, **Shift+click**, or both to select multiple items, or check **Select All**.
4 In step **2**, select the alarm sources whose category you want to change.
5 In step **3**, select a category from the drop-down list, then click **Change**.

6 Click **Accept**.

To add a custom alarm category

1 On the **System Configuration** tree, click ▷ to the left of **Categories**.
2 Click **Alarm**.
3 Click **Add**. See table below.
4 Click **Accept**.

Field	Notes
Reference Name	Must be unique in the database, be lowercase, and not contain any spaces. This name must be identical to the name of the custom alarm category that you added in the EIKON® application.
Icon	Type `/_common/lvl5/graphics/event_categories/<file_name>.gif`, replacing <file_name> with the name of the icon file you want to use. The **event_categories** folder contains the following alarm icons: **Icons used in the WebCTRL interface:**  Icons — File name accesscontrol_*.png hvac_*.png firesystem_*.png lightingsystem_*.png general_alarm_*.png unknown_*.png fdd_*.png fdd_comfort.png fdd_energy.png general_message_*.png module_alarm.png system_critical_error.png system_error.png system_info.png system_error_closed.png **Icons available for custom categories:**  Icons — File name boilerplant_*.png electricpower_*.png level_1_*.png level_2_*.png level_3_*.png level_4_*.png level_5_*.png

Field	Notes
	*Represents critical, maintenance, general, or closed **NOTE** You can create your own 24 x 24 pixel icon (.gif or .png) and store it in the **event_categories** folder. However, your custom file will not be transferred during a WebCTRL® upgrade, so you will need to copy the file to the new install directory after the upgrade.

If you upgraded alarms from v2.0 or earlier

All v2.5 and later alarms use one template called Universal. This template lets you define your alarm message text, the critical setting, and the required acknowledgments at the alarm source in the EIKON® or WebCTRL® application.

Templates in upgraded systems

If you upgraded your system from v2.0 or earlier, the alarm sources retained their existing templates and existing alarm settings. If the existing alarm sources contain little or no customization to the alarm settings, Automated Logic® recommends that you change all of the alarms to use the Universal template. If the alarm sources had customized alarm settings, continue using the existing templates.

To assign a different template to alarm sources

PREREQUISITE The Alarms **Template** tab must be visible. If it is not, on the **System Configuration** tree, select **Privilege Sets**, then check **Maintain Alarm Templates**.

1. On the **Geographic** tree, select the piece of equipment containing the alarm sources to be changed.
2. Click **Alarms**, then select the **Template** tab.
3. Follow the 3 steps on the screen.

   NOTE Use **Ctrl+click**, **Shift+click**, or both to select multiple items.
4. Click **Change**.
5. Click **Accept**.

TIP To change all alarms in the system simultaneously, go to the system level and then select all categories and all alarm sources on the **Templates** tab.

To add an alarm template

1. On the **System Configuration** tree, select **Alarm Templates**.
2. Click **Add**.
3. Select **Source-based** (a v2.5 template) or **Stand-alone** (a pre-v2.5 template), then click **OK**.
4. Edit the template fields as needed. See table below.
5. Click **Accept**.

Field	Template Type	Notes
Reference Name	All	Must be unique in the database, be lowercase, and not contain any spaces. This name must be identical to the name of the template in the EIKON® application.
Display Name	All	The name that will appear in the WebCTRL® interface for this template.
Alarm Message	Source-based	The message text displayed on the **View** tab or in the alarm action when an Alarm requires acknowledgment.
Return Message	Source-based	The message text displayed on the **View** tab or in the alarm action when a return-to-normal requires acknowledgment.
Fault Message	Source-based	The message text displayed on the **View** tab or in the alarm action when a Fault requires acknowledgment.
Critical	Stand-alone	Select if this is a template you will use with a critical alarm.
Acknowledgement Required	Stand-alone	Select which alarm states require an acknowledgment.
Out of Range	Stand-alone	Analog inputs and outputs that have low and high limit alarm properties. Click  to the left of **Out of Range** to make changes to the alarm messages displayed on the **Alarms** page > **View** tab. Short text is the message displayed when the alarm is not expanded. Long text is the message displayed when the alarm is double-clicked and expanded.
Change of State	Stand-alone	Binary inputs and alarm microblocks. See **Out of Range** above to change the alarm messages.
Copy Field Code to Clipboard	Stand-alone	To add a field code to any of the message text fields: **1** Select a field code to copy it. **2** Click in the appropriate text field where you want the field code. **3** Press **Ctrl**+**V** to paste the field code.

Using field codes

Use field codes to insert live data into:

- The message on an alarm action
- Text displayed on the **Alarms** page > **View** tab
- Alarm information archived to a text file when an alarm is deleted

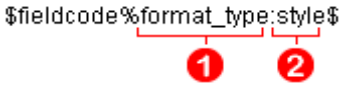
You can customize the setup of each of these items by appending field codes. For example, to have the message in an alarm action include the device that generated the alarm, append the Device field code to the action's message.

Formatting field codes

You can type a formatting command after a field code to format the field code in one of the following 3 ways:

- Format a number field code (Example: ##.##)
- Format a date/time field code (Example: MM/dd/yyyy hh:mm:ss)
- Left, right, or center align a field code and set the field width

A formatting command must have the following syntax:



Use the table below to determine the format_type and style for a formatting command.

	1 format_type	2 style	Example
To format a number	N	The actual formatting, such as ##.##. The basic format uses the pound sign (#) to represent a number. For more information, search the Internet for "customizing number formats with java".	To always round a setpoint value to two digits to the right of the decimal, the field code is: $setpoint_value%N:##.##$ For example, 78.9935 becomes 78.99.
To format date/time	D	The actual formatting, such as MM/dd/yyyy hh:mm:ss. For more information, search the Internet for "customizing date time formats with java".	To show the date and time when an alarm is generated in a format like 03/15/2004 10:50:43, the field code is: $generation_time%D:MM/dd/yyyy hh:mm:ss$
To set alignment and field width	L for left align R for right align C for center align	Indicate the field width by number of characters.	To left align the name of the device that generated the alarm and set the field width to 15 characters, the field code is: $device%L:15$

Using multiple formatting commands

You can type multiple formatting commands for a field code. For example, you can format a number and then set the alignment and field width. The syntax for multiple formatting commands is:

$fieldcode%format_type1:style%format_type2:style$

EXAMPLE To format the alarm date and time, center it and set the field at 20 characters, the field code is:
$generation_time%D:MM/dd/yyyy hh:mm:ss%C:20$

NOTE You must enter the date/time or number formatting command before the alignment/field width command.

Field codes

Field Code Name	Field Code	Description
Acknowledge Operator	$acknowledge_operator$	The operator who acknowledged the alarm. **EXAMPLE** John Doe
Acknowledge Time	$acknowledge_time$	The time when the operator acknowledged the alarm. **EXAMPLE** Nov 12, 2012 6:46:31 PM
Alarm Category	$alarm_category$	The alarm category that the alarm is assigned to. **EXAMPLE** HVAC Critical
Alarm Priority	$alarm_priority$	The priority number associated with the alarm's priority (Off-Normal, Fault, or Normal) on the controller's **Driver** > **Notification Class** page.
Alarm Template	$alarm_template$	The alarm template that the alarm is assigned to. **EXAMPLE** Universal
Alarm Type	$alarm_type$	The alarm type of the alarm source. **EXAMPLE** CHANGE OF STATE

Alert Text	$alerttext$	For a converted SuperVision® system if the option **Create a single alarm template...** was selected during upgrade. Retrieves alarm message text from **cmnet_alert_text.properties**.
		To use this field code:
		1. Select the **Alert Text** field code.
		2. After $alerttext, type one of the following:
		`:normalshort`
		`:normallong`
		`:alarmshort`
		`:alarmlong`
		For example, $alerttext:alarmlong$

Character	c	A single ASCII character. Often used for form feeds and other printer escape sequences. **EXAMPLE** $C:65$ displays A
Command Value	$command_value$	The commanded value from the alarm source. Valid only for alarm type COMMAND FAILURE. **EXAMPLE** 3
Control Program	$equipment$	The display name of the equipment where the alarm came from. **EXAMPLE** Chiller
Controller	$device$	The display name of the device where the alarm came from. **EXAMPLE** SE6104

Field Code Name	Field Code	Description
Dead Band	$deadband$	The deadband value from the alarm source. Valid only for alarm type OUT-OF-RANGE. **EXAMPLE** 5
Deletion Operator	$deletion_operator$	The operator who deleted the alarm. **EXAMPLE** John Doe
Deletion Time	$deletion_time$	The time the alarm was deleted. **EXAMPLE** Nov 12, 2012 6:46:31 PM
Error Limit	$error_limit$	The error limit, from the alarm source. Valid only for alarm type FLOATING LIMIT. **EXAMPLE** 90
Event Values	$event_values$	Returns a string of alarm values associated with the alarm.
Exceeded Limit	$exceeded_limit$	The exceeded limit value from the alarm source. Valid only for alarm type OUT-OF-RANGE. **EXAMPLE** 90
Exceeding Value	$exceeding_value$	The exceeding value from the alarm source. Valid only for alarm type OUT-OF-RANGE. **EXAMPLE** 91
Fault	$fault$	The status of the fault condition from the alarm source. **EXAMPLE** True or false
Field Message	$field_message$	Text generated in the alarm by the controller.
Feedback Value	$feedback_value$	The feedback value from the alarm source. Valid only for alarm type COMMAND FAILURE. **EXAMPLE** 10
From State	$from_state$	The previous state of the alarm source. **EXAMPLES** NORMAL, FAULT, OFF NORMAL, HIGH LIMIT, LOW LIMIT
Generation Operator	$generation_operator$	The operator who forced the alarm to return to normal. **EXAMPLE** John Doe
Generation Time	$generation_time$	The time in the controller when the alarm was generated. **EXAMPLE** Nov 12, 2012 6:35:18 PM
In Alarm	in_alarm	The in alarm status from the alarm source. **EXAMPLE** True or false
Incident Closed Time	$incident_closed_time$	The time the alarm's entire incident group closed. **EXAMPLE** Nov 12, 2012 6:46:31 PM
Latched Data Value (Analog)	$latched_data_analog:x$	"x" ranges from 1 to 10. Returns a numerical value. Use for legacy systems.

Field Code Name	Field Code	Description
Latched Data Value (Digital)	$latched_data_digital:x$	"x" ranges from 1 to 10. Returns On or Off. Use for legacy systems.
Location Path	$location_path$	Displays the path display names from root to source. **EXAMPLE** Building B / Basement / VAV AHU B / SSP_STOP The number of levels in the path is based on the System Settings field **Levels displayed in paths**. To override this setting, enter the field code as $location_path:#$, substituting # with the number of path levels you want to show. For example, $location_path:5$ will show 5 levels.
Long Message	$long_message$	The formatted alarm long text displayed by double-clicking the alarm on the Alarms page.
Message Details	$message_details$	The message details displayed on the Alarms page **View** tab.
Message Prefix	$message_prefix$	The message prefix displayed on the Alarms page **View** tab.
Message Text	$message_text$	The message text displayed on the Alarms page **View** tab.
New State	new_state	The status of new state from the alarm source. Valid only for alarm type CHANGE OF STATE. **EXAMPLE** Alarm, Fault
New Value	new_value	The new value from the alarm source. Valid only for alarm type CHANGE OF VALUE. **EXAMPLE** 70
Notification Class	$notification_class$	The notification class assigned denotes how the received alarm was generated. For example, if set to 1, the alarm would typically be sent to WebCTRL by Automated Logic® controllers.
Object ID	$object_ID$	Object ID of the alarm source. **EXAMPLE** 5:26
Out of Service	$out_of_service$	The status of 'out of service' from the alarm source. **EXAMPLE** True or false
Overridden	$overridden$	The status of 'overridden' from the alarm source. **EXAMPLE** True or false

Field Code Name	Field Code	Description
Program ID	$program_id$	The address of the control program that generated the alarm. BACnet program address format: device ID, program number **EXAMPLE** 2423101,1 SuperVision program address format: site, gateway, controller, fb **EXAMPLE** 1, 2, 13, 5
Receive Time	$receive_time$	The time at the workstation when the alarm was received. **EXAMPLE** Nov 12, 2012 6:46:31 PM
Recipient Device ID	$device_id$	The device ID of the device where the alarm came from. **EXAMPLE** 8:2423101
Record Type	$record_type$	The type of alarm. **EXAMPLE** BACnet, Supervision®, System
Reference Path	$reference_path$	Path to alarm source. Available in all alarm actions. **EXAMPLE** #e_b_vav_ahu_b/ssp_stop
Reference Value	$reference_value$	The 'reference value' from the alarm source. Valid only for alarm type FLOATING LIMIT. **EXAMPLE** 83
Referenced Bitstring	$referenced_bitstring$	The value of the 'referenced bitstring' value from the alarm source. Valid only for alarm type CHANGE OF BITSTRING. **EXAMPLE** 1011011101101
RTN Time	RTN_time	The time when the alarm returned to normal. **EXAMPLE** Nov 12, 2012 6:46:31 PM
Setpoint Value	$setpoint_value$	The 'setpoint value' from the alarm source. Valid only for alarm type FLOATING LIMIT. **EXAMPLE** 72
Short Message	$short_message$	The formatted alarm short text.
Site	$site$	The display name of the site the alarm came from. **EXAMPLE** Kennesaw
Source	$source$	The display name of the alarm source microblock that generated the alarm. **EXAMPLE** SAT_HI
Source description	$source:description$	The Description field of the alarm source microblock that generated the alarm. **EXAMPLE** High Cooling Supply Air Temp

Field Code Name	Field Code	Description
Source Path	$source:<path>$	Substitute <path> with the path to the value you want to display. See Defining WebCTRL® paths. **Example to add text value**: $source:~equipment.display-name$ **Example to add a numeric value**: $source:/trees/geographic/rd_facility/zone_1/lstat/present_value$ **NOTES** • You can use *Global Modify* (page 27) to get the path. • For legacy systems, use the latched data field codes.
System Directory	$system_dir$	The system folder name. **EXAMPLE** c:\WebCTRLx.x\webroot\world_corporation
To State	to_state	The current state of the alarm source. **EXAMPLES** NORMAL, FAULT, OFF NORMAL, HIGH LIMIT, LOW LIMIT

Time-lapse

You can replay up to 24 hours of **Graphics**, **Alarms**, or **Trends** pages starting on a specified date and time. Time-lapse can be a helpful troubleshooting tool.

The **Graphics** page can replay only trended values. Values that are not trended are grayed out. Floorplan areas without trend data are dark grey.

NOTES

- If a graphic is linked to a microblock value without an embedded trend but a Digital Trend or Analog Trend microblock is attached to the linked microblock by a wire, Time-lapse will use the wire trend's value.

When the graphic is viewed in Time-Lapse:

- The data in a data table or chart will not change.
- A color map will ignore report data and show thermographic colors.

For Time-lapse to show thermographic colors, the WebCTRL® application polls each router in the system at specified intervals and collects color. Color is collected for the router and its downstream controllers only if their control program contains a Setpoint, Set Color, or Set Color If True microblock. The Server then uses the collected colors to create a trend called **Color Trend**.

To play Time-lapse

1. Select the location on the tree where you want to see the time-lapse.
2. Click  at the top of the page.
3. In the **Replay** field, select the length of time that you want to replay. The replay will step through the data at the interval shown.
4. In the **Start** field, select the date and time that you want the replay to begin. You can click:
   - The  buttons to change the day or time.
   - The  to select the date.
   - A date/time field, and then type the new number.
5. Click **Accept**. The time-lapse immediately begins to play.
6. Use the following items to work with the time-lapse.

TIP You can enable historical trending for trended values to have more trend data available in Time-lapse and to have the data retrieved faster.

NOTES

- While in time-lapse, you can navigate to other locations in the tree.
- You can select an alarm on the **Alarms** page and then click the **Activate Time-lapse** button. This changes the time-lapse to the 1-hour period in which the alarm occurred. You can step backward or forward through the time-lapse at 1-minute intervals to see what other alarms occurred during that hour. You can also go to **Graphics** or **Trends** to see what else happened when the alarm occurred.
- The white horizontal line on a **Trends** time-lapse indicates where the replay currently is in the time-lapse range.

To change polling interval or duration or to turn off color collection

1. On the **System Configuration**  tree, select **System Settings**.
2. On the **General** tab under **Trends**, do one of the following:
   - In the **Poll Interval** field, change the frequency that the server collects color trend data from the routers.
     NOTE Last Poll Duration shows how long the last polling of the routers took.
   - If directed by Automated Logic® Technical Support, uncheck **Enable Server Trending of Color** to stop color collection.
3. Click **Accept**.

Reports

Use WebCTRL® reports to monitor and troubleshoot your system. Your WebCTRL® license and/or edition determines which of the following things you can do in the WebCTRL® interface. You can:

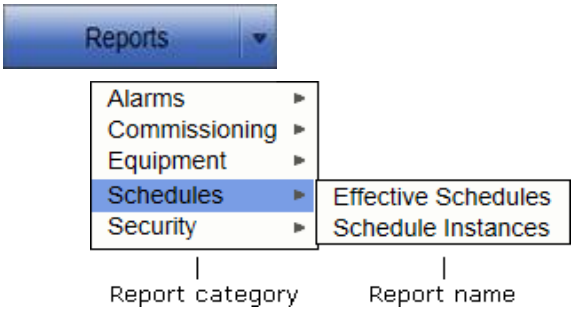
- Run preconfigured reports
- Run custom reports
- Schedule reports
- Create custom reports

See *WebCTRL® editions and optional packages* (page 3).

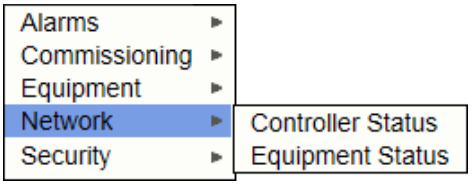
Preconfigured reports

The preconfigured reports shown in the **Reports** button drop-down list vary depending on which tree you selected.

In the **Geographic** tree:



In the **Network** tree:



A preconfigured report shows data for the selected tree item and all of its children.

This preconfigured report...	allows you to...
Alarms	
Alarm Actions	Create a summary of the information configured on the *Alarms* > *Actions* (page 67) tab.
Alarm Prefixes & Details	Create a summary of the information configured on the *Alarms* > *Messages* (page 91) tab.
Alarm Sources	Create a summary of potential alarm sources as configured on the *Alarms* > *Enable/Disable* (page 88) tab.
Alarms	View, sort, and filter the information on the *Alarms View* (page 61) tab.

Commissioning	
Equipment Checkout	View the information on the **Equipment Checkout** tab of the equipment's **Properties** page during commissioning. Also, find equipment that has not been fully commissioned.
Test & Balance	View the results of VAV box commissioning. Running this report automatically uploads calibration parameters to the WebCTRL® application.
Equipment	
Locked Values	Find all locked points and locked values. **NOTE** Locks in the Airflow microblock are not reported.
Network IO	Verify the programming and status of all network points—especially useful for commissioning controllers used for third-party integration.
Parameter Mismatch	Discover where your system has parameter mismatches that need to be resolved.
Point List	View the details of all points. Verify that all points have been checked out during commissioning. Also, create custom lists for other contractors. For example, create a list of BACnet IDs.
Trend Usage	Creates a summary of the information configured on the *Trends* > *Enable/Disable* (page 52) tab.
Schedules	
Effective Schedules	View all equipment that may be scheduled and the net result of all schedules in effect for a selected date and time.
Schedule Instances	Find every schedule with its location that is entered at and below a selected tree item. This report can help you discover newly added and conflicting schedules.
Security	**NOTE** You must have the Advanced Security package to run these reports.
Location Audit Log	View chronological lists of location-based changes, the operators that made them, and the reasons for the changes. This report includes changes such as property edits, downloads, driver changes, and view changes.
System Audit Log	View chronological lists of system-wide changes, the operators that made them, and the reasons for the changes. This report includes changes such as any change made on the **System Configuration** tree, login/logout, and scheduled processes like deleting expired trends.

Network	
Controller Status	Discover network communication problems (shown as purple squares on the report) that need troubleshooting. The report also shows boot and driver version, download information, and if controller has 4.x or later driver, the report shows the serial number and Local Access port status.
Equipment Status	Display the thermographic color, status, and prime variable of each control program.

To run a preconfigured report

1. Select an item on the **Geographic** or **Network** tree.
2. Click the **Reports** button drop-down arrow, then select a report.
3. On the **Options** tab, define the layout and content of the report.

   NOTES

   - Changing the size and orientation of the printed page also changes the report layout on the **View** tab.
   - To create a CSV (Comma Separated Values) file after you run the report, select **Support CSV text format**. See *To create a report PDF, XLS, or CSV file* (page 141).
   - The current operator's report options are saved so that when that operator logs in again, the same options are used.
4. Click **Run**.

NOTE Click **Schedule** to schedule the report to run on a recurring basis. See *Scheduling reports* (page 142).

Custom reports

Custom reports are managed through the WebCTRL® Report Manager that shows a list of all custom reports in your system. In the Report Manager, you can:

- *Create a new custom report* (page 106)
- *Copy an existing report as a starting point for a new report* (page 106)
- *Edit or delete an existing report* (page 125)
- *Export report(s) to a file so that it can be imported into another system* (page 125)

A custom report can provide data for a *data table* (page 128), *chart* (page 132), or *color map* (page 136) on a Graphics page.

NOTES

- A custom report may appear in the Report Manager but not appear in the Reports button menu because its only purpose may be to provide data to an item on a Graphics page.
- To support upgraded systems, you can still create and access *legacy (v6.5 and earlier) custom reports* (page 143). These reports appear only in the **Reports** button drop-down menu, but not in the Reports Manager.

Creating a custom report

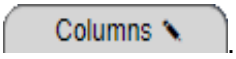
1. Click the **Reports** drop-down arrow, and then select **Report Manager**.
2. Click **Add**.

   TIPS

   - To save time when making a report that is similar to an existing report, select the existing report in the Report Manager, and then click **Copy**. The Report Editor opens the new report so that you can make changes.
   - Click on the **Display Name** or **ID** heading in the Report Manager to sort the column.
3. Enter information on the following Report Editor tabs until you have created the report.
   - *Type tab* (page 107)
   - *Columns tab* (page 109)
   - *Variables tab* (page 120)
   - *Where tab* (page 121)
   - *Options tab* (page 121)
   - *Output tab* (page 122)

NOTES

- As you create your report, you can use the **Preview** section on each tab to check your work. See *To preview a report* (page 124).
- After you create the report, you can go to any item in the tree where the report is accessible, and run it. See *To run a custom report* (page 125).
- A report can have a maximum of 50 columns and 1000 rows.

CAUTION As you move from tab to tab in the Report Editor, click **Apply** to save your changes on a tab. If you click **Cancel** on a tab, all unsaved changes on any tab will be lost. Tabs that have unsaved changes have a pencil icon beside the tab name. For example, 

.

Type tab

1 Enter the necessary information about the report you are creating. See table below.

2 Click **Accept** or **Apply**.

Field	Notes	
Display name	The name that will appear in the **Reports** button drop-down list.	
ID	A unique ID for the report (letters, numbers, underscores, and hyphens only; no spaces or special characters).	
Show in Reports menu	By default, the report name will appear directly in the **Reports** button drop-down list, not in a category. You can: • Check this box and then select a category for the report. See *To organize custom reports by category* (page 126). • Uncheck this box so that this report does not appear in the **Reports** button drop-down list. For example, you could uncheck this box if the report will provide data to a Graphics page but does not provide valuable information as a stand-alone report.	
Primary column	Select the type of information that you want the report to be based on. **NOTE** If you change your initial selection, click **Change** to have your new selection take effect.	
	Select...	**Then...**
	Control Programs	Do one or both of the following to create the list of control programs. The primary column will list the equipment that use those control programs. • Enter a control program name, and then click **Add**. You can use wildcards. See the help text to the right of this field. • Select from the list of existing control programs.
	Locations	Do one or both of the following to create the list of locations that will appear on each row in the primary column: • Select locations in the **Geographic** or **Network** tree. • Enter a location name, and then click **Add**.
	Reference Names	Enter a reference name and then click **Add**. You can use wildcards. See the help text to the right of this field. Add more reference names, if desired, to build a list of reference names. The primary column will list the locations that have the reference names. Select the type(s) of reference names that you added.

Field	Notes	
	Date Range	Choose one of the following: • **Previous**: A specified number of previous days, weeks, months, quarters, or years. You can choose to include the current time period. • **From date**: A specified number of days, weeks, months, quarters, or years starting at a specific date (yyyy/mm/dd). **NOTE** You can enter a value or variable name in the fields for these 2 options. If you enter a variable, it must be defined on the *Variables tab* (page 120). **Frequency**: If you choose **Months** or **Days** in the **Previous** or **From date** fields, you can choose how often the data is to be reported. For example, if you choose a frequency of **Every 15 minutes**, the primary column could look similar to the following:  **Date Range format in report**: Type the date format that you want to see in the report. See *Date formats* (page 109) for a list of supported formats.
	Existing Report	Select an existing report from the drop-down list or enter a report name in the text field. The existing report will be embedded in the new report so that you can add columns to it. Any changes to the existing report will also be reflected in the new report.
	Color Map	Select this option to show colors on a Graphics page. For example, you could have a campus map where each building would show green for good energy usage or red for high energy usage. See *To produce a color map* (page 136).
Hide Primary column in report	Check to have this column not appear in the report.	
Primary column header	If you do not hide the Primary column, type the header that you want to appear at the top of this column.	

Date formats

If your **Primary column** is a **Date Range**, use the following information to enter a format in the **Date Range format in report** field.

For	Type...	Example
Year	yyyy yy	2017 17
Month	MMMM MMM MM	September Sep 9
Week in year	w	27
Week in month	W	2
Day in year	D	189
Day in month	d	12
Day of week in month	F	2 (2nd Thursday in June)
Day name	EEEE E	Tuesday Tue
Day number in week	u	1 (Monday), 2 (Tuesday), etc.

Examples of combinations:

yyyy-MM-dd = 2017-06-02
MMMM yy = June 17
MMM/yyyy = Jun/2017
MM/dd/yy D = 06/02/17 153

NOTES

- To include a single quote, type two single quotes. Example: MMM ''yy = Jun '17
- To include static text, enclose it in single quotes. Example: 'Year' yyyy = Year 2017
- For more information on date formats, search the Internet for "java simple date format".

Columns tab

The Primary column for a table is defined on the **Type** tab. You define the remaining columns on the **Columns** tab. To define the columns in your report, you can:

- *Add each individual column* (page 110)
- *Copy an existing column* (page 112)
- *Replicate a column (Trend Data only)* (page 112)

To add a column

1 Click **Add**.

2 Enter or select options in the first four fields that appear. See table below.

3 Select an option in the **Column data is from** field. See the gray rows in the table below for a description of the options.

NOTE If you change your initial selection, click **Change** to have your new selection take effect.

4 Select or enter information for the option you chose in step 1. See table below.

5 Click **Accept** or **Apply**.

Field	Notes	
The following four fields are common to all of the options from step 1 above.		
Display name	The name that will be shown in the report as the column's header.	
ID	A unique ID for the column (letters, numbers, underscores, and hyphens only; no spaces or special characters).	
Render data as	**Value**	Shows a value in the report.
	Hidden	Hides the column in the report. The column's data can be used to produce a value for another cell.
	Color	Uses the column's value to determine a color on a *color map* (page 136). Set the **Column data is from** field to **Expression** or **Function**, and then enter the appropriate information that returns a color value.
	Icon	Shows an icon to indicate a certain condition. Set the **Column data is from** field to **Expression**, and then enter an expression that says what icon filename to show for a particular condition. You can use the icons included with your system or you can create custom icons. See *Icons* (page 119) for more information.
Column format	Lets you define the column's alignment, width, and format of digits. **NOTE Column format** does not apply if you select **Hidden** or **Color** in the **Render data as** field.	
The following fields are based on your selection in the **Column data is from** field.		
Path	The column's output will be based on a path to a value in the WebCTRL® system.	
Path	Enter the path to the value you want. See Defining WebCTRL® paths.	
Show value as text	Check to have the value reported as text instead of its numerical value. For example, show the word On instead of 1.	

Expression	The column's output will be based on the result of an *expression* (page 112).	

Trend Data	The column's output will be based on a value calculated from a range of trend data.	
Trend path	Do one of the following: • Click the **Select Trend Path** button to choose the trended point. Typically, you want the full (absolute) path, but if needed, you can choose to get the relative path. • Type the path to the trend that you want the report to pull data from. See Defining WebCTRL® paths.	
Operation	Select the type of value or calculation that you want the column to show. See *Operations* (page 118) for a description of each option.	
Interval sample	If the selected operation allows, you can choose how to handle the first and last sample of the time period. For example, **Include start time / exclude end time**.	
Database trends only	Check to include only trends saved in the database, not those in the controller.	
Show time of sample	Check to include the time of the sample in the column.	
Time range	**From primary column**	You can use this option if the report's primary column is a date range.
	From column	You use this option if your report began with an embedded external report that has a column containing date ranges.
	Value	A time period specified by entering a **Start date** and **End date**.
	Past	Enter a number of days, weeks, months, quarters, and years in the past. You can select whether or not to include the current time period.
	NOTE You can use a *variable* (page 120) for a **Time range** count or date field. The variable must be defined on the **Variables** tab.	

Function	The column's output will be based on the value or manipulation of the value from another column.	
Input column	The column that you want to perform a function on.	
Function	Select an option in the drop-down list. See *Functions* (page 116).	
Arguments	A statement that contains the criteria of the function. See *Functions* (page 116) for argument formats and examples. **NOTE** You can use a *variable* (page 120) name in the argument. The variable must be defined on the **Variables** tab.	

NOTES

- To delete a column, select the column in the table at the top of the page, then click **Delete**.
- To change the order of the columns, select a column and then click  or  to move the column.

To copy a column

1. Select the column you want to copy in the table at the top of the **Columns** tab.
2. Click the **Copy** button.
3. Change the column's fields as needed. See field descriptions in *To add a column* (page 110).

NOTE The column's ID is incremented by 1.

To replicate a Trend Data column

When you have defined all the criteria for a trend column, you can quickly reproduce that column for other trend sources.

1. Select the column in the table at the top of the **Columns** tab.
2. Click the **Replicate Column** button.
3. Select whether you want the Trend Path for the new columns to be the full (absolute) path or the relative path. Typically, you will leave this set on **Full path**. See Defining WebCTRL® paths.
4. In the left column, select a location.
5. The right column displays all trend sources at or below the selected location. Select the trend sources that you want. A column will be added for each instance of the selected trend sources at or below the selected location.
6. Repeat steps 4 and 5 for any additional locations and points that you want in you report.
7. Click **Apply**.
8. Click **Close**.
9. Change the each column's fields as needed. See field descriptions in *To add a column* (page 110).

Expressions

On the Report Editor's **Columns** tab, you can specify that a column's data is from an expression. WebCTRL® expressions are similar to expressions used in spreadsheet programs. The most basic expression is a math calculation, but an expression can also manipulate text.

An expression generally consists of at least one item in dollar signs and an operator. See table below. The item in dollar signs can be:

- Another column's ID
- A path to an item in your system
- A variable defined on the Report Editor's **Variables** tab

Static text in an expression must be enclosed with single quotes. Any item that results in text should also be enclosed with single quotes. This example shows both situations: 'Filter is ' + '$filter_status$'

Example of a simple expression to compute the average value of min_temp and max_temp columns
Expression: (min_temp + max_temp) / 2

To verify that the expression you entered is formatted correctly, click **Check Syntax**. The result appears to the right of the button.
NOTE The result of checking an expression with a variable may not be accurate since variables can be used in such a wide variety of ways.

Operators

An operator defines how each piece of an expression is to be handled. The following table lists operators that can be used in expressions.

Operators that return true/false (1/0)		
<	Less than	Compares numeric data. Returns true if the value to the left of the operator is smaller than the value to the right.
>	Greater than	Compares numeric data. Returns true if the value to the left of the operator is larger than the value to the right.
<=	Less than or equal to	Compares numeric data. Returns true if the value to the left of the operator is smaller than or equal to the value to the right.
>=	Greater than or equal to	Compares numeric data. Returns true if the value to the left of the operator is larger than or equal to the value to the right.
!	Not	Evaluates the expression and returns the opposite. Example: !$zone_temp$ > 72 If zone_temp is greater than 72, the expression is false. If zone_temp is not greater than 72, the expression is true.
==	Equal to	Compares data. Returns true if the value on both sides of the operator are equal.
!=	Not equal to	Compares data. Returns true if the value to the left of the operator does not match the value to the right.
&&	And	Combines expressions. Returns true if the expressions on both sides of && result in true.
||	Or	Combines expressions. Returns true if the expression on either side or both sides of the operator results in true.
Operators that return a numeric value		
+	Add	Adds numeric data, expressions, or values.
-	Subtract	Subtracts numeric data, expressions, or values.
*	Multiply	Multiplies numeric data, expressions, or values.
/	Divide	Divides numeric data, expressions, or values.
%	Modulus	Finds the remainder in the division of numeric data, expressions, or values.

Other operators		
( )	Parentheses	Use to nest expressions. Operations in parentheses are evaluated before those outside parentheses.
if		Syntax: if (expression, true value, false value) Expression is evaluated and if 1/true, the true value is returned, otherwise the false value is returned

Combining expressions

Example 1:
Expression: $zone_temp$ < 60 || $zone_temp$ > 75
Translation: True if the current zone temperature is less than 60 or greater than 75

Example 2:
Expression: ! ($ai1/locked$ || $ai1/present_value$ > 100)
Translation: True if ai1 is not locked and al's present value is not greater than 100

Example 3:
Expression: if ($zone_temp$ < 60 || $zone_temp$ > 75, 'out of range', 'good')
Translation: If zone temperature is less than 60 or greater than 75, show out of range. Otherwise, show good.

Math functions

Function	Description
abs (a)	Returns the absolute value of a value.
acos (a)	Returns the arc cosine of a value; the returned angle is in the range 0.0 through pi.
asin (a)	Returns the arc sine of a value; the returned angle is in the range -pi/2 through pi/2.
atan (a)	Returns the arc tangent of a value; the returned angle is in the range -pi/2 through pi/2.
atan2 (y, x)	Returns the angle theta from the conversion of rectangular coordinates (x, y) to polar coordinates (r, theta).
cbrt (a)	Returns the cube root of a value.
ceil (a)	Returns the smallest (closest to negative infinity) value that is greater than or equal to the argument and is equal to a mathematical integer.
cos (a)	Returns the trigonometric cosine of an angle.
exp (a)	Returns Euler's number e raised to the power of a value.
floor (a)	Returns the largest (closest to positive infinity) value that is less than or equal to the argument and is equal to a mathematical integer.
hypot (x, y)	Returns sqrt(x^2 +y^2) without intermediate overflow or underflow.

Function	Description
IEEEremainder (f1, f2)	Computes the remainder operation on two arguments as prescribed by the IEEE 754 standard.
log (a)	Returns the natural logarithm (base e) of a value.
log10 (a)	Returns the base 10 logarithm of a value.
max (a, b)	Returns the greater of two values.
min (a, b)	Returns the smaller of two values.
pow (a, b)	Returns the value of the first argument raised to the power of the second argument.
random ()	Returns a value with a positive sign, greater than or equal to 0.0 and less than 1.0.
rint (a)	Returns the value that is closest in value to the argument and is equal to a mathematical integer.
round (a)	Returns the closest long to the argument, with ties rounding to positive infinity.
sin (a)	Returns the trigonometric sine of an angle.
signum (float f)	Returns the signum function of the argument; zero if the argument is zero, 1.0f if the argument is greater than zero, -1.0f if the argument is less than zero.
sqrt (a)	Returns the correctly rounded positive square root of a value.
tan (a)	Returns the trigonometric tangent of an angle.
toDegrees (angrad)	Converts an angle measured in radians to an approximately equivalent angle measured in degrees.
toRadians (angdeg)	Converts an angle measured in degrees to an approximately equivalent angle measured in radians.

Text functions

Function	Description
char (code)	Returns a single character string for the given Unicode character code. For example, char(36) will create the string "$".
charAT (s, pos)	Returns the character and the position.
compareTo (s1, s2)	Compares two strings. <0 if s1 <s2, 0 if s1 == s2, >0 if s1 > s2
compartToIgnoreCase (s1, s2)	Compares two strings ignoring case. <0 if s1 <s2, 0 if s1 == s2, >0 if s1 > s2
concat (s1, s2, ...)	Concatenates the two or more strings together. Same as "s1 + s2 + "
dateDiff (s1, s2)	Returns the difference between two dates, in days. Parameters may be date variables or strings of format 'yyyy/mm/dd'

Function	Description
endsWith (s1, s2)	Returns "1" if s1 ends with the string s2, else "0".
equals (s1, s2)	Returns "1" if strings are equal, else "0".
equalsIgnoreCase (s1, s2)	Returns "1" if strings are equal ignoring case, else "0".
indexOf (s1, s2, start)	Returns the index (position) of the first occurrence of the second string in the first string after "start" position. Use 0 to start from beginning of string. It returns -1 if S2 is not found.
lastIndexOf (s1, s2)	Returns the index (position) of the last occurrence of the seconds string in the first string. It returns -1 if S2 is not found.
length (s1)	Returns the length of the strings.
replace (s1, s2, s3)	Replaces all occurrences in "s1" of "s2" with "s3".
startsWith (s1, s2)	Returns 1" if s1 starts with s2.
substring (s1, i2, i2)	Returns subset from string s1 starting at index i1 to index i2. (i2 must be >= i1)
toLowerCase (s)	Converts string to lower case.
toUpperCase (s)	Converts string to upper case.
trim (s)	Removes white space from the beginning and end of the string.

Functions

On the Report Editor's **Columns** tab, you can specify that a column's data comes from one of the following functions that returns another column's value or manipulation of that value.

Function	Description
Valid Column	Returns true/false if input column is valid
Default Value	Returns the column's value if it is a valid value, otherwise returns the argument.
Format	Formats a value using Java String format function. For more information, search the Internet for "string format with java 8".
Format Duration	Formats a trend duration value. Argument formats: %d%, %h%, %m%, %s% (clock based) %D%, %H%, %M%, %S% (total count rounded down) Example 1: %ddd% days %hh%:%mm% = 003 days 13:50 Example 2: %M% min = 283 min

Function	Description
Convert Values to Text	Converts a number to a text value. Argument format: Define a set of comma separated statements. Format of each statement: lower limit=value Example 1: 0=F,60=D,70=C,80=B,90=A,100=A+ Example 2: F,60=D,70=C,80=B,90=A,100=A+ (first bucket is default for anything below second bucket's value) Example 3: Cold,68=Perfect,75=Warm Example 4: 65=Cold,68=Perfect,74=Perfect,75=Warm,76=Warm
Convert Integer to Text	Converts an integer value to text. If no match, value is empty. Argument format: Comma separated list of statements. Format of each statement: #=text Example: 0=Zero,1=One,2=Two,3=Oops
Convert Text to Integer	Converts text to an integer value. Matching is case insensitive. Argument format: Comma separated list of statements. Format of each statement: text=# Use * to match any letters. Example 1: Off=0,On=1 -or- off=0 -or- OFF=0 Example 2: a*=1,b*=2 a=1 -or- APPLE=1 B=2 -or- Book=2
Convert to Color	Attempts to convert an ALC color value (0 to 15) to a color for a color map.
Color Gradient	Converts a defined minimum and maximum number each to a color. It then maps numbers between minimum and maximum to colors to form a gradient. Format: min,max,color1,color2 Example 1: 1, 10, red, blue Example 2: 1, 10, #FF0000, #0000FF
Date Range Start	Formats the START date/time of a Date Range. Examples: yyyy/MM/dd hh:mm = 2017/07/04 11:30 hh:mm:ss = 08:35:16 For more information, search the Internet for "customizing date time formats with java".
Date Range End	Formats the END date /time of a Date Range. Examples: yyyy/MM/dd hh:mm = 2017/07/04 11:30 hh:mm:ss = 08:35:16 For more information, search the Internet for "customizing date time formats with java".
Ordinal Value	Converts a text enumeration to its integer value when possible.

Function	Description
Regular Expression	Finds a piece of text from a larger text body. Example: Finds a piece of text in a modstat. For more information, search the Internet for "regular expression patterns with java 8".

Operations

On the Report Editor's **Columns** tab, you can specify that a column's data comes from trend data. You can then specify one of the following operations be performed on the trend data.

This operation...	Shows the following for the specified time range
Average Value	The average value.
Count All Trend Records	Number of trend records collected (includes items such as time changes and enabling/disabling the trend log).
Count Trend Samples Only	Number of times the trend value was read.
First Value w/Time	The first trend sample and the time it was read.
Last Value w/Time	The last trend sample and the time it was read.
Maximum Value w/Time	The largest value and the time it was read.
Minimum Value w/Time	The smallest value and the time it was read.
Aggregate Consumption	Total consumption for meter trend data. This operation makes appropriate calculations for meters that reset to 0.
Sum of Values	The total of all trend values.

This operation...	Shows the following for the specified time range
% Time in Range	You can enter 3 types of arguments to determine the percentage of time that the trend value was: • One or more single values. Format: A comma separated list of values Example: Enter 1,2,3,4 to get the percentage of time that the trend value was 1, 2, 3, or 4. • Between two values Format: A single statement or a comma separate list of statements Example 1: Enter the statement 65:75 to get the percentage of time that the trend value was 65 to 75. Example 2: Enter the statement 28:30,38:40,48:50 to get the percentage of time that the trend value was 28 to 30, 38 to 40, or 48 to 50. • Not a specified value or between two values Format: !(value) Example 1: Enter !10 to get the percentage of time that the trend value was not 10. Example 2: Enter !28:30,38:40 to get the percentage of time that the trend value was not 28 to 30 or 38 to 40.

Icons

You can design a report to show icons to indicate certain conditions. You can use the icons included with your system or create custom icons. On the Report Editor's **Columns** tab:

1 Set **Column data is from** field to **Expression**.

2 Set **Render data as** field to **Icon**.

3 Enter an **Expression** that contains the icon's file name. See the table below for the file names of icons included with your system, or see "Custom icons" below.

Included icons

Color	On	Off	Animated .gif that flashes on and off
Red	 light_on_red.png	 light_off_red.png	 light_alarm_red.gif
Blue	 light_on_blue.png	 light_off_blue.png	 light_alarm_blue.gif
Light blue	 light_on_ltblue.png	 light_off_ltblue.png	 light_alarm_ltblue.gif
Green	 light_on_green.png	 light_off_green.png	 light_alarm_green.gif

Color	On	Off	Animated .gif that flashes on and off
Yellow	 light_on_yellow.png	 light_off_yellow.png	 light_alarm_yellow.gif
Magenta	 light_on_magenta.png	 light_off_magenta.png	 light_alarm_magenta.gif
Orange	 light_on_orange.png	 light_off_orange.png	 light_alarm_orange.gif
White	 light_on_white.png	 light_off_white.png	 light_alarm_white.gif

Custom icons

If you choose to use a custom icon, put the icon in one of the following places:

- In **WebCTRLX.X\webroot**<system name>**\tables**. Put only the icon's file name in the expression.
- Anywhere under the **webroot** folder. Put the full path from the **webroot** folder in the expression. Example: /_common/lvl5/skin/graphics/type/area.gif.

Variables tab

You can enter a variable in a Report Editor field so that you can edit that field when you run the report. For example, if you create a Date Range report for the previous 4 months, you can put a variable named number_of_months in the field instead of a 4. When you run the report, you can change the variable value to 12 to show the previous 12 months.

1. Click **Add** to create a new variable.
2. Enter the variable's criteria. See table below.
3. Click **Accept** or **Apply**.

Field	Notes	
ID	This ID is what you will insert in a report field that you want to be able to change when you run the report. (Use letters, numbers, underscores, and hyphens only; no spaces or special characters).	
Type	Select an option from the drop-down list, and then enter a **Value**.	
	Type	**Value**
	String	A text phrase. Can contain letters, numbers, and special characters.
	Number	Can contain any number in any format.
	Date	Format is yyyy/mm/dd.
	Time	Format is hh:mm:ss.
User editable **Display name**	Check to let a user edit the variable's value when they run the report. Enter a **Display name** for the variable that will appear on the page where you run the report.	

NOTE The table at the top of the **Variables** tab shows the variables that you defined. Their order in this table is how they will appear in on the page where you run the report. To change the order on the **Variables** tab, select a variable in the table and then click  or  .

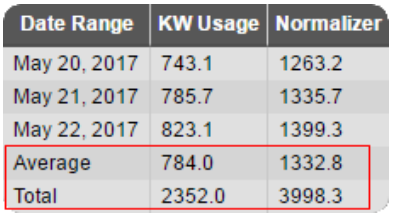
Where tab

1. Click the drop-down list for **This report can be accessed from**, and then select an option.
2. Click **Define Where**.
3. Select or enter information for the option you chose. See table below.
4. Click **Accept** or **Apply**.

Field	Notes
Anywhere	The report can be run from anywhere in the system.
Control Programs	Do one or both of the following: • Type a control program name, and then click **Add**. **NOTE** You can use wildcards. See the examples in the WebCTRL® interface. • Select existing control program(s) from the list.
Location Types	Select the type(s) of locations where you want the report to be available.
Locations	Select location(s) on the trees, or type a location name in the text box.

Options tab

1. Click the drop-down list to the left of the **Add** button, and select an option.
2. Click **Add**.
3. Select or enter information for the option you chose. See table below.
4. Click **Accept** or **Apply**.

Field	Notes
Show Max/Min/Avg/Total	Check the appropriate boxes to show the maximum value, minimum value, average, or total at the bottom of the columns. Enter the Column ID of the column that you want labels to be in. 
Show first ___rows	Enter the maximum number of rows to be displayed when the report is previewed or run. This does not include the Max/Min/Avg/Total rows. **NOTE** You can enter a value or variable name in this field. If you enter a variable, it must be defined on the **Variables** tab.

Field	Notes
Sort column	Sorts the specified column(s) from A to Z or 1 to ... Example of comma separated list of column IDs: date_range, kw_usage, normalizer Check **Reverse Sort** to sort Z to A, ... to 1.
Filter rows	Select I**nclude row when** or **Exclude row when** a specified column (ID) equals a specified value.

NOTE You can use multiple options for your report, but be aware that they will be processed in the order that they appear in the table at the top of the **Options** page. For example, if your first option is to **Show the first** 10 **rows** and your second option is **Filter rows**, only the 10 rows will be filtered. To change the order of processing, select an option in the table and then click  or  .

Output tab

On this tab, you can define the criteria for a report PDF or a chart on a graphic.

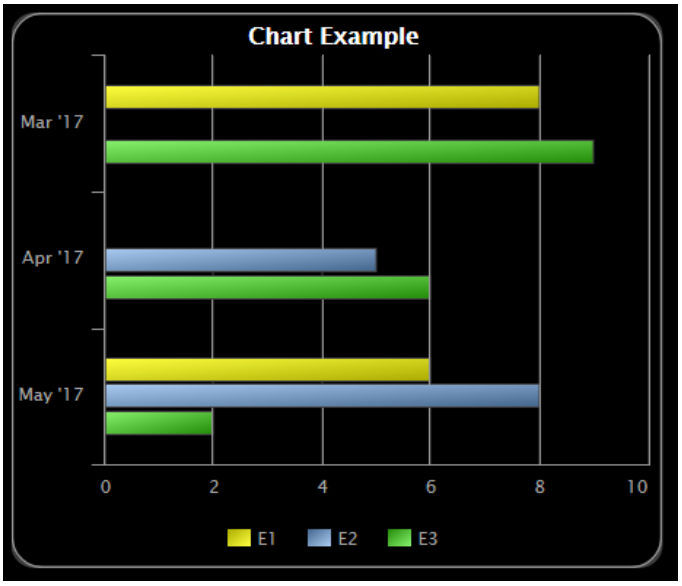
1 Select or enter information as needed. See table below.

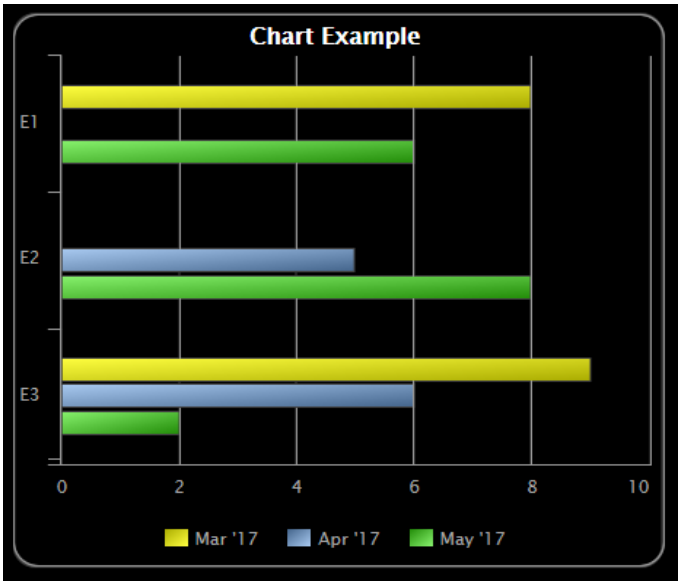
2 Click **Accept** or **Apply**.

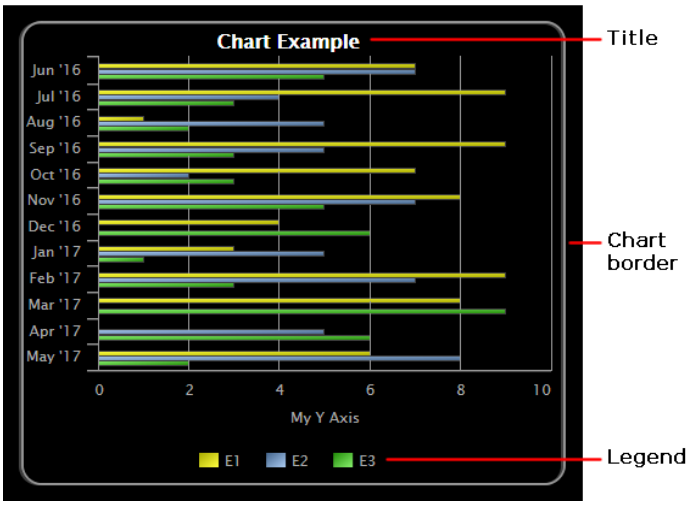
Field	Notes
PDF Output	
Page orientation	Select **Portrait**  or **Landscape**  .
Page size	Select the page size that you want for a pdf.
Ignore page width	If the report exceeds the width of the selected **Page size**, select to ignore that width and show all columns in the online PDF.
Font size	You can adjust the font size for the report's body.
Title font size	You can adjust the font size for the report's title.
Chart	These fields apply if you add a Chart control to a graphic in ViewBuilder. See *To produce a chart* (page 132).
Axis label	For a Horizontal Bar Chart, this label will appear below the X axis. For a Vertical Bar Chart or Line Chart, this label will appear to the left of the Y axis.
Data series	A column or row of numbers that are plotted in the chart.

Field	Notes
	Example: For this report... A horizontal bar chart will look like this... **By column** **By row** **NOTE** Pie charts show only one data series.

Date Range	E1	E2	E3
Mar '17	8.0	0.0	9.0
Apr '17	0.0	5.0	6.0
May '17	6.0	8.0	2.0





Field	Notes
Show title **Show legend** **Show chart border**	
Graphics Refresh	A chart or data table control will refresh its report data every time you visit the Graphics page or at the following refresh rates while the Graphics page is displayed. **If the report's primary column is...** / **Default refresh rate is...** A **Date Range** with a **Frequency** of **Hourly** or **Every 15 minutes** / Every 5 minutes Any other **Date Range** / 0 (never refreshes) Anything else / Every 30 seconds
Use custom refresh rate	Check this field to change the refresh rate. If your chart or data table shows a lot of data, refreshing frequently could slow down your system. If most of the data is historical data that does not change, you may want to set a longer refresh time.
Reset to defaults	Click **Reset** to return all fields on the **Output** tab to their original settings.

To preview a report

At the bottom of every tab in the Report Editor is a **Preview** section so that you can check your work. Click **Show** to see the report. If you make changes to the report, click **Refresh** to update the preview.

You have the following options when previewing the report:

Show all columns	Includes columns defined as hidden and a column with additional information about the Primary column.
Show Column ID	Each column header shows the display name and column ID.
Show Debug Information	Gives information for troubleshooting a report.

NOTES

- If the preview shows Error, hover your cursor over the word to see a description of the error.
- If the preview shows ?, this indicates there is no data.

To run a custom report

1. Select an item on the **Geographic** or **Network** tree where the report you want to run is accessible.
2. Click the **Reports** button drop-down arrow, and then select the report.
3. Optional: If the report was designed with *variables* (page 120), you can change the variables' values at the top of the page.

   NOTE Click **Reset** if you want to change the variables back to the value that was assigned when the report was created.
4. Click **Run**.

NOTES

- A ? in the report indicates there is no data.
- Click **Edit** to change the report's design. See *Creating a custom report* (page 106) for field descriptions.
- Click **Schedule** to schedule the report to run on a recurring basis. See *Scheduling reports* (page 142).

To edit or delete a custom report

NOTE If you have an i-Vu® Pro 5 or i-Vu® Pro 32 system, you cannot create or edit custom reports.

1. Click the **Reports** button drop-down arrow, and then select **Report Manager**.

   TIP Click on the **Display Name** or **ID** heading to sort the column.
2. Select the report, and then do one of the following:
   - Click **Edit** to open the Report Editor, make changes as needed, then click **Accept**. See *Creating a custom report* (page 106) for field descriptions.
     NOTE You can also double-click a report to open it in the Report Editor.
   - Click **Delete**, then click **OK**.

To export or import a custom report

You can export one or more reports from one system, copy them to another system, and then import the reports into the WebCTRL® interface.

To export reports

1. Click the **Reports** drop-down arrow, and then select **Report Manager**.
2. Click **Export**.
3. Select the checkbox(es) for the report(s) that you want to export, or check **Select All**.

4 Click **Export**.

NOTE A single report is exported as a .table file. Multiple reports are exported as a .zip file.

TIP In the Report Manager or Export Report window, you can click on the **Display Name** or **ID** heading to sort the column.

To import reports

1 Copy the .table or .zip file to the computer where you are importing them.

2 In the WebCTRL® interface, click the **Reports** drop-down arrow, and then select **Report Manager**.

3 Click **Import**.

4 Browse to the file that you are importing.

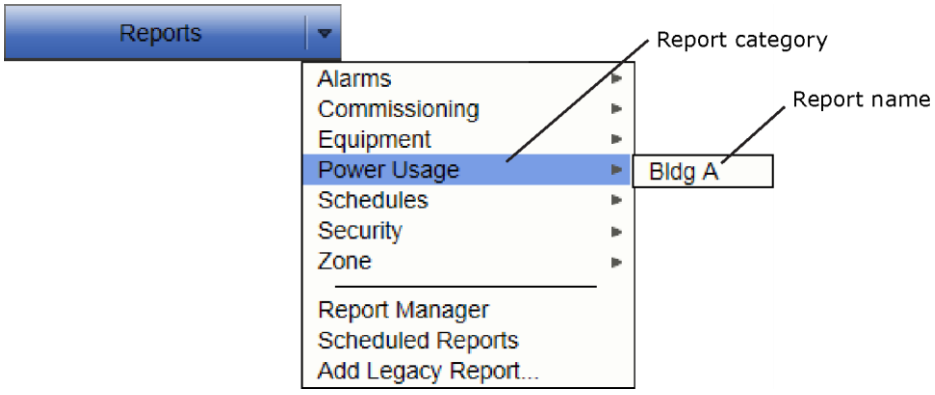
5 If a report ID that you are importing matches an existing report ID, select how you want to handle the situation:

Rename	Rename the report that you are importing.
Replace	Replace the existing report with the report you are importing.
Skip	Do not import the report with the duplicate name.

6 Click **Import**.

To organize custom reports by category

When you create a custom report, you can assign it to a category so that the report appears in the category in the **Reports** button drop-down list.



To create a report category

1 On the **System Configuration** tree, click ▷ to the left of the **Categories** folder, then click **Report**.

2 Click **Add**.

3 Type the **Category Name** and **Reference Name**.

4 Select a privilege so that only operators with that privilege can access reports in the category.

5 Click **Accept**.

NOTES

- To edit a category, select the category, make your changes, then click **Accept**.
- To delete a category, select the category, click **Delete**, then click **Accept**.

Using a custom report as the source for a Graphics page

A WebCTRL® custom report can be the data source for the following items on a Graphics page:

- A data table
- A chart
- A color map

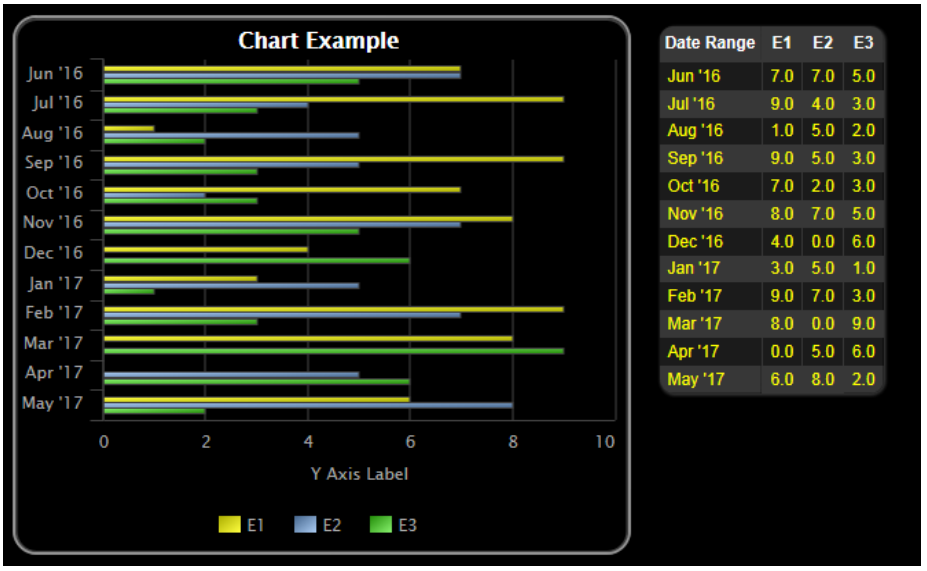
For example, this report...

Name: Chart Example

Run | Edit | Schedule

Date Range	E1	E2	E3
Jun '16	7.0	7.0	5.0
Jul '16	9.0	4.0	3.0
Aug '16	1.0	5.0	2.0
Sep '16	9.0	5.0	3.0
Oct '16	7.0	2.0	3.0
Nov '16	8.0	7.0	5.0
Dec '16	4.0	0.0	6.0
Jan '17	3.0	5.0	1.0
Feb '17	9.0	7.0	3.0
Mar '17	8.0	0.0	9.0
Apr '17	0.0	5.0	6.0
May '17	6.0	8.0	2.0

...supplies data to the chart and data table on this graphic



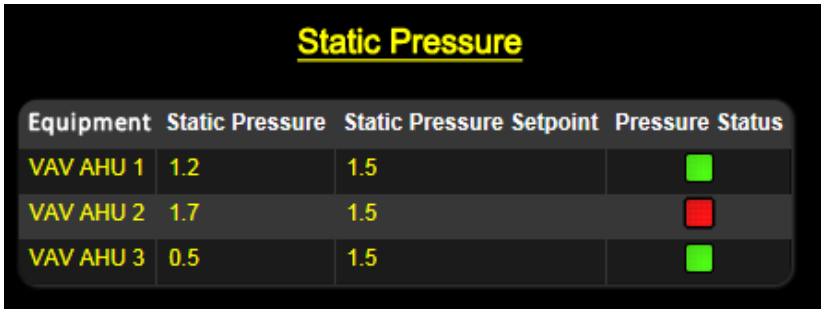
Date Range	E1	E2	E3
Jun '16	7.0	7.0	5.0
Jul '16	9.0	4.0	3.0
Aug '16	1.0	5.0	2.0
Sep '16	9.0	5.0	3.0
Oct '16	7.0	2.0	3.0
Nov '16	8.0	7.0	5.0
Dec '16	4.0	0.0	6.0
Jan '17	3.0	5.0	1.0
Feb '17	9.0	7.0	3.0
Mar '17	8.0	0.0	9.0
Apr '17	0.0	5.0	6.0
May '17	6.0	8.0	2.0

NOTE When the graphic is viewed in Time-Lapse:

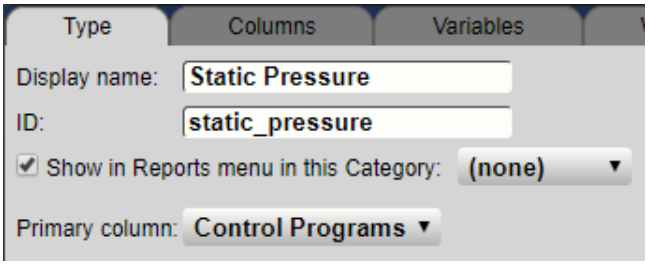
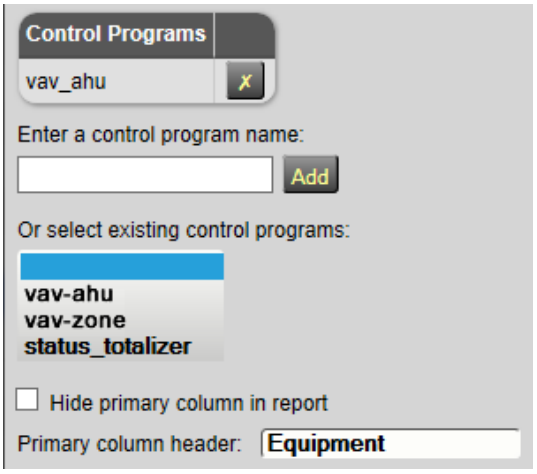
- The data in a data table or chart will not change.
- A color map will ignore report data and show thermographic colors.

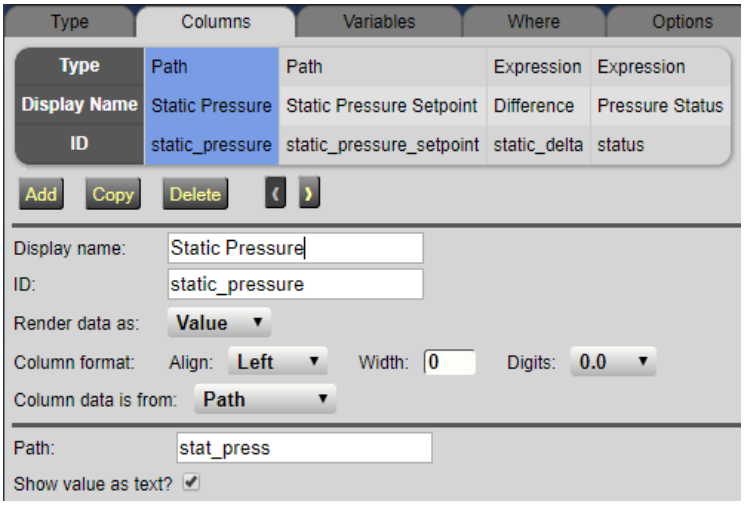
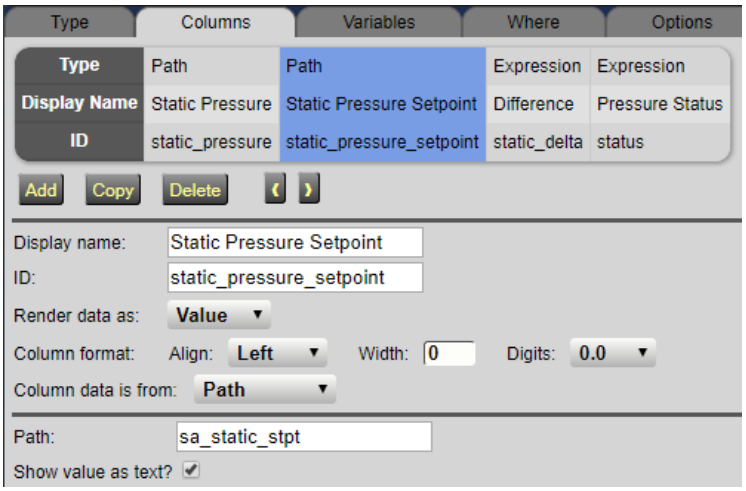
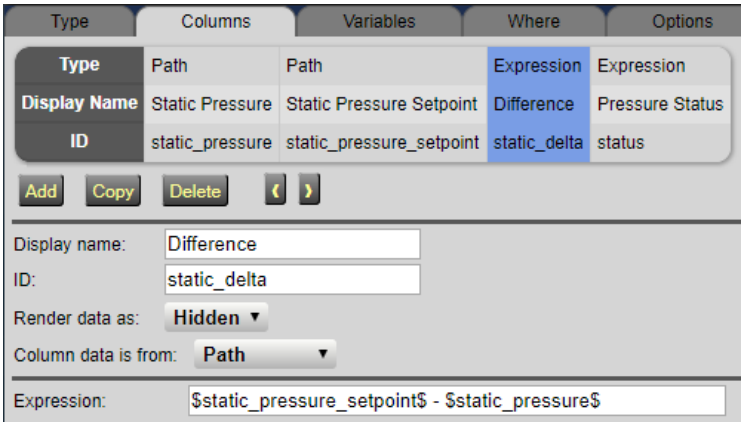
To produce a data table

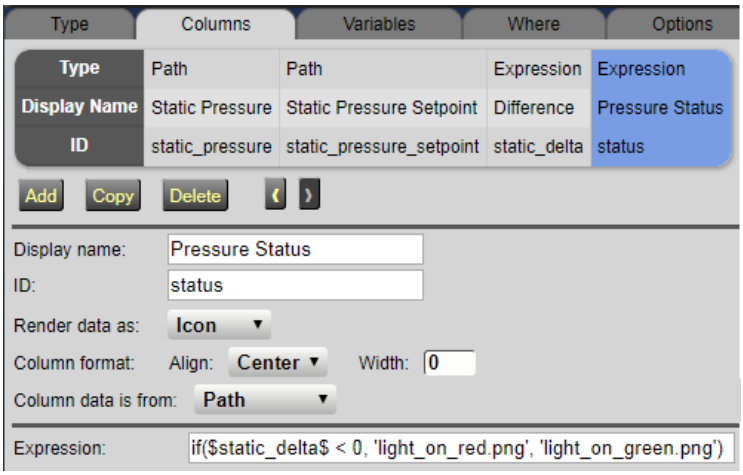
To produce a data table like the example below, first create the report in the WebCTRL® interface and then create the corresponding graphic in ViewBuilder.



To create the report in the WebCTRL® interface

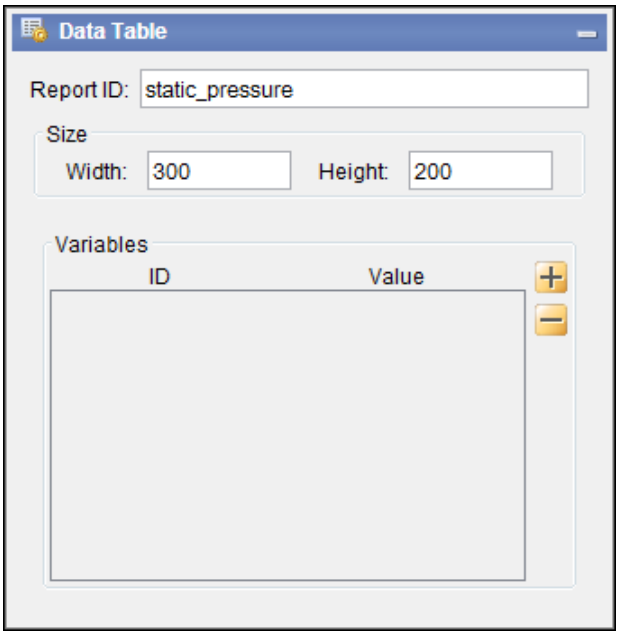
Instructions	Example
1. Click the **Reports** drop-down arrow, and then select **Report Manager**. 2. Click **Add**. 3. On the Report Editor's **Type** tab, type a **Display name** and **ID** for the report. 4. In the **Primary column** field, select the type of information that you want the report to be based on (**Control Programs** in this example). 5. On the *Type tab* (page 107), enter the criteria for the option that you selected in step 4. 6. In the **Primary column header** field, enter the heading that you want for that column (**Equipment** in this example).	 

Instructions	Example
7. Define each column in the report on the *Columns tab* (page 109). See the examples on the right. 8. Define any other information you may want, and then click **Accept**.	  

Instructions	Example
	

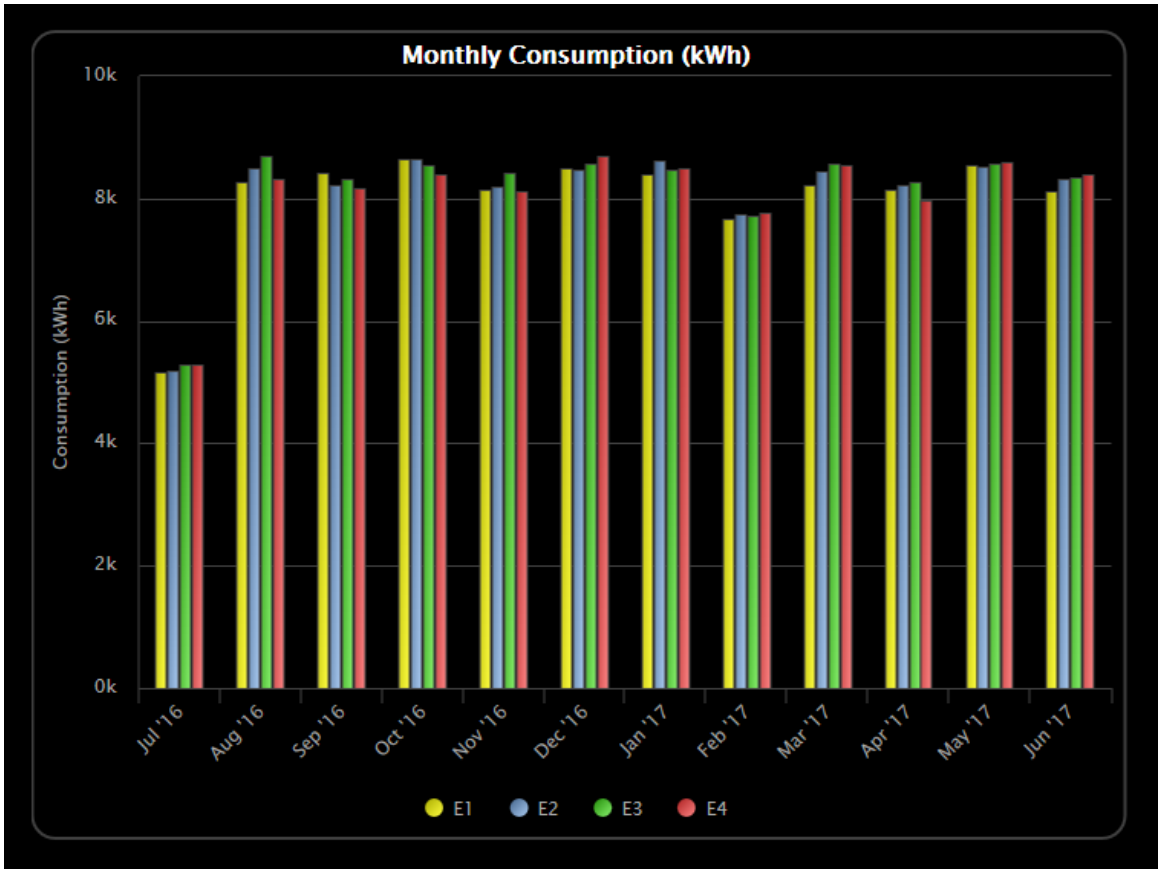
To create the graphic in ViewBuilder

Instructions	Example
1. Select **File** > **New** > **Graphic**, and then click **OK.** 2. Click the **Add Control** tab  in the **Tools** window. 3. Click the **Data Table** control and then click in the workspace.	

Instructions	Example
4. In the Properties window, enter the **Report ID** exactly as it appears in the WebCTRL® Report Editor. 5. Resize the control so that it is at least the size that the table will be in the WebCTRL® interface. To resize, enter a specific size in the Properties window or drag the handles on the control. **NOTE** If the table is cut off when you view the graphic in the WebCTRL® interface, increase the size of the control in ViewBuilder. 6. If you defined variables in the Report Editor and you want to use a different default value for the Data Table, click  in the Properties window, type the variable's ID (from the Report Editor), and then type the new default value. **NOTE** To have the data table show data for a location other than the graphic's location, add a variable and type `location` in the **ID** column. Type the path to the location in the **Value** column. 7. Save the graphic.	

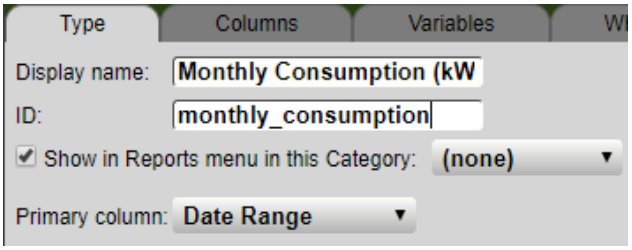
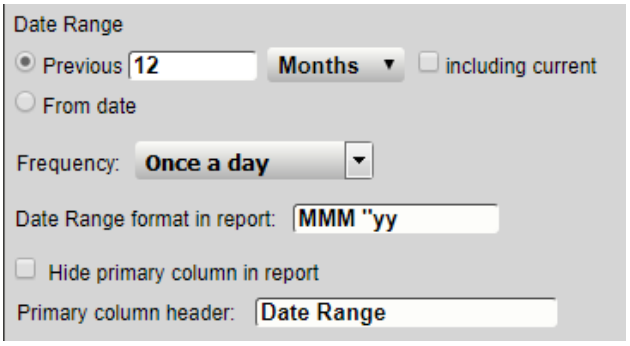
To produce a chart

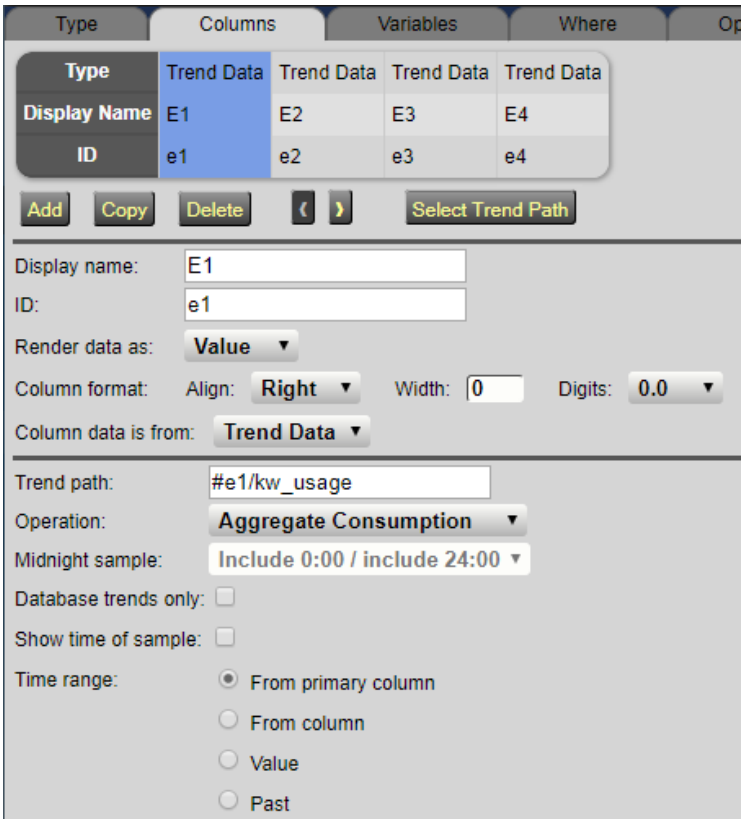
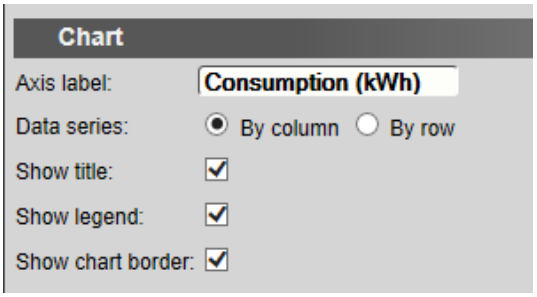
To produce a bar chart like the example below, first create the report in the WebCTRL® interface and then create the corresponding graphic in ViewBuilder.



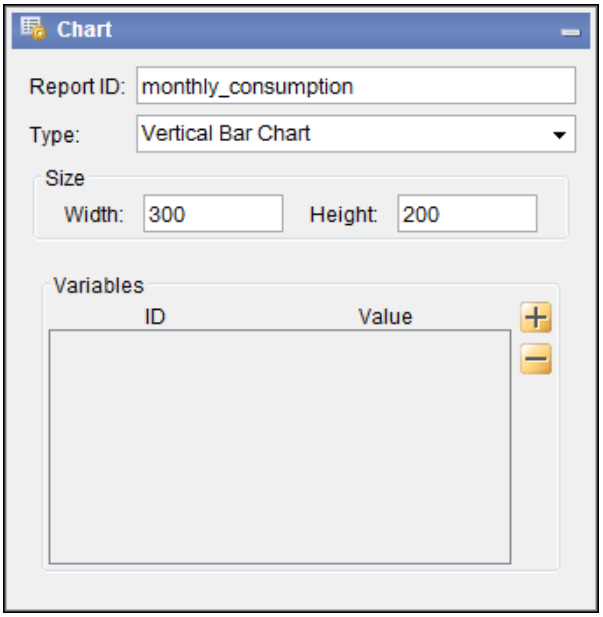
NOTE When a chart that is based on a report is displayed on a Graphics page, you can hover over various points on the chart to see values. You can also click on each item in the legend to turn that information on and off. See *Using a custom report as the source for a Graphics page* (page 127) for more information on a chart.

To create the report in the WebCTRL® interface

Instructions	Example
1. Click the **Reports** drop-down arrow, and then select **Report Manager**.	
2. Click **Add**. 3. On the Report Editor's **Type** tab, type a **Display name** and **ID** for the report. 4. In the **Primary column** field, select the type of information that you want to report based on (**Date Range** in this example).	
5. On the *Type tab* (page 107), enter the criteria for the option that you selected in step 4. 6. In the **Primary column header** field, enter the heading that you want for that column (**Date Range** in this example).	

Instructions	Example
7. Define each column in the report on the *Columns tab* (page 109). **NOTE** In the example on the right, all four columns have the same criteria.	
8. Define the **Chart** options on the *Output tab* (page 122). 9. Define any other information you may want, and then click **Accept**.	

To create the graphic in ViewBuilder

Instructions	Example
1. Select **File** > **New** > **Graphic**, and then click **OK.** 2. Click the **Add Control** tab  in the **Tools** window. 3. Click the **Chart** control and then click in the workspace. 4. In the Properties window, enter the **Report ID** exactly as it appears in the WebCTRL® Report Editor. 5. Select the **Type** of chart you want. 6. Resize the control so that it is at least the size that the chart will be in the WebCTRL® interface. To resize, enter a specific size in the Properties window or drag the handles on the control. **NOTE** If the chart is cut off when you view the graphic in the WebCTRL® interface, increase the size of the chart control in ViewBuilder. 7. If you defined variables in the Report Editor and you want to use a different default value for the chart, click  in the Properties window, type the variable's ID (from the Report Editor), and then type the new default value. **NOTE** To have the chart show data for a location other than the graphic's location, add a variable and type `location` in the **ID** column. Type the path to the location in the **Value** column. 8. Save the graphic.	

To produce a color map

A Graphics page color map shows specified colors for various conditions that are defined in a WebCTRL® report. For example, each building on a campus map could show a color that indicates its energy usage. See image below.

A color map can also have an option that lets a user switch between different kinds of information. For example, in the image below, a user could click on the **MTD kWh** drop-down list and select **YTD kWh**.

To produce a color map:

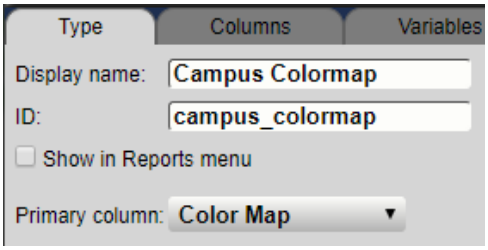
1. Create the graphic in ViewBuilder.
2. Create the corresponding report in the WebCTRL® interface.
3. Edit the graphic to add information specific to the WebCTRL® report.

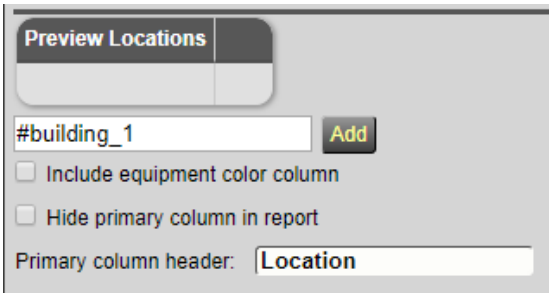
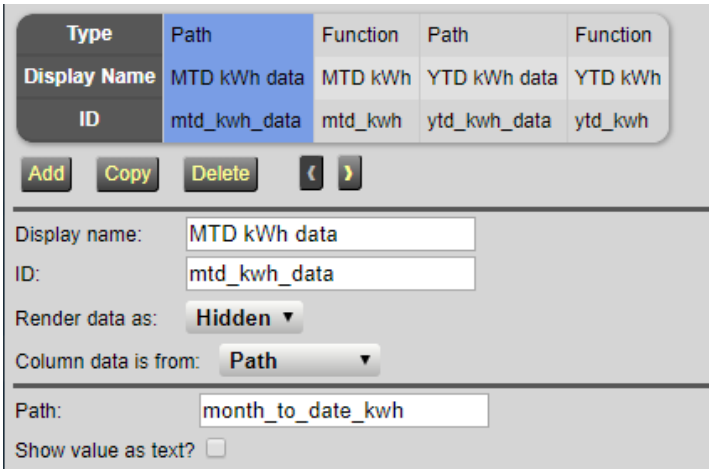
See instructions below.

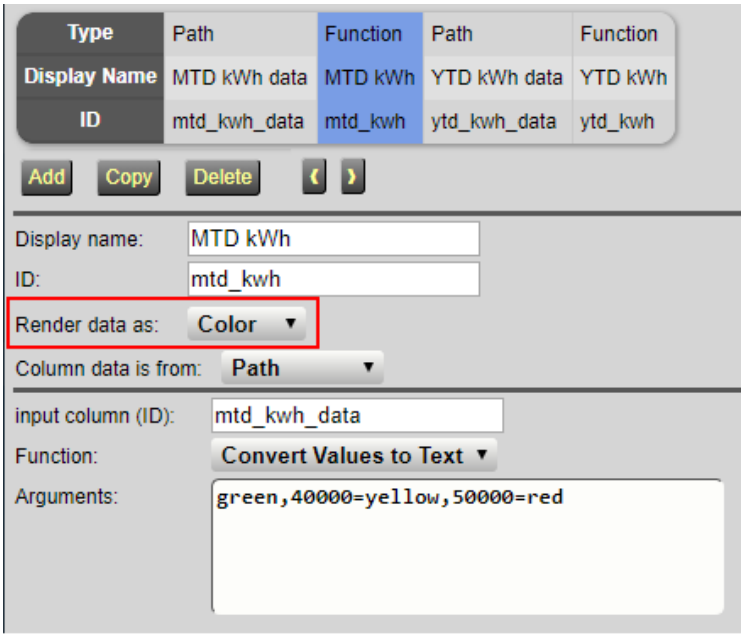
Create the graphic in ViewBuilder

Instructions	Example
1. Add an image (floorplan, campus map, etc.) to the graphic, and then double-click the image to open the **Associations** window. 2. Associate each item on your image (zone, building, etc.) just as you would associate zones on a thermographic floorplan. See "Associating zones on a floorplan to equipment" in ViewBuilder Help. **NOTE** The **Variable Color** checkbox in the Associations window must be checked. 3. Click **Save and Close**.	

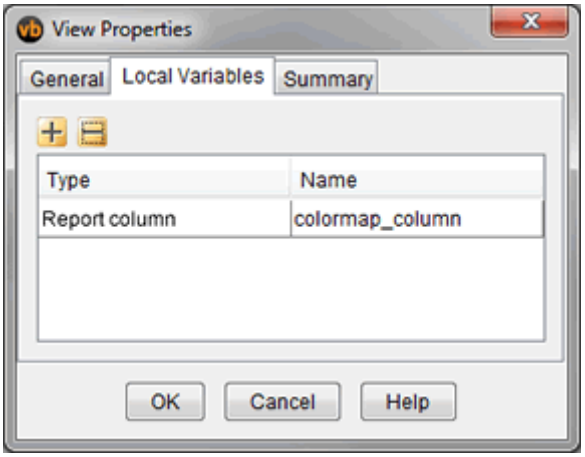
Create the report in the WebCTRL® interface

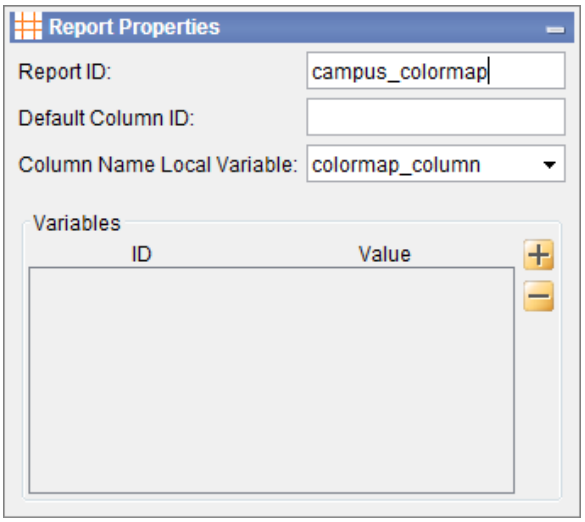
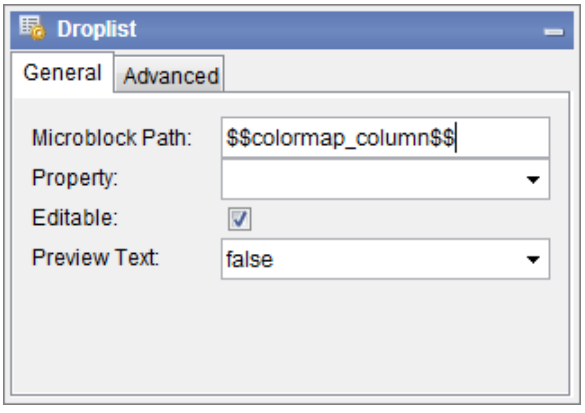
Instructions	Example
1. Click the **Reports** drop-down arrow, and then select **Report Manager**. 2. Click **Add**. 3. On the Report Editor's **Type** tab, type a **Display name** and **ID** for the report. 4. In the **Primary column** field, select **Color Map**.	

Instructions	Example
5. Type a location in your system so that you can preview the report (**#building_1** in the example). This location is only for testing your entries in the Report Editor. Associations to actual locations in the system will be made in ViewBuilder. **NOTE** You can add more than one location if you want to see more in the preview. 6. Click **Add**. 7. Optional: Select **Include equipment color column** if you want to automatically include a column for WebCTRL® thermographic colors. **NOTE** You can see this column in the **Preview** section if you check **Show all columns**.	
8. Define each column in the report on the *Columns tab* (page 109). See examples of the first two columns on the right.	

Instructions	Example
A color map can retrieve color information only from a column that has the **Render data as** field set to **Color**. 9. Define any other information needed on the Report Editor tabs, and then click **Accept**.	

Edit the graphic in ViewBuilder to add report information

Instructions	Example
Follow steps 1 through 5 if the colormap will show information from more than one report column. If not, skip to step 6. 1. Select **Configure** > **View Properties**. 2. On the **Local Variables** tab, click  . 3. Double-click **Boolean** in the **Type** column, and then select **Report column** in the drop-down list. 4. Double-click **variable** in the **Name** column, and then replace **variable** with **colormap_column**. **NOTE** If the Graphic has multiple images that will pull data from different reports, add one variable called **colormap_column1**, another called **colormap_column2**, etc. 5. Click **OK**.	

Instructions	Example
6. Double-click the image to open the **Associations** window. 7. Click , and then enter the following information: • **Report ID**: Get the report ID from the WebCTRL® Report Editor. • **Default Column ID**: This is the column whose color is displayed when the graphic first appears. Get the Column ID from the WebCTRL® Report Editor. Leave blank if the graphic will pull data from only one report column. • **Column Name Local Variable**: Type the name of the variable that you created in step 5 above. Leave blank if the graphic will pull data from only one report column. 8. If a report uses a variable and you want the colormap to use a different default value than what is defined in the WebCTRL® Report Editor, click in the **Report Properties** window, type the variable's ID (defined in the Report Editor), and then type the new default value.	
9. If the colormap will show information from more than one report column, add a control (droplist or radio buttons) that will allow the user to select the information they want to see. 10. In the **Microblock Path** field, enter the local variable that you defined in step 4, enclosing it in $$. 11. Finish the graphic and then test it in the WebCTRL® interface.	

Troubleshooting custom reports

- If a Graphics page contains a chart, data table, or color map that is retrieving information from a very large report, the graphic may be slow to load or refresh. You can do the following to improve this condition:
  - Verify that your system follows the recommendations in W*ebCTRL® v7.0 client, server, operating system, and database requirements*.
  - Reduce the size of the report by redefining the primary column criteria on the Report Editor's **Type** tab.
  - Filter the report to show only a portion of the information. You can filter the report on the Report Editor's **Options** tab.
  - Increase the refresh time (default is 30 seconds). If the chart, data table, or color map is based on information that changes infrequently, increase the refresh rate or set it to 0 to turn off refreshing. You can adjust the refresh rate on the Report Editor's **Options** tab.
  - Reduce the number of controls on the graphic that are pulling data from different reports.

- If an **Invalid Report Definitions** section appears at the bottom of the Report Manager page, one of the following has occurred:
  - The report's file or file name has been manually manipulated, invalidating the report's digital signature. Contact Technical Support to resolve this problem.
  - The report is set up to have an add-on supply content for the report, but the add-on has not been installed in the WebCTRL® interface. Install the add-on to resolve this problem.

To create a PDF, XLS, or CSV file

These reports...	Can be output as...	Notes
v7.0 custom reports	• A PDF file • A CSV file	
Preconfigured reports and v6.5 and earlier custom reports	• A PDF file • An XLS file • A CSV file	For a v6.5 and earlier CVS file, you must enable **Support CSV text format** on the **Reports** > **Options** tab before you run the report.

To output a file:

1 Run a report.

2 Click **PDF**, **XLS**, or **CSV** to download the file.

NOTE To create a CSV file when using Safari, see instructions below.

To create a CSV file when using Safari

1 Run a report.

2 Click **CSV**. A pop-up displays the results.

3 Select **File** > **Save As**.

4 In the **Format** field, select **Page Source**.

5 Add the .csv extension to the file name.

6 Select the save location in the **Where** field.

7 Click **Save**.

8 Close the popup.

NOTE If you need a digitally signed PDF to comply with 21 CFR Part 11, open the PDF in a program that supports digital signing such as the Adobe® Acrobat® application, then sign the PDF. The WebCTRL® application does not support digital signing because 21 CFR Part 11 requires that the signature be added manually, not through an automated process.

Scheduling reports

You can schedule a report so that it runs on a recurring basis. The report is saved as a file (PDF, CSV, or XLS), and you can choose to have it automatically emailed to someone.

NOTE You can also use the following alarm actions to run a report:

- The *Send E-mail alarm action* (page 77) can run any WebCTRL® report and attach it to the email.
- The *Write to File alarm action* (page 87) can run any WebCTRL® report and save it as a file.

For both alarm actions, the report can be a PDF, HTML, XLS, or CSV file.

To schedule a report

1 Click the **Reports** drop-down arrow, and then select the report that you want to schedule.

2 Click the **Schedule** button.

3 Enter the information in each field.

4 Click **Accept**.

Fields	Notes
Description	Enter a brief description of the report or how this schedule will be used.
Operator	The report will be run based on the selected operator's privileges.
Run report	Define when the report will run by selecting options in the drop-down lists.
At __:__ __	Enter the time of day that you want the report to run.
Save report as	v7.0 reports can be output as a PDF or CSV file. Preconfigured reports and v6.5 reports can also be output as an XLS file. Select the type of report file that you want. **NOTE** See *Output tab* (page 122) for a description of the PDF options that are available in the Report Editor.
Keep latest	Enter the number of files and Schedule History entries that you want to keep for this report. As a new file or entry is saved, the oldest one is deleted.
Email report	Enter the information needed to email the report each time it runs. **NOTE** For the WebCTRL® application to email a report, you must define the Email Server configuration on the **System Settings** > *General tab* (page 181).

To manage scheduled reports

Click the **Reports** drop-down arrow, and then select **Scheduled Reports**. The table shows any report that was scheduled to run.*

Select a schedule and then click...	To...
Edit	Change the report's schedule in the Schedule Editor. **NOTE** You can also double-click a schedule in the table to open the Schedule Editor.
View History	See when the report ran. Click **PDF**, **CSV**, or **XLS** in the **Results** column to download the report that was produced. **NOTE** The XLS option is not available for v7.0 custom reports.
Delete	Remove the schedule. This removes its history and all associated files.

* You can also access this table by going to the **System Configuration** tree and selecting **Scheduled Reports**.

If a report fails

The table below will show a red X and a system alarm will be generated.

Select the schedule in the table above, and then click **View History**. Hold the cursor over the word **Failure** to see hover text describing what failed.

Working with legacy (v6.5 and earlier) custom reports

Although the WebCTRL® v7.0 interface has a new method of creating and managing reports, you can still create or edit the following reports that were available in WebCTRL® v6.5 and earlier systems. These reports will be accessible from the **Reports** button drop-down list, but not the Report Manager.

This report...	allows you to...
Equipment Summary	View the following information for equipment at or below the location where the report was created: • Color • Active alarm • Locked values • Current value of selected points • Combined schedule See *To create an Equipment Summary report* (page 144).

This report...	allows you to...
Equipment Values	Compare point information. See *To create an Equipment Values report* (page 145).
Trend Samples	View trend values for a particular time frame. See *To create an Trend Samples report* (page 147).

NOTES

- You can display icons and hover text on the **Geographic** tree that show where custom reports have been created. See *Tree icons and hover text* (page 10).
- You can schedule a report to run on a recurring basis. See *Scheduling reports* (page 142).

To create an Equipment Summary report

An **Equipment Summary** report can provide the following information for equipment at or below the location where the report is created.

- Color
- Active alarm
- Locked values
- Current value of selected points
- Effective schedule

To create an Equipment Summary report:

1. On the **Geographic** tree, select the location where you want to view the report.
2. Click the **Reports** button drop-down arrow, then select **Add Legacy Report**.
3. Select **Equipment Summary**.
4. Optional: Select a **Category**.

   NOTE The **Category** field is visible only if you have defined report categories. See *To organize custom reports* (page 126).
5. Type a name for the report.
6. Click **Create**.
7. Define the **Title**, **Page Size** and orientation, and the **Maximum number of rows**.
8. Check or uncheck the **Optional Sections** checkboxes as needed.
9. Optional: Check **Include only specific control programs at or below this location**, then type the names of the control programs.
10. Select **Available Points** that you want to include in the report. Use **Ctrl+click**, **Shift+click**, or both to select multiple items.
11. Click **Add**.
12. Click **Accept**.
13. Click **Run**.

NOTE To run this report later, go to the location where the report was created. Click the **Reports** button drop-down arrow, select the report, then click **Run**.

To create an Equipment Values report

NOTE To see if your system has this optional package, click  , then select **About**. You have this package if **Enabled Features** shows **Adv. Reporting**.

An **Equipment Values** report allows you to compare point information.

To create an Equipment Values report:

1. On the **Geographic**  tree, select the location where you want to view the report.
2. Click the **Reports** button drop-down arrow, then select **Add Legacy Report**.
3. Select **Equipment Values**.
4. Optional: Select a **Category**.

   NOTE The **Category** drop-down list is only visible if you have defined report categories. See *To organize custom reports* (page 126).
5. Type a name for the report.
6. Click **Create**.
7. Do one of the following:
   - Select **Include only specific control programs at or below this location**, then type the control program names.
   - On the selection tree, select the pieces of equipment you want to view in the report. (Use **Ctrl+click**, **Shift+click**, or both to select multiple items.) Then click **Add**.
8. Optional: Check **Highlight alternate rows** to make the report easier to analyze.
9. Click **Next** or  next to **Columns**.
10. Verify or change the report **Title**, **Page units** of measure for defining column widths, and **Outer border** characteristics.
11. Select a column in the report preview.

    NOTE The selected column is light blue.
12. Under **Column Header**, define how you want the column header to look.
13. Under **Column Data**, define the data you want in the column and how you want it to look. See table below.

    NOTE Select **General** from the **Format** drop-down list unless you want to define the number of places to the right of the decimal point for the displayed value.
14. Optional: Use the **Add**, **Delete**, and arrow buttons below the report preview to manipulate the columns.
15. Optional: Click  next to **Page** to change the page size and orientation.

    NOTE Changing the size and orientation of the printed page also changes the report layout on the **View** tab.
16. Click **Accept**.

17 Click **Run**.

NOTE To run this report later, go to the location where the report was created. Click the **Reports** button drop-down arrow, select the report, then click **Run**.

Type of Column Data		
Point	Displays point data in the column.	
	Display	Select the property to show in this column.
	Data is named differently in some control programs	Select this checkbox if similar points have different names in different control programs. Then add each of the names to the **Name to use** list. For example, if a point is named Zone Temp in one control program and Zone Temperature in different control program, add both names to the list.
	Point to use	Select the name of the point to show in the column.
Trend Sample	**Display**	Select **First**, **Minimum**, **Maximum**, or **Last** recorded trend value.
	Data is named differently in some control programs	Select this checkbox if similar points have different names in different control programs. Then add each of the names to the **Name to use** list. For example, if a point is named Zone Temp in one control program and Zone Temperature in different control program, add both names to the list.
	Trend to use	Select the name of the point to show in the column.
	Set	Click to have all columns in the report use the same time range.
	Time Range	Select the time range to run the report for.
Trend Calculation	**Display**	Select the type of calculation to show in the column, **Average** or **Total**.
	Data is named differently in some control programs	Select this checkbox if similar points have different names in different control programs. Then add each of the names to the **Name to use** list. For example, if a point is named Zone Temp in one control program and Zone Temperature in different control program, add both names to the list.
	Trend to use	Select the name of the point to show in the column.
	Set	Click to have all columns in the report use the same time range.
	Time Range	Select the time range to run the report for.
Control Program	**Display**	Select **Color**, **Display Name**, **Display Path**, **Notes**, **Prime Variable**, or **Reference Name** to show in the column.

Type of Column Data		
Expression	**Data is named differently in some control programs**	Select this checkbox if similar points have different names in different control programs. Then add each of the names to the **Name to use** list. For example, if a point is named Zone Temp in one control program and Zone Temperature in different control program, add both names to the list.
	Expression	Type the path relative to the current control program. The path must return a string value. See Defining WebCTRL® paths for more information on paths. To display the **Notes** on an equipment's **Properties** page, type `.notations` in this field.

To create a Trend Samples report

NOTE To see if your system has this optional package, click  , then select **About**. You have this package if **Enabled Features** shows **Adv. Reporting**.

A **Trend Samples** report provides trend values for a particular time frame.

To create a Trend Samples report:

1. On the **Geographic**  tree, select the location where you want to view the report.
2. Select the **Reports** button drop-down arrow, then select **Add Legacy Report**.
3. Select **Trend Samples**.
4. Optional: Select a **Category**.

   NOTE The **Category** drop-down list is only visible if you have defined report categories. See *To organize custom reports* (page 126).
5. Type a name for the report.
6. Click **Create**.
7. Select a **Time Range** from the drop-down list, then refine that option by selecting an option from the drop-down list(s) to the right.
8. Define the trend data.

   NOTES
   - **Calculate values for missing samples** calculates a value based on the 2 closest values to the time interval.
   - **Find the closest sample** displays the value closest to the time interval selected.
9. Optional: Check **Highlight alternate rows** to make the report easier to analyze.
10. Click **Next** or  next to **Columns**.
11. Verify or change the report **Title**, **Page units** of measure for defining column widths, and **Outer border** characteristics.
12. Select a column in the report preview.

    NOTE The selected column is light purple.
13. Under **Column Header**, define how you want the column header to look.

14 Under **Column Data**, select the source of the trend data and how you want the data to look.

NOTE Select **General** from the **Format** drop-down list unless you want to define the number of places to the right of the decimal point for the displayed value.

15 Optional: Use the **Add**, **Delete**, and arrow buttons below the report preview to manipulate the columns.

16 Optional: Click  next to **Page** to change the page size and orientation.

NOTE Changing the size and orientation of the printed page also changes the report layout on the **View** tab.

17 Click **Accept**.

18 Click **Run**.

NOTE To run this report later, go to the location where the report was created. Click the **Reports** button drop-down arrow, select the report, then click **Run**.

To save a v6.5 or earlier custom report's design for use in another location or system

You can save the design of an Equipment Values report or a Trend Samples report for reuse in another location or in another system. Or, you can create a library of different report designs to pull from as needed.

To save a report's design

1 Create the *Equipment Values* (page 145) or *Trend Samples* (page 147) report.

2 On the **Reports** > **Design** tab, click the **Save Report Design** button. The design is saved to **WebCTRLx.x/webroot/<system>/Reports/<report name>.reportdesign**.

NOTE The .reportdesign file includes the report name. If you save multiple report designs in your system, each of those reports must have a unique name.

To use the report design at a different location in the system

1 Select the location in the **Geographic**  tree.

2 Select **Reports** > **Add Legacy Report**.

3 In step **1**, select **Report design**, then select the report name in the drop-down list.

4 In step **2**, type a report **Name**.

5 In step **3**, click **Create**.

To copy individual report design file(s) to another system

1 In Windows Explorer, go to the **WebCTRLx.x/webroot/<system>/Reports/** folder.

2 Copy the *.reportdesign files that you want.

3 In the new system, paste the copied files in the **WebCTRLx.x/webroot/<system>/Reports/** folder.

4 Follow the steps above in "To use the report design at a different location in the system".

To create a .zip file to import into another system

NOTE The import process will not import a file if it has the same name as a file in the other system. Make sure your file names are unique.

1. Do one of the following:
   - Create a .zip file that contains the *.reportdesign files that you want. These files may be in the **WebCTRLx.x/webroot/<system>/Reports/** folder, or in a library that you created.
   - On the **System Settings** > **General** tab, under **Source Files**, click **Export**.
     NOTE Export creates a .zip file that contains all of the system's source files (control programs, drivers, view files, touchscreen or BACview files, report design files).
2. In the new system, go to the **System Settings** > **General** tab.
3. Under **Source Files**, click **Import**.
4. Browse to the .zip file.
5. Click **Continue**.
6. Click **Close**. The WebCTRL® application will put the imported files in the correct folder.

To edit or delete a v6.5 or earlier custom report

1. Select the item on the **Geographic** tree where the report was created.
2. Click the **Reports** button drop-down arrow, then select the report you want to edit or delete.
3. Do one of the following on the **Design** tab:
   - Edit the report, then click **Accept**.
   - Click the **Delete Report** button, then click **OK**.

Operator access

Privileges control which parts of the WebCTRL® system an operator can access. Privileges also control what an operator can do and what he can change.

To set up operator access to your system:

1. Log in to the WebCTRL® application as the administrator operator. See *Operators and operator groups* (page 153).
2. Define privilege sets by job function. See *Privilege sets* (page 150).
3. Enter each operator in the system by assigning him privilege sets and entering settings that apply only to him. If you need to assign the same privilege set to multiple operators, you can create an operator group and assign the privilege set to the group. See *Operators and operator groups* (page 153).

An operator can change many of his operator settings on the *My Settings page* (page 156).

To access the WebCTRL® interface, an operator must enter his user name and password. You can change the rules for passwords in the *advanced password policy* (page 157).

Restricting operator access

To restrict access to your system, you can:

- Restrict an operator's privileges
- Use *location-dependent operator access* (page 158) (available with the optional Advanced Security package)
- Change a microblock's **Editing Privilege** from **Preset** to a specific privilege. The microblock's properties will be editable only by an operator that has that privilege.

  CAUTION Each microblock property has a default Editing Privilege (represented by the **Preset** option) that is appropriate for that property. Changing **Preset** to a specific privilege changes every property in the microblock to the same privilege which may produce undesirable results.

Privilege sets

A privilege set is a group of one or more *privileges* (page 150). The Administrator creates privilege sets and assigns them to operators and operator groups.

Privileges

This privilege...	allows an operator to...
System Administration Privilege	• Add, edit, and delete operators, operator groups, and privilege sets. • Update the WebCTRL® system with service packs and patches. • Register the WebCTRL® software. See *To register your WebCTRL® software* (page 191). • Enable and set up advanced security features such as *location-dependent operator access* (page 158). • Add and remove WebCTRL® add-ons such as EnergyReports.

This Access privilege...	allows an operator to access (but not edit)...
Access Geographic Locations	pages from the **Geographic** tree.
Access Network Items	pages from the **Network** tree.
Access Groups	pages from the **Schedule Groups** tree.
Access Config Items	pages from the **System Configuration** tree.
Access Alarms	alarms.
Access Logic Pages	**Logic** pages.
Access User Category 1-5	anything in a category that has the same privilege assigned to it. See "To create a custom privilege" below.

This Parameter privilege...	allows an operator to edit properties such as...
Edit Setpoint Parameters	occupied and unoccupied heating and cooling setpoints.
Edit Setpoint Tuning Parameters	demand level setpoint offsets, thermographic color band offsets, heating and cooling capacities and design temperatures, color hysteresis, and learning adaptive optimal start capacity adjustment values.
Edit Tuning and Logic Parameters	gains, limits, trip points, hysteresis, color bandwidths, design temperatures, and optimal start/stop.
Edit Manual Override Parameters	locks on input, output, and network points.
Edit Point Setup Parameters	point number, type, range, and network source and destination.
Edit Restricted Parameters	properties the installer restricted with this privilege.
Edit Category Assignments	Alarm, Graphic, Trend, and Report category assignments.
Edit History Value Reset	elapsed active time and history resets, and runtime hours.
Edit Trend Parameters	enable trend logging, log intervals, and log start/stop times.
Edit Calibration Parameters	point calibration offsets.
Edit Hardware Controller Parameters	driver properties.
Edit Critical Configuration	critical properties the installer protected with this privilege.
Edit Area Name	area display names.
Edit Control Program Name	control program display names.
Edit Alarm Configuration	enabling/disabling alarms and editing alarm messages, actions, categories, and templates.
InterOp Privilege 1 - 10	those protected by password levels 1-10 in SuperVision.

This Functional privilege...	allows an operator to...
Manage Alarm Messages and Actions	add, edit, and delete alarm messages and actions.
Maintain System Parameters	edit all properties on the **System Settings** page.
Maintain Schedules	add, edit, delete, and download schedules.
Maintain Schedule Group Members	add, edit, and delete schedule groups.
Maintain Categories	add, edit, and delete categories.
Maintain Alarm Templates	edit Alarm Template and Reporting Action Templates.
Acknowledge Non-Critical Alarms	acknowledge all non-critical alarms.
Acknowledge Critical Alarms	acknowledge all critical alarms.
Force Normal Non-Critical Alarms	force non-critical alarms to return to normal.

This Functional privilege...	allows an operator to...
Force Normal Critical Alarms	force critical alarms to return to normal.
Delete Non-Critical Alarms	delete non-critical alarms.
Delete Critical Alarms	delete critical alarms.
Execute Audit Log Report	run the **Location Audit Log** and **System Audit Log** reports.
Download Controllers	mark equipment for download and initiate a download.
System Shutdown	issue the Shutdown manual command that shuts down the WebCTRL® Server application.
Engineer System	• log in and make database changes in SiteBuilder. • use the copy, notify, reload, and revert manual commands. • access the **Configure** and **Set up Tree** right-click menus in the WebCTRL® interface. • Add text in the **Notes** field on an equipment's Properties page.
Access Commissioning Tools	access: • Equipment Checkout • Airflow Configuration • Trend, Report, and Graphic categories that require this privilege • Discovery tool
Maintain Graphs and Reports	add, edit, and delete trend graphs and reports. Also required for Time-lapse.
Maintain Connections	edit **Connections** page properties.
Remote File Management	access files using a WebDAV utility.
Remote Data Access-SOAP	retrieve WebCTRL® data through an Enterprise Data Exchange (SOAP) application.
Do not audit changes made using SOAP (Web services)	not have his SOAP (web services) changes recorded in the Audit Log.
Manual Commands/Console Operations	access the manual command dialog box and issue basic manual commands.
Manual Commands/File IO	execute manual commands that access the server's file system.
Manual Commands/Adv Network	execute manual commands that directly access network communications.
Manual Commands/Unrestricted	execute manual commands that bypass all safeguards and may cause unpredictable results if used incorrectly.
Change My Settings	edit his preferences on the **My Settings** page.

To create a custom privilege

You can assign a privilege to a Graphic, Property, Trend, or Report category so that only operators with that privilege can access the category. You assign a category privilege on the page where you create or edit categories.

If all the other privileges are too widely used to accomplish the results you want, you can assign one of the five Access User Category privileges to the operator(s) and category.

For example, your system has 2 graphics categories, HVAC and Lighting/Security. You want HVAC technicians to see only the HVAC graphics and security personnel to see only the Lighting/Security graphics. To do this:

Assign...	To...	Results
Access User Category 1	HVAC graphics category and HVAC technicians only	The security personnel cannot see the HVAC graphics because they do not have Access User Category 1.
Access User Category 2	Lighting/Security Graphics category and Security personnel only	The HVAC technicians cannot see the Lighting/Security graphics because they do not have Access User Category 2.

To add or edit a privilege set

1. On the **System Configuration** tree, select **Privilege Sets**.
2. Click **Add** to create a new privilege set, or select a privilege set to edit.
3. Type the **Name** and **Reference Name** for the privilege set.
4. Check each *privilege* (page 150) that you want to include in the privilege set.
5. Click **Accept**.

CAUTION Include all required access privileges in a privilege set. For example, if you add **Acknowledge Non-Critical Alarms** to a privilege set, also add **Access Alarms** to that privilege set.

TIP (Location-independent security only) To create a privilege set that is similar to an existing set, select the existing set, then click **Add**. The privileges that are initially selected are identical to those of the existing set.

To delete a privilege set

1. On the **System Configuration** tree, select **Privilege Sets**.
2. Select the privilege set to be deleted.
3. Click **Delete**.
4. Click **OK**.
5. Click **Accept**.

Operators and operator groups

When you create a new system in SiteBuilder, you assign a login name and password to the administrator operator. This administrator operator sets up each operator in the WebCTRL® interface by entering the necessary settings and assigning one or more *privilege sets* (page 150) to the operator.

Operator groups give you the ability to assign privilege sets to a group of operators instead of the

individual operators. Operator groups are useful if you have multiple operators who need the same privilege set or you have positions with high turnover rates. You can assign an operator to a group when you enter the operator or when you create the operator group.

NOTE When using hierarchical servers, you must create identical operators on each server in order to navigate across servers.

CAUTION Passwords can be forgotten. To ensure access to the WebCTRL® administrative functions, assign the Admin privilege set to at least 2 operators.

To add or edit an operator

1. On the **System Configuration** tree, select **Operators**.
2. Click **Add** to enter a new operator, or select an operator to edit his settings.
3. Enter information on this page as needed. See table below.
4. Click **Accept**.

Field	Notes
Login Name	The name the operator must type to log in to the system. This name must be unique within the system.
Change password	Enable this field, then type the current and new passwords. **NOTE** An operator can change his password on the *My Settings page* (page 156).
Force User to Change Password at login?	Forces the operator to change his password immediately after his next login. **NOTE** Use this field with the **Change Password** field to create a temporary password that the operator must change after his next login.
Exempt From Password Policy	If **Use advanced password policy** is enabled on the **System Settings** > *Security tab* (page 184), select this option if you do not want the policy to apply to this operator.
Logoff options	If **Log off operators after __ of inactivity** is enabled on the **System Settings** > *Security tab* (page 184), select one of the 3 logoff options.
Personal Information	You can enter contact information for this operator. **NOTE** An operator can enter contact information on the *My Settings page* (page 156).
Starting Location and **Starting Page**	The WebCTRL® location and page that will be displayed after the operator logs in.

Field	Notes
System-wide Privilege Sets	Select the privilege set(s) that you want to assign to the operator. The **Effective System-wide Privileges** list show which privileges the operator will have. **NOTES** • Click **Show current privileges only** to see only the selected privilege sets and privileges. • A grayed out privilege set with a group name beside it indicates the operator is inheriting that privilege set from the group.

TIP To test the settings and privileges that you gave to an operator, you can open a second browser session on your computer and log in as the operator. For instructions on opening a second session in the browser you are using, see *Setting up and using a web browser to view the WebCTRL® interface* (page 176).

To delete an operator

1. On the **System Configuration** tree, select **Operators**.
2. Select the operator.
3. Click **Delete**.
4. Click **Accept**.

To add or edit an operator group

1. On the **System Configuration** tree, select **Operator Groups**.
2. Click **Add** to create a new operator group, or select an operator group to edit it.
3. Type the **Display Name** and **Reference Name** for the operator group.
4. Under **Members**, select the operators and/or groups that you want to add to the new group.
5. Under **Privilege Sets**, select the *privilege sets* (page 150) that you want to assign to the new group.

   NOTE To see what privileges are included in a privilege set, go to the **Privilege Sets** page and then select the privilege set in the table.
6. Click **Accept**.

TIP Every operator is automatically a member of a permanent default group called **Everybody**. You can assign privilege sets to this group.

To delete an operator group

1. On the **System Configuration** tree, select **Operator Groups**.
2. Select the operator group.
3. Click **Delete**.

4 Click **Accept**.

CAUTION When you delete an operator group, its individual members lose the privilege sets that were assigned to the group.

To change My Settings

On the **My Settings** page, you can change settings, such as your:

- Password
- Viewing preferences
- Contact information

NOTE The System Administrator can also change these settings on the **Operators** page.

To change your settings:

1 On the **System Configuration** tree, select **My Settings**.
2 Make changes on the **Settings** or **Contact Info** tab. See table below.
3 Click **Accept**.

Field	Notes
Change password	Enable this field, then type your current and new passwords.
Starting Location and **Starting Page**	The WebCTRL® location and page that will be displayed after you log in.
Language	The language and formatting conventions you want to see in the WebCTRL® interface. **NOTES** • If you will be using a language other than English, see *Setting up your system for non-English languages* (page 206) for additional requirements. • If support for your selected language is removed in SiteBuilder, the WebCTRL® application will automatically assign the System language to you.
Automatically collapse trees	Expands only one tree branch at a time.
Automatically download schedules on each change	Select to automatically download all new schedules that you create and schedules that you change.

Play sound at browser when server receives	Check **Non-critical alarms** or **Critical alarms** if you want the system to audibly notify you when that type of alarm is received. You can specify a different sound file. • Internet Explorer®, Firefox®, and Safari® support .wav, .mp3, or .au files. • Google™ Chrome™ supports .wav or .mp3 files. 1 Put your file in the **webroot_common\lvl5\sounds** folder. 2 In the **Sound File** field, replace **normal_alarm.wav** or **critical_alarm.wav** with the name of your sound file. **NOTE** You can put your sound file anywhere under the **WebCTRLx.x** folder, but you must change the path in the **Sound File** field.

Advanced password policy

This feature lets you define the requirements for operator passwords.

1 On the **System Configuration** tree, select **System Settings**.

2 On the **Security** tab under **Operators**, enter information in the fields described below.

NOTE See *System Settings* (page 181) for information on all the other fields.

Field	Notes
Use advanced password policy	Enable this field to define rules for passwords. An operator's login name and password must be different when this policy is enabled. After you change the password policy, any operator whose password doesn't meet the new requirements will not be locked out of the system, but will be prompted to create a new password.
Passwords must contain	You can specify how many characters and which of the following types of characters a password must contain: • Numbers • Special characters—any keyboard character that is not a number or letter. • Letters—uppercase, lowercase, or both.
Cannot be changed more than once every __ days.	Enter a number to limit how often users can change their passwords. When set to 0, users can change them as often as they want.
May not be reused until __ different passwords are used.	Enter a number between 1 and 20. Enter 0 to reuse passwords without a delay.
Expire after __ days	Enable to set the number of days an operator can use his password before the system requires him to change it. Enter a number between 1 and 999.
Force expiration	Click this button to force every user's password to expire. Each user will be prompted to change their password when they next attempt to log in to the WebCTRL® interface.

NOTE The Advanced password policy settings do not synchronize across hierarchical servers. You should set up each system with the same advanced password settings to avoid problems when navigating between the systems.

Advanced security

Location-dependent operator access

With the Advanced Security package, you can set up operator access to your system to be location-dependent. This type of operator access lets you assign privileges to an operator only at locations in the system where he needs them. For example, you could assign an operator mechanic privileges in one building in a system, view-only privileges in another building, and no privileges in a third building.

New and converted WebCTRL® systems default to location-independent operator access in which an operator's privileges apply throughout the system. You should understand this type of operator access before switching to location-dependent. See *Operator access* (page 149) for more information on location-independent operator access.

NOTE When using hierarchical servers, the security policy and privilege sets are local to each server, so you can have location independent security on one server but not on another.

To switch to location-dependent access

CAUTIONS

- Create a backup of your system before you begin. Switching to location-dependent operator access changes the configuration of operators and privilege sets. If you need to revert to location-independent operator access, your previous configuration cannot be automatically restored.
- If you change the policy after you create and assign privilege sets to operators, you may need to reconfigure your operators' privileges.

To switch to location-dependent operator access:

1 On the **System Configuration** tree, select **System Settings**.
2 On the **Security** tab under **Security Policy**, click **Change Policy**.
3 Follow the on-screen instructions.

Privileges and privilege sets

When using location-dependent operator access, privileges are either system-wide or local.

System-wide privileges allow an operator to perform functions throughout the entire system, such as accessing the Configuration tree or performing a system shutdown.

Local privileges allow an operator to perform functions in a specific area of the system, such as editing setpoints or viewing alarms. Assigning any local privilege to an operator also allows him to change his password and set preferences on his *My Setting*s (page 156) page.

You assign system-wide privileges to system-wide privilege sets and local privileges to local privilege sets. Use the following table in planning which privileges to assign to a privilege set. For a description of each privilege, see *Privileges* (page 150).

System-wide privileges	Local privileges
Access Groups	Access Geographic Locations
Access Config Items	Access Network Items
Maintain System Parameters	Access Alarms
Maintain Schedule Group Members	Access Logic Pages
Maintain Categories	Access User Category 1 - 5
Maintain Trends Display and Print Setup	Edit Setpoint Parameters
Maintain Alarm Templates	Edit Setpoint Tuning Parameters
Acknowledge Non-Critical Alarms	Edit Tuning and Logic Parameters
Acknowledge Critical Alarms	Edit Manual Override Parameters
Force Normal Non-Critical Alarms	Edit Point Setup Parameters
Force Normal Critical Alarms	Edit Restricted Parameters
Delete Non-Critical Alarms	Edit Category Assignments
Delete Critical Alarms	Edit History Value Reset
Execute Audit Log Report	Edit Trend Parameters
Download Controllers	Edit Calibration Parameters
System Shutdown	Edit Hardware Controller Parameters
Engineer System	Edit Critical Configuration
Access Commissioning Tools	Edit Area Name
Maintain Graphs and Reports	Edit Control Program Name
Maintain Connections	Edit Alarm Configuration
Remote File Management	InterOp Privilege 1 - 10
Remote Data Access-SOAP	Manage Alarm Messages and Actions
Do not audit changes made using SOAP (Web services)	Maintain Schedules
Manual Commands/Console Operations	
Manual Commands/File IO	
Manual Commands/Adv Network	
Manual Commands/Unrestricted	
Change My Settings	

NOTES

- For an operator to add, edit, or delete schedule groups, he must have the system-wide privilege Maintain Schedule Group Members. He must also have the local privileges Access Geographic Locations and Maintain Schedules at each location that is a member of the schedule group.
- If you switch to location-dependent operator access in a system that has operators and privileges set up, the WebCTRL® application splits any existing privilege set containing local and system-wide privileges into 2 separate privilege sets - one local and one system-wide. Operators' system-wide privilege sets still apply throughout the system. The operators' local privilege sets are automatically assigned at the system level. You can then reassign the local privilege sets to the operators at the locations where they need them.

To add a privilege set

Adding a privilege set using location-dependent operator access is the same as using location-independent operator access except that you must select whether you are adding a system-wide or local privilege set. See *Privilege sets* (page 150).

To assign privilege sets to an operator

Assign a **system-wide** privilege set to an operator on the Operators page in the same way you would assign privilege sets in a system using location-independent operator access. See *Operators and Operator Groups* (page 153).

Assign a **local** privilege set to an operator at locations on the **Geographic** or **Network** tree where he needs the privileges.

1. Select a location on the **Geographic** or **Network** tree.
2. Click **Privileges**.
3. On the **Configure** tab, click **Add**.
4. Select the operator or operator group.
5. Click **OK**.
6. Select the privilege set(s) that you want the operator to have.
7. Click **Accept**.

NOTE You can display icons and hover text on the **Geographic** tree that show where privileges have been assigned. See *Tree icons and hover text* (page 10).

To delete a local privilege set assignment

1. On the **Geographic** or **Network** tree, select the location where the assignment was made.
2. Click **Privileges**.
3. Select the assignment under **Privilege Set Assignments at this Level**.
4. Click **Delete**.
5. Click **Accept**.

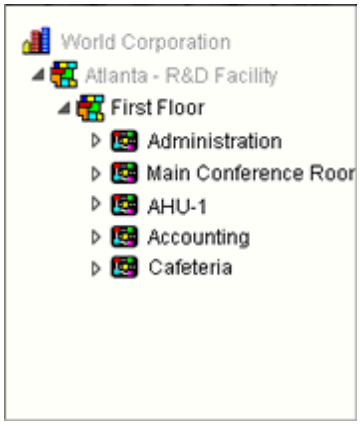
Restricting access in the system

Restricting an operator's access to areas of the system

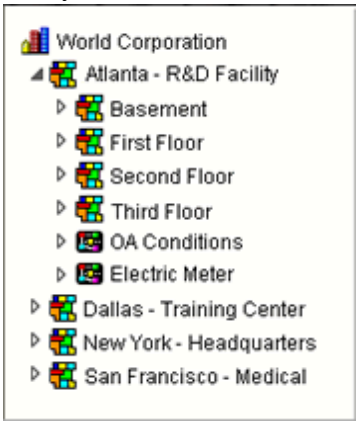
You can give an operator access to only a specific area of the system. All other areas will be either grayed out or not visible when the operator logs in to the WebCTRL® interface.

EXAMPLE If you give an operator the Access Geographic Locations privilege only at the first floor of the system shown below, he will see a navigation tree like the one on the left. The areas above the first floor are visible because he needs them to navigate to the first floor, but grayed out because he cannot access them. The operator does not see Dallas, New York, or San Francisco because he can't access them and does not need them to navigate.

Restricted access



Full system access



Restricting all operator access to a location

To remove all operators' local privileges from a location so that you can assign access only to a specific operator(s), navigate to the location, select **Privileges**, then uncheck **Inherit security privileges from above this level**.

Security Assignments Report

A Security Assignments Report shows an operator's local and system-wide privileges and privilege sets at a specific location.

1. Select the location on the **Geographic** or **Network** tree.
2. Click the **Reports** button drop-down arrow, then select **Security** > **Security Assignments**.
3. On the **Options** tab, select an operator.
4. Click **Run**.

Recording reasons for edits (21 CFR Part 11)

The Advanced Security package provides support for 21 CFR Part 11. With this feature enabled, the WebCTRL® application can require an operator to record a reason for changing an equipment property, or acknowledging an alarm, before it accepts the change. The WebCTRL® Audit Log report then displays the operator's name and the recorded reason for making the change.

To set up equipment to require reasons for changes

1 On the WebCTRL® **Geographic** or **Network** tree, right-click the equipment, then select **Configure**.

2 Check **Require operator to record any changes to control program and when acknowledging alarms**.

3 Click **Accept**.

NOTE You can also turn this setting on in SiteBuilder in the equipment's properties dialog box.

To view reasons for changing equipment properties

1 On the WebCTRL® tree, select a piece of equipment that requires reasons for change.

2 Click the **Reports** button drop-down arrow, select **Security** > **Location Audit Log** or **System Audit Log.**

3 On the **Options** tab under **Display the following columns**, check **Reason**.

Click **Run**.

Cost-saving strategies

HVAC equipment runs to maintain adequate zone temperatures. Some zones, like classrooms, must maintain a comfortable temperature only while people occupy them. When a zone is no longer occupied, you can define different setpoints that require less energy to maintain. Use WebCTRL®

Schedules for these occupied/unoccupied zones so that equipment runs only as needed to reduce energy consumption, but not comfort.

Other zones, like computer server rooms and production floors, must maintain particular cooling and heating setpoints 24 hours a day, 7 days a week. Schedules would have no cost-saving effect on them. Use one of the other cost-saving strategies to reduce energy consumption and equipment repairs for these kinds of zones.

You can realize the greatest savings by using Schedules. Then fine tune Optimal Start, Demand Control, and Setpoint Optimization. Each strategy depends on a particular microblock.

Microblock	Strategy	Description
	*Schedules* (page 43)	Define when a building or zone is occupied and whether or not equipment should run, depending on the occupied setpoints.
	*Optimal Start* (page 38)	Ensures that a zone's ideal comfort range is reached just as the zone becomes occupied.
	*Demand Control* (page 40)	Relaxes heating or cooling setpoints when a certain level of energy use is reached in order to avoid peak demand, ratchet, or time of use electric charges.
	Setpoint Optimization (Trim and Respond)	Calculates a piece of equipment's setpoint based on the number of heating or cooling requests it receives from other equipment.

Advanced topics

Manual commands

To run a manual command:

1 Click  , then select **Manual Command**.

2 Type the manual command in the dialog box, then click **OK**.

TIP **Ctrl+Shift+M** also opens the dialog box.

You must have the Manual Commands/Console Operations privilege to access the manual commands dialog box. The descriptions below tell you if you need an additional privilege to run the corresponding command.

Command	Description
addon	Opens a dialog box where you can upload, start, stop, or remove an add-on program such as Trend Export.
arcnet	Run this command each time you plug a device, such as a laptop, into a controller using an ARCNET card. The arcnet command configures the WebCTRL® application to recognize your device as the WebCTRL® server. Run this command from the equipment, controller, or network level on the **Network** tree.
autopilot location	In Internet Explorer® only–Displays the full path for the current location. You can copy and paste the path into the autopilot.xml file that runs the WebCTRL® autopilot. See *Running the WebCTRL® autopilot* (page 170).
bacnet bind show	Shows the selected device's current BACnet bindings.
bacnet bind clear	Clears the selected device's BACnet bindings so that they can be rediscovered.
bacnet showindex	Displays all files (file name, size, date) downloaded to the selected controller.
bbmd commands:	You must have the Manual Commands/Adv Network privilege to run bbmd commands.
bbmd read <IP address>	Reads the BBMD table of the controller at the given IP address. For example, to display the BBMD table in the BACnet device router at IP address 154.16.12.101, type: `bbmd read 154.16.12.101`

Command	Description
bbmd update <network number>	Selects BBMDs on the specified network and marks them for download. If no network is entered at the end of the command, all networks in the system are scanned. For example, if the network number is 888, type: `bbmd update 888`
bbmd view <network number>	Views the list of BBMDs that have been selected for the network number at the end of the command. Assumes the update has been run. For example: `bbmd view 888`
bbmd write <table file> <IP address>	Writes the BBMD table into the controller at the given IP address. See To set up BBMDs through the WebCTRL® interface. For example, to write the BBMD table in dallasbbmd.bdt into the BACnet device router at IP address 154.16.12.101, type: `bbmd write dallasbbmd.bdt 154.16.12.101`
bbmd clear <IP address>	Clears the BBMD for the specified controller. For example: `bbmd clear 154.16.12.101`
bbmd dump <network> <file>	Writes to a file the BBMD from the specified controller. For example: `bbmd dump 888 dallasbbmd.bdt`
checkurls	1 Finds all network point exp: expressions for the selected item on the **Geographic** or **Network** tree. 2 Converts the exp: expressions to bacnet:// equivalent expressions that the controllers use. 3 Compares the equivalent bacnet:// expressions to the bacnet:// expressions currently downloaded in the controllers. 4 Displays any mismatches.
checkurls -p	Does the same as checkurls, then adds any mismatches to the download queue as parameter downloads.
checkurls -v	Does the same as checkurls, but displays the exp: and bacnet:// expressions for all network points that were checked.
commstat	Gives a complete set of diagnostic information for all defined connections as well as information regarding all modems in the system.
copy	Displays a global copy utility that allows you to selectively copy trend graphs, custom reports and all editable properties from the selected equipment to other equipment in the system with the same control program. See *To use Global Copy* (page 29).
download commands:	Each of these commands performs an immediate download to a controller for the selected control program, device, or driver.
download m	Downloads all content, including parameters, schedules, and BBMDs (if applicable).
download p	Downloads parameters only.

Command	Description
download s	Downloads schedules only.
go commands:	

go <refname or path>	Goes to the point in the system that is referenced.
	For example:
	`go #oa_conditions`
	or
	`go vav_1/m28`
	See Defining WebCTRL paths.

go ~net	Takes you from a piece of equipment on the **Geographic** tree to the same equipment on the **Network** tree.
go ~geo	Takes you from a piece of equipment on the **Network** tree to the same equipment on the **Geographic** tree.
go ~device	Takes you to the controller for a point or piece of equipment on the **Network** tree.
go ~network	Takes you to the network the selected object's controller is associated to.
go -logicpopup <refname>	Goes to the microblock pop-up for the microblock that is referenced. You must run this command from the microblock's equipment in the navigation tree. For example: `go -logicpopup lstat`
go <device ID>	Goes to a device on the **Network** tree. For example, to go to device 301205 referenced in a dead module alarm, type: `go 301205`
go <device ID>/<object ID>	Goes to a device and object on the **Geographic** or **Network** tree. For example: `go 300550/AI:3`
go <object ID>	Goes to an object for the current device on the **Geographic** or **Network** tree. For example, if a module alarm reports a control program Locked I/O Alarm and references an error in program 11, click the link to go to the device, then go to the object by typing: `go PRG:11`
go <s.g.m.p>	(site, gateway, controller, program) Goes to the item that the s.g.m.p address references. Use this command for legacy equipment only. For example: `go 2,1,4,1`

Command	Description
localhost	Shows the IP address of the WebCTRL® server
logoffuser	Logs off a user (without warning the user). Type a `whoson` manual command to view the IDs of logged in operators, then type `logoffuser x`, where x is the user's ID.
markdownload commands:	These commands place the controller for the selected tree item on the list to download at a later time. The download list can be viewed at **Network** tree > **Downloads**.
markdownload	Marks for an All Content download, that includes parameters, schedules, and BBMDs (if applicable).
markdownload p	Marks for a Parameters download.
markdownload s	Marks for a Schedules download.
memory	Shows the amount of server memory allocated for the WebCTRL® application and the amount being used.
memory -free	Releases unused server memory, then shows the WebCTRL® memory usage before and after the release.
modstat commands:	These commands display a Modstat report. **NOTE** It is not necessary to download a controller before running a Modstat on it. Binding takes place when you run the modstat.
modstat	Displays status of the controller at the current location, including: • Hardware components of the device • Software components of the device • Error conditions that may exist in the device • Date and time the device is using
modstat 8:<device instance number>	Displays status for a specific controller in the IP network using the controller's ID. Your location in the system does not have to be the controller you are querying. For example: `modstat 8:489202`

modstat mac:<network number>,<media type>:<mac address>	Displays a Modstat for a specific controller in the system using the controller's MAC address. Network number is the number of the network this controller is on as specified in SiteBuilder; media type is the type of network the controller is on; MAC address can be either the controller address or the IP address and depends on the controller's media type.
	For example:
	`modstat mac:48161,ms/tp:2`
	or
	`modstat mac:888,bacnet/ip: 172.16.101.119`

Command	Description
notify	Sends a message to all operators currently logged in to the system. For example, "The server is going to shut down in 5 minutes. Please log off." To run this command, type: `notify <your message>`. The message must use only alphanumeric characters. You must have the Admin privilege set or the Engineer System privilege to run this command.
paramupload	Uploads parameters (editable properties) to the WebCTRL® application from the equipment or driver at the current location and below. If you want to upload editable properties for all equipment on a floor, navigate to the floor level on the **Geographic** tree. If you want to do this for everything under a particular router, navigate to the router or the network on the **Network** tree. You must have the Manual Commands/Adv Network privilege to run this command.
ping	Ping to verify communication between to IP devices. You cannot ping devices on non-IP networks. To run this command type: `ping <hostname>` where <hostname> is the IP address or device name. For example: `ping 192.168.168.1` (will ping the IP address 4 times)
rebootserver	Restarts the WebCTRL® Server application. You must log back in to the WebCTRL® interface if you want to continue. You must have the System Shutdown privilege to run this command.
rebuild	Rebuilds a Properties page. If you make changes to control program property text in the EIKON® application, navigate to a control program in the WebCTRL® tree, and then run this command to see your changes.
reload	Reloads a control program. Use if you make changes to control program in the EIKON® application. Reloading updates all instances of the control program throughout the system and marks the controller(s) for download. The WebCTRL® application determines the type of download based on what changed in the control program. You must have the Engineer System privilege to run this command.
restartmodule	Restarts the current controller. You must have the Manual Commands/Adv Network privilege to run this command.
rnet here	Overrides the address configuration of the Rnet host controller to allow a subsequent All Content or Parameters download. Run this command if you experience communication problems with the controller because the controller's network number does not agree with SiteBuilder's network number. Run this command from a control program, device or driver.
revert	Resets the selected driver or control program to its default values.
setdefault	Sets the current page as the default view for the selected action button and the selected tree location. You must have the Engineer System privilege to run this command.

Command	Description
setgcm	Initializes any LANgate (gateway) from a converted SuperVision® system. After downloading to the LANgate, run setgcm if you: • Added a controller to a CMnet where the address is set higher than any other address on the CMnet • Changed the 3-letter system name • Changed the **Generate controller alarm after no communication for ___ minutes** (dead module timeout value) on the **System Settings** page • Changed the site number in SiteBuilder (previously referred to as the line number) setgcm sends the following information from the WebCTRL® database to the LANgate: • Maxnet (the highest addressed controller plus one) • 3-letter system name • Site number • Dead module timeout value **NOTES** • You can send this command over network, direct or modem connections, but not over a direct network (access port). • In Supervision®, the command set the workstation phone number in the LANgate. You must now type the LANgate's phone numbers on the LANgate's parameter pages. • You must have the Manual Commands/Adv Network privilege to run this command.
showhistory	Gives historical information on the system, such as when it was created and updated. You must have the Manual Commands/Unrestricted privilege to run this command.
shutdown	Shuts down the WebCTRL Server application. This stops communication between the server and the client, but does not close any open WebCTRL® pages. You must have the System Shutdown privilege to run this command.
storetrends	Uploads trend data from the controller(s) to the database for all equipment at and below the selected item on the **Geographic** tree. This command stores trend data for points that have Trend Historian enabled.
timesync	Synchronizes the time on all controllers at the current location and below to the time on the server. Run this command only from a location on the **Network** tree. **NOTE** For CMnet networks, executing a timesync on a controller sends the timesync to its gateway, and all the controllers under that gateway. You must have the Manual Commands/Adv Network privilege to run this command.

Command	Description
updatedriver commands:	You must have the Engineer System privilege to run updatedriver commands.
updatedriver	Updates the selected controller to the latest version of its driver.
updatedriver net	Updates the selected controller to the latest version of its driver and any other controllers on the same network that use that driver.
updatedriver all	Updates the selected controller to the latest version of its driver and all other controllers in the system that use that driver.
upgradejsp commands:	Upgrading to a v6.0 or later system automatically upgrades any .jsp graphics created in WebCTRL® Extensions for FrontPage. If you edit one of the .jsp files after upgrade, you must run one of the following commands. These commands could take several minutes to complete. A message is displayed when finished.
upgradejsp <absolute path>	Use to update a single graphic. For example: c:\webctrlx.x\webroot\<system>\graphics\lvl5\sitea\building1.jsp
upgradejsp <folder path>	Use to update all graphics in a folder. For example: c:\webctrlx.x\webroot\<system>\graphics\lvl5\sitea
upgradejsp all	Use to update all graphics in c:\webctrlx.x\webroot\<system>\graphics\lvl5
whereami	Displays the full path for the current location and gives the display and reference names of the action button, category, instance and tab. If the selected tree location differs from the location shown in the action pane (for example, a point trend page), whereami returns information on both locations. Use this command when you create links in ViewBuilder.
whoson	Shows the list of users currently logged in to the WebCTRL® system, the IP addresses from where they are logged on, what kind of interface they are using (for example, lvl5 for a web browser on a computer), and how long it has been since they have actively interfaced with the WebCTRL® system.
zap	Restarts the current controller. You must have the Manual Commands/Adv Network privilege to run this command.

Running the WebCTRL® autopilot

To monitor your WebCTRL® system, you can run the autopilot to display specified WebCTRL® pages at regular intervals. You can run the autopilot on the WebCTRL® server or on one or more client computers. Each computer can display a different set of pages.

REQUIREMENT You must have the Internet Explorer® web browser installed on any computer that will run the autopilot. Autopilot is not supported on other web browsers.

To set up the WebCTRL® autopilot

1. Copy the **WebCTRLx.x\autopilot** folder from the WebCTRL® system to any location on the computer where you will be running the autopilot.
2. In a text editor such as Windows® Notepad, open the **autopilot.xml** file in the new folder you created in step 1.

   CAUTION Do not open or edit the original autopilot.xml file in the WebCTRL® system. Keep this file to set up the autopilot on other computers.
3. In the row that begins with **<script**, replace the highlighted text shown below with the information needed to start your system.

   NOTES
   - The **Attribute** list near the top of the file describes each field.
   - To prevent exposing someone's password in this file, create a generic user and password in the WebCTRL® interface.

4. Each pair of rows beginning with **<navigate** and **<delay** define a page in WebCTRL® and how many seconds the page should display. Follow the steps below to replace each **<navigate** line with information specific to your system. Add or delete rows as needed.
   a) In the WebCTRL® interface, go to the page you want to display.
   b) Press **Ctrl**+**M**.
   c) Type `autopilot location`.
   d) Click **OK**.
   e) Copy the path to the Windows clipboard.
   f) In the **autopilot.xml** file, highlight a **<navigate** row, then press **Ctrl+V** to replace the highlighted text with the copied WebCTRL® path.

   NOTE To have the autopilot run a report, define the path to the report's **View** tab.
5. In the **<delay** row below each path, change 20 to the number of seconds you want to display the WebCTRL® page.
6. Save the file.

To run the WebCTRL® autopilot

NOTE If your computer is running Windows Vista®, see *To run autopilot with Windows Vista* (page 172) before starting the autopilot.

1. Start the WebCTRL Server application.
2. Run the **autopilot.bat** file that you created in step 1 of *To set up the WebCTRL® autopilot* (page 171).

NOTES

- To stop the autopilot, do one of the following:
  - Close the web browser.

- Close the Command Prompt window that is running the **autopilot.bat** file to stop the autopilot but leave the WebCTRL® interface running in the web browser.

- If the autopilot does not start, open **autopilot.log** to see the error.

To run autopilot with Windows Vista

To run the autopilot with the Windows Vista® operating system, you must add the WebCTRL® URL to your web browser's trusted sites.

1. In Internet Explorer®, select **Tools** or  > **Internet Options**.
2. On the **Security** tab, select the **Trusted Sites** icon, then click the **Sites** button.
3. Under **Add this Web site to the zone**, type the url that autopilot uses to start your system. See step 3 in *To set up the WebCTRL® autopilot* (page 171).
4. Uncheck **Require server verification (https:) for all sites in this zone**.
5. Click **Add**.
6. Click **OK** to close both windows.
7. Close Internet Explorer to have the changes take effect.

System database maintenance

You should perform the following system maintenance on a regular basis. See *To safely shut down the WebCTRL® application for database server maintenance* (page 174) before doing any maintenance on your database server.

To back up a system

The type of database your system uses determines the method you use to back up the system. In WebCTRL®, you can find the database type on the *System Settings* (page 181) > General tab.

 **CAUTION** Do Not use SiteBuilder's Replicate feature to back up your database.

For Apache Derby or SQL Server Express

1. Shut down the SiteBuilder and WebCTRL Server applications.
2. In the **WebCTRLx.x\webroot** folder, copy your system folder.
3. Paste the copy to a new location.

 **TIP** Zip the copy before transporting it over a network or to a CD.

For MySQL, MS SQL Server, Oracle, or PostGreSQL

1. Follow the instructions above to copy your system folder in **WebCTRLx.x\webroot.**
2. Use the database management system's backup method. See *To safely shut down the WebCTRL® application for database server maintenance* (page 174) before doing any maintenance on your database server.

To compact and defragment

In a new WebCTRL® system, the records in a database are contiguous. As records are added, deleted, and modified, the records become scattered in the database. This condition, called fragmentation, can slow down system performance and increase the database size. Compact the database to correct this situation.

The files on the server's hard drive can also become fragmented. Defragment the hard drive to correct this situation.

You should compact and defragment on a regular schedule such as once a month. But, you may need to do these more often, depending on how often the data or files change.

NOTE Compacting a database may take several minutes to several hours, depending on its size.

 **TIP** To minimize the effects of fragmentation, you should maintain at least 20% free disk space on the server.

Compacting the database

The following databases are compacted dynamically—compacting occurs in the background when a database is open.

- MySQL
- MS SQL Server
- MS SQL Server Express
- Oracle
- PostGreSQL

To compact a Derby database:

1. Shut down the SiteBuilder and WebCTRL® Server applications.
2. Open the computer's Command Prompt application and type `cd c:\WebCTRLx.x`, replacing x.x with your system version number.
3. Click **Enter**.
4. Type `"Derby Compression Tool.exe" <system name>`.
5. Click **Enter**.
6. When compacting finishes, close the command window.

Defragmenting the server's hard drive

For all database types, use a defragmentation utility such as Windows® Disk Defragmenter.

NOTE If you are using a single computer as both the WebCTRL® server and the client, you must defragment the disk more often than the disk of a dedicated server—especially if people access the Internet from this computer.

To minimize the database size

The larger a database is, the less responsive it may become. Deleting closed alarm incident groups, expired schedules, and expired historical trends on a regular basis will reduce the database size. You can set up your WebCTRL® application to automatically delete these. See "System Settings > *Scheduled Tasks tab* (page 187)" in WebCTRL® Help.

To safely shut down the WebCTRL® application for database server maintenance

Occasionally, the database server is shut down for maintenance or backups. If this is done without shutting down the WebCTRL® Server first, the database may get locked and the WebCTRL® application may not be able to reconnect.

1. Shut down the WebCTRL® application.
2. Shut down the database server.
3. Perform the maintenance or repair needed on the server.
4. Restart the database server.
5. Restart the WebCTRL® application.

Setting up WebCTRL® client devices and web browsers

The WebCTRL® system can be viewed on the following client devices and web browsers.

Computers

The client computer should have at least:

- Dual core processor
- 1.5 GB RAM
- Communications link of 10 Mbps or higher

The WebCTRL® application will work with slower computers and slower links, but the results may not be satisfactory.

A computer with this operating system...	Supports these web browsers...

Windows®	Google™ Chrome™ v66.0 or later [1] Internet Explorer® v11 Desktop Microsoft® Edge v40 or later Mozilla® Firefox® v60.0 or later
Mac® OS X® (Apple® Mac only)	Safari® v11 or later [2] Google Chrome v66.0 or later Mozilla Firefox v60.0 or later
Linux®	Google Chrome v66.0 or later Mozilla Firefox v60.0 or later

[1] Best performance

[2] Best performance unless browser is running on a Mac® Mini or a MacBook:

WARNING If machine is running Mountain Lion 10.8x with an integrated Intel HD 400 graphics card, it will experience display issues. Use one of these workarounds for better performance:

- If an additional NVIDIA graphics card is available, manually switch the graphic card setting in MAC® OS X® to use that card.
- If not, use Google™ Chrome™ v66.0 or later.

Mobile devices

Device type	Platform support
Smart phone	Android™, iOS
Tablet	Android™, iOS, Surface™

NOTE Some functionality may be limited by the capability of the mobile device and operating system.

Setting up and using a computer with the WebCTRL® system

- Set the monitor's screen resolution to a minimum of 1920 x 1080 with 32-bit color quality
- You may want to disable the computer's navigation sounds.

Mac only

NOTE The instructions below are for a Mac OS X 10.8. Other versions may vary slightly. See your computer's Help if necessary.

Computer settings	To change setting...
Enable right-clicking to see right-click menus:	

On a Mac	1	Select **System Preferences** > **Mouse**.
	2	Click the drop-down list that points to the mouse's right-click button, then select **Secondary Button**.
On a MacBook	1	Select **System Preferences** > **Trackpad**.
	2	Enable **Secondary click**.

The instructions in Help are for a Windows computer. For instructions that include the **Ctrl** key, replace **Ctrl** with **Command**. For example, replace **Ctrl+click** with **Command+click**.

Setting up and using a web browser to view the WebCTRL® interface

To set up and use Internet Explorer

NOTES

- The instructions below are for Internet Explorer® 11. Other versions may vary slightly. See your web browser's Help if necessary.
- If the menu bar is not visible, right-click on the window's header, and then select **Menu bar**.

Web browser settings	To set in Internet Explorer...
Accept First-party and Third-party cookies	**Tools** > **Internet Options** > **Privacy** > **Advanced** button
Automatically check for newer versions of stored pages	**Tools** > **Internet Options** > **General** > **Browsing history** > **Settings** button
Load ActiveX Control	**Tools** > **Internet Options** > **Security** > **Custom Level** button. Under **ActiveX controls and plug-ins**, set the following: • **Download signed ActiveX controls** > **Prompt** • **Download unsigned ActiveX controls** > **Disable** • **Run ActiveX controls and plug-ins** > **Enable** • **Script ActiveX controls marked safe for scripting** > **Enable**
Select Play animations in web pages	**Tools** > **Internet Options** > **Advanced** > under **Multimedia**
Disable all the options on the Explorer Bar	**View** > **Explorer Bars**
Disable web browser's pop-up blockers	**Tools** > **Pop-up Blocker** > **Turn Off Pop-Up Blocker**
Disable external toolbar pop-up blockers	Varies
Hide the web browser's toolbars	**View** > **Toolbars**

To...	Do the following...
Maximize the web browser window	Press **F11** to turn full-screen mode on\off, or use the minimize/maximize button in the top right corner of the browser window.

To...	Do the following...
Have 2 different users logged in to the WebCTRL® system on the same computer	Start a new web browser session. Select **File** > **New Session**.
Clear browser cache	**1** Select **Tools** > **Internet Options**. **2** Click **Delete**. **3** If you had the WebCTRL® system saved as a Favorite, uncheck **Preserve Favorites website data**. **4** Click **Delete** again.

To set up and use Microsoft Edge

The instructions below are for Microsoft® Edge.

Web browser settings	To set in Microsoft Edge...
Do not block cookies	**More Actions** > **Settings** > **View Advanced Settings** > **Cookies**
Disable web browser's pop-up blockers *	**More Actions** > **Settings** > **View Advanced Settings** > **Block pop-ups**

To...	Do the following...
Maximize the web browser window *	Use the minimize/maximize button in the top right corner of the browser window.
Have 2 different users logged in to the WebCTRL® system on the same computer *	**More Actions** > **New Window**
Clear browser cache	**More Actions** > **Settings** > **Clear browsing data** > **Clear**

* Does not apply to Microsoft Edge on a phone.

To set up and use Mozilla Firefox

NOTES

- The instructions below are for Mozilla® Firefox® v60.0 on a Windows operating system. Other versions may vary slightly. See your web browser's Help if necessary.
- If the menu bar is not visible, right-click on the window's title bar, and then select **Menu bar**.
- If a message appears in the WebCTRL® interface that includes the checkbox **Prevent this page from creating additional dialogs**, DO NOT check this box.

Web browser settings	To set in Firefox...

Web browser settings	To set in Firefox...
Disable Pop-up blocker	1 Click **Tools** > **Options** > **Privacy & Security**. 2 Under **Permissions**, click **Exceptions** next to **Block pop-up windows**. 3 Type `http://` (or `https://`) and then the server name or IP address of your system. 4 Click **Allow** and then **Save Changes.**
Enable JavaScript	1 In the address bar, type `about:config`, and then press **Enter**. 2 Click **I accept the risk**. 3 In the **Search** bar, type `javascript.enabled`. 4 If the value field shows **true**, JavaScript is enabled. If it shows **false**, right-click **javascript:enabled**, and then select **Toggle**.
Add-ons Manager	Select **Tools** > **Add-ons** > **Extensions**. On this page, you can enable/disable installed add-ons such as: • Adobe® Acrobat® Reader (to view PDF's) • QuickTime Plug-in (to play audible alarms) Only installed Firefox add-ons will show up in the list.

To...	Do the following...
Maximize the web browser window	Press **F11** to turn full-screen mode on\off.
Clear browser cache	1 Click **Tools** > **Options** > **Privacy & Security**. 2 Under **Cookies and Site Data**, click **Clear Data**. 3 Click **Clear**.
Have 2 different users logged in to the WebCTRL® system on the same computer	Start a new web browser session. Select **File** > **New Private Window**.

To set up and use Google Chrome

NOTES

- The instructions below are for Google™ Chrome™ v66.0. Other versions may vary slightly. See your web browser's Help if necessary.
- If a message appears in the WebCTRL® interface that includes the checkbox **Prevent this page from creating additional dialogs**, DO NOT check this box.

On a computer

Web browser settings	To set in Chrome...
Enable pop-ups	1 Click on the browser toolbar. 2 Select **Settings**. 3 Click **Advanced** at the bottom of the page. 4 Under **Privacy and security**, click **Content settings**. 5 Under **Pop-ups** > **Allow**, click **ADD**, and then type http:// (or https://) and then the server name or IP address of your system.

To...	Do the following...
Clear browser cache	1 Click on the browser toolbar. 2 Select **More tools** > **Clear browsing data**. 3 Select a time range in the drop-down list. 4 Check the types of information that you want to remove. 5 Click **CLEAR DATA**.
Maximize the web browser window	Press F11 on your keyboard to turn full-screen mode on/off.
Have 2 different users logged in to the WebCTRL® system on the same computer	Start a new web browser session. Click  , then select **New incognito window**.

On a Google Nexus

Web browser settings	In the Chrome menu...
Turn off desktop mode	Uncheck **Request desktop site**
Disable pop-up blocker	**Settings** > **Advanced** > **Content Settings** > uncheck **Block pop-ups**
Enable JavaScript	**Settings** > **Advanced** > **Content Settings** > check **Enable JavaScript**
Enable Cookies	**Settings** > **Advanced** > **Content Settings** > check **Accept Cookies**

To...	In the Chrome menu...
Clear browser cache	**Settings** > **Advanced** > **Privacy** > **CLEAR BROWSING DATA**

To set up and use Safari

NOTES

- The instructions below are for Safari® v11. Other versions may vary slightly. See your web browser's Help if necessary.

- We recommend that you do not run Safari in full-screen mode. If you do, WebCTRL® pop-ups will open full-screen, covering the main application window.

On an Apple® computer (Mac®)

Web browser settings	**To set in Safari...**
Disable pop-up blocker	**Preferences** > **Security** > uncheck **Block pop-up windows**
Enable JavaScript	**Preferences** > **Security** > check **Enable JavaScript**
Enable Plug-ins	**Preferences** > **Security** > check **Enable plug-ins**
Prevent pop-ups from opening in a new browser tab	**Preferences** > **Tabs** > uncheck **Command-click opens a link in a new tab**
Prevent Safari from automatically opening zip files exported from the WebCTRL® application	**Preferences** > **General** > uncheck **Open "safe" files after downloading**

To...	**Do the following...**
Clear browser cache	**History** > **Clear History**
Have 2 different users logged in to the WebCTRL® system on the same computer	Start a new web browser session. Select **Safari** > **Private Browsing** > **File** > **New window**

On an Apple® iPad

Web browser settings	**To set on the iPad...**
Disable pop-up blocker	**Settings**> **Safari** > set **Block pop-ups** to **Off**
Enable JavaScript	**Settings** > **Safari** > set **JavaScript** to **On**

To...	**Do the following...**
Clear browser cache	**Settings** > **Safari** > **Clear History**

On an Apple® iPhone 6

Web browser settings	**To set on the iPad...**
Enable JavaScript	**Settings** > **Safari** > **Advanced**

Setting up a system in the WebCTRL® interface

System Settings

The **System Settings** page contains information that you must enter before the WebCTRL® application can run properly.

1 On the **System Configuration** tree, select **System Settings**.

2 Click each tab, then enter the necessary information. Tab details are described below.

General tab

The **General** tab presents the following system information:

- **System Directory Name**
- **Path to the Webroot Directory**
- **Database Type**
- **System Language -** The language to be used for:
  - The default language for new operators
  - Alarms logged to the database
  - State text and object names downloaded to the field
  - The login page

  NOTE Language also refers to formatting conventions. For example, English uses the date format mm/dd/yy, but English (International) uses the date format (dd/mm/yy).

You can edit or use the following fields and buttons.

Field	Notes
System Information	
System Statistics button	Click to see the following system information: • Number of controllers • Number of controllers that can run control programs • Number of points, regardless of vendor • Number of trend sources in database • Number of trend samples in database
Levels displayed in paths	The number of levels displayed in WebCTRL® paths. For example, if **Node Name Display Depth** is set at: 2, a typical path might be ..\AHU-1\RA Temp 3, a typical path might be ..\Atlanta R&D\First Floor\AHU-1 **NOTE** Changing this field does not take effect until you restart the WebCTRL Server application.
Logs	
Select a week of logs to review	For troubleshooting, you can download a zip file that contains logs of system activity.
Time	
Time Sync	Click to immediately synchronize the time on all IP network controllers in the system database to the WebCTRL® server's time. Time synchronization occurs daily if the **Enable time synchronization of controllers daily at____** field on the *Scheduled Tasks tab* (page 187) is enabled. (Click this link for more information on time synchronization.)
Time Format	Select one of the following for the system's time: • **12-hour clock** (Example: 4:34 pm) • **24-hour clock** (Example: 16:34)
Date Format	Select the format you want the system to use.
Alarms	
Use a single alarm template for CMnet alarms	If your system is an upgraded legacy system: • Check to have alarms for CMnet equipment use only the alert_auto alarm template. • Uncheck to allow multiple alarm templates.
Enable support for Alarm Notification Clients to connect to this server	Check to use the Alarm Notification Client application. See *Alarm Popup* (page 68) alarm action.
Restrict to IP Address	If the server has more than one network interface adapter, type the IP address of the server's network connection that the Alarm Notification Client application will connect to.

Field	Notes
Port	Change this field if the Alarm Notification Client application will use a port other than 47806 on the server.
Current client connections	Shows any workstation whose Alarm Notification Client is actively connected to this server.
Schedules	
Disable Schedules	If your system has no need to run schedules, check this box so that the Schedules feature is no longer visible in WebCTRL® interface.
Trends	
Keep historical trends for ___ days	Stores trend data in the WebCTRL® database for the time you specify. This is a default setting that you can change when you set up trends for an individual point. Specify the time of day that the trends are deleted on the **Scheduled Tasks** tab.
Display gap in graph line for missing data	Check to show a gap if trend data is missing.
Enable Server Trending of Color	Leave this checked unless directed otherwise by Technical Support.
Poll Interval	The frequency that the server polls routers for color trend data. Increase this field only if **Last Poll Duration** exceeds the **Poll Interval**.
Source Files	
All Source Files	Use to export source files to a .zip file that can be imported into another WebCTRL® or Field Assistant system. Source files include: • Control programs (.equipment files only) • Drivers • Graphics (.view files only) • Touchscreen files • BACview® files • Report design files for Equipment Values or Trend Sample reports **NOTE** If import detects a difference between a database file and an import file with the same name, import does not overwrite the database file. A message lists any file differences so that you can resolve them. See Commissioning equipment using Field Assistant.
Email Server Configuration	The information in this section is used by the *Send email alarm action* (page 77) and used to email a *Scheduled Report* (page 142).
From	Enter a valid address if required by your mailserver.
Mail Host	The mailserver's address. This can be an IP address or a system name, such as mail.mycompany.com.

Field	Notes
Mail Host Port	Change this field if using a port other than the default port 25.
Mail Host Security Options	Select the type of security the mailserver uses. • **Cleartext (SMTP)** – Uses the SMTP protocol to send as clear text over TCP/IP • **Secure SSL (SMTP with SSL)** – Uses SSL, a communication protocol that provides data encryption • **Secure TLS (STARTTLS)** – Uses TLS, but does not begin encryption until the WebCTRL® application issues STARTTLS command
Specify Mail User for Mail Host Authentication	Select if your mailserver requires a username and password.
Test connection	Click to have the WebCTRL® application try to connect to the email server. A message will appear below this button stating if the connection was successful or if it failed.

Security tab

Field	Notes
Logging	
Log audit data to file	Records operator activities and some system activities (such as opening and closing the database or automatic deletions) in a text file. The default file is **auditlog.txt** stored in **WebCTRL\webroot**<system_name>. You can change the file name and include a different path. To prevent the file from growing too large as new data is appended, you can archive the data to another text file by selecting an archive frequency in the **Archive log file contents** field. The archive file is **auditlog**_yyyy_mm_dd**.txt**, where *yyyy_mm_dd* is the creation date of the archive file. This file is created in the same location as **auditlog.txt**. **NOTE** If you do not archive the log file contents, you should manually delete the oldest entries.
Log audit data to database	Records audit data in a database named **audit.mdb** that can be accessed by third-party software. **NOTE** For Access, MSDE, and Derby, the database is automatically created. An Access database is named **audit.mdb**; a MSDE database is named **audit.mdf**. The Derby database consists of multiple files in a folder called **audit**. For MySQL, SQL Server, PostgreSQL, or Oracle, you must create the database manually.
Delete database entries older than ____ days	Automatically deletes entries in the database that are older than the number of days you specify.

Field	Notes
Log errors for invalid URLs	Check this field to write to the core.txt log any time an external source sends a request to the WebCTRL Server application. **NOTE** Regular maintenance scans by external software can cause the log files to grow large.
Security Policy	
Change Policy	See *Location-dependent operator access* (page 158) for information on **Change Policy**.
Remote Access	
Allow remote file management	Lets you access the system using WebDAV.
Operators	
Return operators to previous locations when server reconnects	Returns operators to current tree locations when the server reconnects.
Log off operators after _:_ (HH:MM) of inactivity	The system automatically logs off an operator who has had no activity in the system for the time period specified. This is a default setting for the system. The System Administrator can change this setting for an individual operator on the Operators page.
Lock out operators for __ minutes after __ failed login attempts	**Clear Lockouts** removes lockouts for all users. **NOTE** Restarting the WebCTRL Server application will remove lockouts.
Use advanced password policy	You can place specific requirements on passwords to increase security. See *Advanced password policy* (page 157).
Do not synchronize operator and privileges	If using hierarchical servers, the WebCTRL® application automatically synchronizes the operator/privilege settings on the child servers with those on the parent server. You have the following options: • Check this field on all servers to stop the synchronization process. • Check this field on a child server to remove it from the synchronization process so that you can manage that server's settings locally.
Synchronize Now	Click this button on the parent server for immediate synchronization of operator/privilege settings.

Permissions	
Permissions	When control programs, views, and touchscreen and BACview® files are created by an original equipment manufacturer (OEM), they cannot be used in a WebCTRL® system without the creator's permission. However, the creator can produce a key for a system with a different license that will grant permission to the key's recipient. If you receive a key, put it in the **WebCTRL X.X\resources\keys** folder. The table in the **Permissions** section of the **Security** page shows all keys in the that folder. To activate a key, click **Add**, then browse to the key. To delete a key from your system, select the key in the table, then click **Delete**. Red text in the table indicates the key has a problem such as it does not apply or has expired. See the **Notes** column for an explanation.

Communications tab

The fields on this tab let you define controller communication with the WebCTRL Server application and BACnet network communication.

Field	Notes
WebCTRL Server BACnet Controller Instance and **BACnet Alarm Recipient Instance**	The BACnet identifier for the system's server and the alarm recipient. You enter these system properties in SiteBuilder.
Always upload properties from controllers to WebCTRL database on mismatch	Automatic uploads are listed in the Audit Log. If you do not check this field, properties must be manually uploaded or downloaded by the operator when a mismatch occurs. **NOTE** If an automatic upload fails and the operator chooses to do nothing at that time, the upload will be attempted again when he returns to the page where he encountered the mismatch.
Ignore incoming alarms from sources not in this database	The WebCTRL® application will ignore alarms from third-party devices not in the database or devices from other WebCTRL® systems on the same network.
BACnet Settings	Native WebCTRL® system only
Log BACnet Binding Conflicts	The WebCTRL® application uses BACnet (dynamic) binding for communication between devices unless your system uses NAT routing. If using NAT, the WebCTRL® application uses information in its database to bind to BACnet devices. When checked, the WebCTRL® application logs binding conflicts that result from duplicate network numbers or device IDs.

Scheduled Tasks tab

Field	Notes
Automatically delete alarm incident groups which have been closed for more than ___ days	An incident group is all alarms related to a particular incident, such as Off Normal, Fault, and Return to Normal. **NOTE** Alarms in an incident group are not deleted until all alarms in the group have been closed.
Archive alarm information upon alarm deletion	Writes alarm information to a text file.
Archive file	The default file is **eventdel.txt** stored in **WebCTRL\webroot**<system_name>. You can change the file name and include a different path.
Archive file format	The alarm information to be written to the archive file. To add information, select field codes in **Append Field Code**. To delete field codes, highlight them in the **Archive file format** box and press **Delete**.
Automatically delete expired schedules daily at ___	To ensure there are no time zone conflicts, the WebCTRL® application waits 2 days after a schedule expires to delete it.
Remove expired historical trends daily at ____	Deletes trend data that has been in the database longer than the time specified in the **Keep historical trends for ___ days** field on the **General** tab.

Field	Notes
Enable time synchronization of controllers daily at____	Automatically synchronizes the time on all equipment to the time on the server, adjusting for different time zones and Daylight Saving Time. We recommend that you check this field. The WebCTRL® application will send a daily time sync message to each IP network device that is in the system database. IP devices not in the database will not be synchronized. For all ARC156 or MS/TP networks in the database, the WebCTRL® application will send a broadcast time sync message. All devices on these networks will be synchronized, regardless of whether or not the devices are in the database. **CAUTIONS** • Make sure that your server's time and time zone setting are correct. • Make sure that each site's time zone setting in SiteBuilder is correct. • To prevent time sync problems when the transition to and from Daylight Saving Time occurs, set the time sync to occur at least 1 hour after the last controller in the system is adjusted for DST. For example, your server and part of your system is in the Eastern Standard Time zone, but you also have controllers in the Pacific Time zone. Your server is adjusted for DST at 2:00 a.m. Eastern Standard Time, but the controllers in the Pacific Time zone are not adjusted until 3 hours later. So you would set the time sync to occur daily at 6:00 a.m. or later. **NOTES** • You can disable this function for an individual site on the site's Properties page. See *To set up site properties* (page 190). • You can perform system-wide time synchronizations using the **Time Sync** button on the *General tab* (page 181). Or, you can synchronize individual devices using the **Time Sync** button on the devices' Properties page. • Between time sync broadcasts, Automated Logic® routers include time sync information in each color request to the devices below the router. This ensures devices without a battery-backed clock will get the time shortly after powering up.

Daylight Saving tab

On this tab, you can adjust the Daylight Saving Time settings for WebCTRL Server.

Click **Update** to automatically set the table's **Begin** and **End** dates for the next 10 years based on the system's timezone. This marks all controllers with ExecB drivers for a Parameters download.

If the updated dates are incorrect

If you clicked **Update** but the dates are incorrect, your system's Java timezone data may be out-of-date. Do the following:

1 Go to the *Oracle Java SE Download site* (*http://java.sun.com/javase/downloads*).

2 Download the **JDK DST Timezone Update Tool** (**tzupdater-< version >.zip**) and unzip the file. The zip file contains 2 items:
   - tzdata.tar.gz
   - tzupdater.jar
3 In the WebCTRL® interface, go to **System Settings** > **Daylight Saving**, then click **Import**.
4 Browse to the **tzupdater.jar** file, select it, then click **Open**.
5 Click **Continue**. This restarts the WebCTRL Server application.
6 After the restart, in the WebCTRL® interface, go to **System Settings** > **Daylight Saving**, and then click **Import**.
7 Browse to the **tzdata.tar.gz** file, select it, and then click **Open**.
8 Click **Continue**. This restarts the WebCTRL Server application.
9 On the **System Settings** > **Daylight Saving** tab, click **Update**.

NOTE If you have sites in different time zones that use Daylight Saving Time, you can click **View DST Dates** on the site's **Properties** page to see DST information and time change dates.

Add-ons tab

A WebCTRL® system supports add-ons, such as EnergyReports, that retrieve and use the WebCTRL® data.

By default, the WebCTRL® application allows only signed add-ons that are supported by Automated Logic®. If needed, you can override this setting in SiteBuilder by going to **Configure** > **Preferences** > **Web Server**, and checking **Allow unsigned add-ons.**

To install an add-on

1 Save the add-on's file (.addon or .war) to your computer.
2 On the **System Settings** > **Add-ons** tab, click **Browse,** and then open the file.
3 Click **Install**. After a few seconds, the add-on will appear in the **Installed** table, and will be enabled. The table below gives a description of each column.

Column	Notes
Name	The add-on's name.
Path	To open the add-on in a web browser, append this path to your WebCTRL® system's address. For example, to open EnergyReports, type: `http://<system_name>/EnergyReports`, or `http://<system_IP_address>/EnergyReports`
Version	The version is shown if the author provided the information in the add-on.
Status	If this column shows: • **Running**, you can open the add-on in a web browser. • **Disabled**, click **Enable** to run the add-on. • **Startup error**, select the table row to see an explanation of the error under **Details**.

4 Select an add-on in the **Installed** table to disable or enable it, or to see the following **Details**.

Add-on main page	Click the main page link to open the add-on, if the author provided a main page.
Description	A description of the add-on, if the author provided one
Vendor Name	The add-on's author
Public Data Directory	This public directory contains data generated by the add-on. This data is visible in a web browser.
Private Data Directory	This private directory contains information such as configuration data.

To back up the add-on's private and public data directories

NOTE This procedure will not back up data stored in an external database. For example, EnergyReports uses an external database.

1 Select the add-on in the table.
2 Click **Save Data**.
3 Click **OK**.
4 Click **Save**.
5 Select the location where you want to save the data, then click **Save**.

To update an add-on

NOTE Add-ons for WebCTRL® v6.0 or later systems have a different folder structure than previous versions.

1 Select the add-on in the table.
2 Click **Remove Add-on and Keep Data**
3 Follow the procedure above to install the new version of the add-on.

To uninstall an add-on

1 Select the add-on in the table.
2 Click **Remove Add-on and Data**.

To set up site properties

1 On the **Network** tree, select the site.
2 Click **Properties**.

3 Configure site properties.

Field	Notes
Enable Timesync	Daily synchronizes the time in the site's controllers with the server's time, adjusting for different time zones and Daylight Saving Time. Synchronization occurs each day at the time specified in the field **Enable time synchronization of controllers daily at** on the System Settings > *Scheduled Tasks* (page 187) tab. **CAUTION** Make sure that your server's time and time zone setting are correct. Also, make sure that the site's time zone setting is correct in SiteBuilder.
View DST Dates	If the site's time zone (set in SiteBuilder) uses Daylight Saving Time, you can click **View DST Dates** to see DST information and time change dates.
Group Cache Controller	The designated router where colors are cached when peer caching is enabled in SiteBuilder.

To register your WebCTRL® software

To register your software, you must obtain a registered license from Automated Logic® and then apply it in the WebCTRL® interface. You can apply it when you install the software or at a later time.

1 Go to http://accounts.automatedlogic.com.

2 Select **Support** > **Software Licenses** > **BAS License Manager - For WebCTRL 2.5 and later**.

3 Your unregistered license will show  on the right side of the blue bar. Expand the blue bar.

4 Click on the row that shows **unregistered** in the **Registration Status** column.

5 Fill in the fields under **Owner Information** and **Site Information**.

6 Click **Register License**.

7 Check **I agree to the terms of use**.

8 Click **Download License**, then save the license file to a disk or to your hard drive.

9 Apply your license:

- During the WebCTRL® installation—The installation requests the location of your license file. Browse to location where you saved it in step 4 above.
- After the installation—
  a. On the WebCTRL® **System Configuration**  tree, select **License Administration**.
  b. Browse to the license file.
  c. Click **Apply**.
  d. Restart the WebCTRL Server application.

NOTES

- Do not edit any part of this registered license file. Editing a license file invalidates the license.
- Store the license in a safe location.

To replace the license when adding features

You can add any of the following optional WebCTRL® packages to your system:

- Advanced security: Location-dependent operator access, configurable password policies, and required operator comments/verification for system changes
- Advanced reporting: Custom reports
- Advanced Alarming: Additional alarm actions

You can purchase an optional package at http://orders.automatedlogic.com. Select **Options** under **Software Products**.

To obtain an updated license and then apply it in the WebCTRL® interface:

1 Go to http://accounts.automatedlogic.com.

2 Select **Support** > **Software Licenses** > **WebCTRL 2.5 and later (BAS License Manager)**.

3 Your unregistered license will show  on the right side of the blue bar. Expand the blue bar.

4 Click on the row that shows **unregistered** in the **Registration Status** column.

5 Fill in the fields under **Owner Information** and **Site Information**.

6 Click **Register License**.

7 Check **I agree to the terms of use**.

8 Click **Download License**, then save the license file to a disk or to your hard drive.

9 To replace your license, on the WebCTRL® **System Configuration**  tree, select **License Administration**.

10 Browse to the license file.

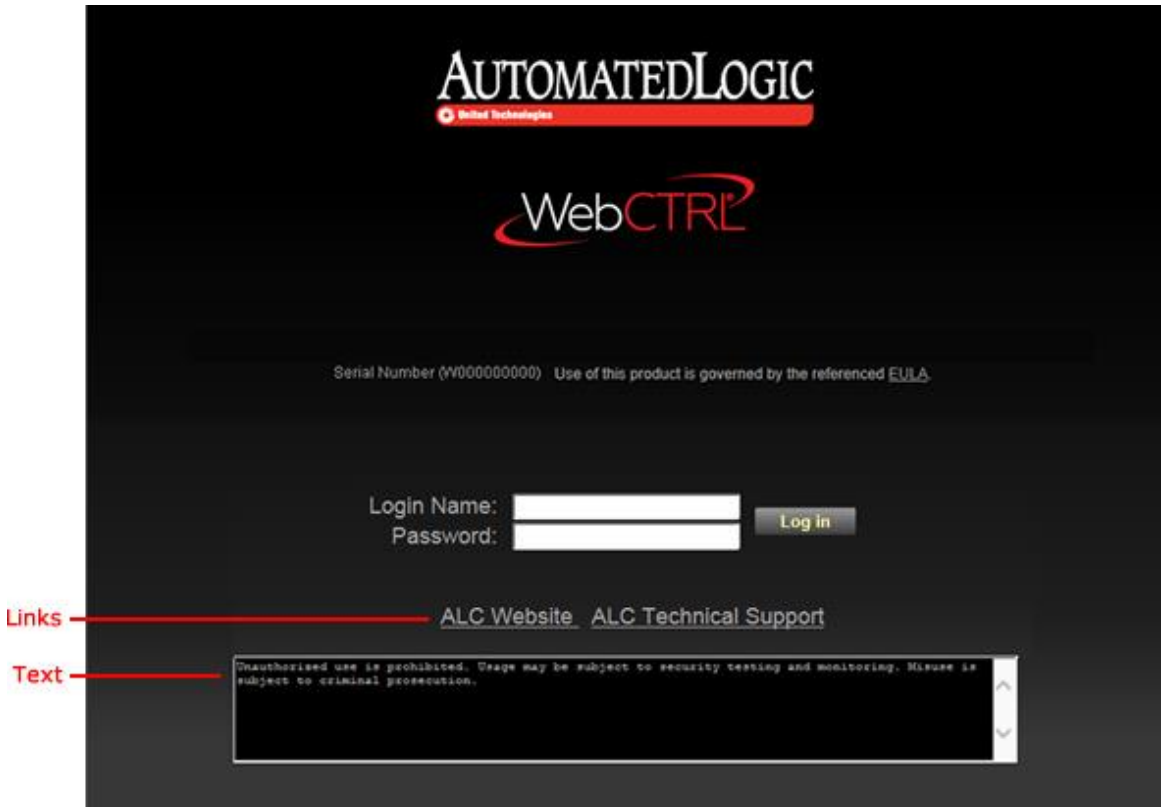
11 Click **Apply**.

12 Restart the WebCTRL Server application.

 **TIP** *Back up your system* (page 172) before replacing your license.

Adding links or text to the WebCTRL® login page

You can add links or text, such as a disclaimer, to the login page.



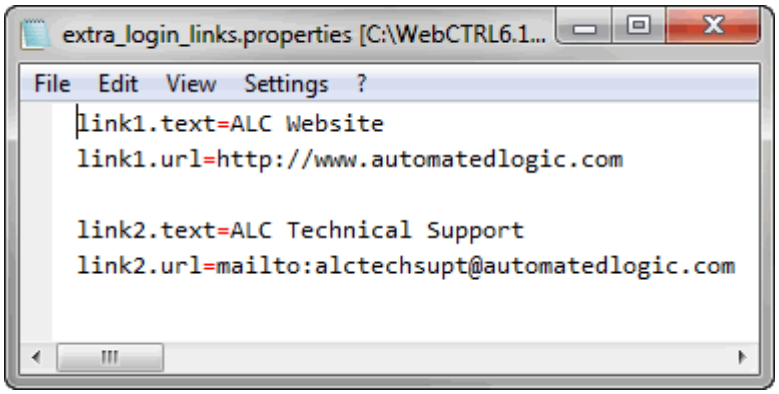
To add links to the login page

1 In a text editor such as Notepad, type 2 lines for each link that you want on the login page.

Line 1: `link#.text=<the link text that is to appear on the login page>`
Line 2: `link#.url=<the link's address>`

NOTE `link#.text` and `link#.url` must be lowercase.

Example to add links shown above:

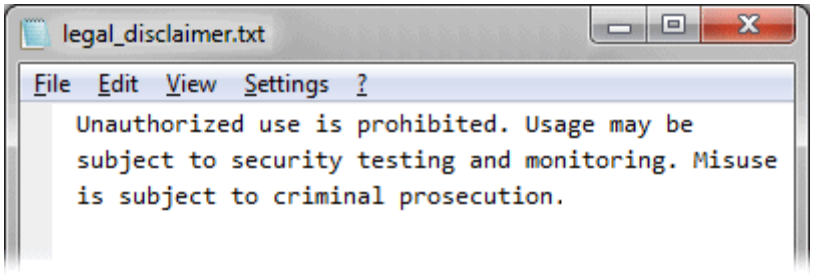


2 Save the file with the following name and location.
File name: extra_login_links.properties
Location: WebCTRLx.x\webroot\<system_name>

To add text to the login page

1 In a text editor such as Notepad, type the text that you want on the login page.

Example to add text shown above:



2 Save the file with the following name and location.
File name: legal_disclaimer.txt
Location: WebCTRLx.x\webroot\<system_name>

Editing a system remotely

Editing the Geographic or Network tree

In the WebCTRL® interface, you can edit the **Geographic** or **Network** tree that was originally set up in SiteBuilder. The system database is updated immediately.

Right-click an item on the **Geographic** tree, then select **Set up Tree**. Click **Geographic** or **Network** to display the tree you want to edit.

Click this button...	Or use this shortcut...	To...
		Add an area as a child of the selected area. (**Geographic** tree only)
		Import a clipping that was saved in SiteBuilder. See *To import a clipping* (page 195) below.
	Ctrl+X	Cut a selected item so it can be pasted in another location in the tree. (**Geographic** tree only)

Click this button...	Or use this shortcut...	To...
	Ctrl+V	Paste an item that was previously cut from another location in the tree. The item will be pasted as a child to the selected item. (**Geographic** tree only)
	Up arrow, or Drag and drop in new location	Move the selected item up the tree to a new location. (**Geographic** tree only)
	Down arrow, or Drag and drop in new location	Move the selected item down the tree to a new location. (**Geographic** tree only)
		Rename the selected item.
	Delete	Delete the selected item. The item and all of its children will be deleted.
	Double-click the tree item	Edit the item's features such as: • names • view—See *To attach a graphic in the WebCTRL® interface* (page 18) • control program—See *Working with control programs in the WebCTRL® interface* (page 200)

CAUTIONS

- Make a backup of your system before making changes.
- Make changes carefully as they cannot be undone.

NOTES

- You can also right-click items in the **Set up Tree** dialog box to perform the above tasks.
- You can perform some of the above actions on multiple tree items simultaneously. Use **Ctrl+click**, **Shift+click**, or both to select multiple items.

To import a clipping

You can export a clipping (a portion of a system) in SiteBuilder and then import it in the WebCTRL® interface. The following items are imported:

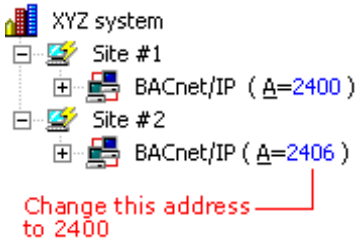
- One or more selected **Geographic** and **Network** tree items including attached control programs, graphics, and drivers
- Reports
- Trend data (if included in the clipping)
- Alarm templates and categories
- Location-dependent security information
- Schedules and schedule group membership (including the entire schedule group and schedules, if it does not exist in the target system)

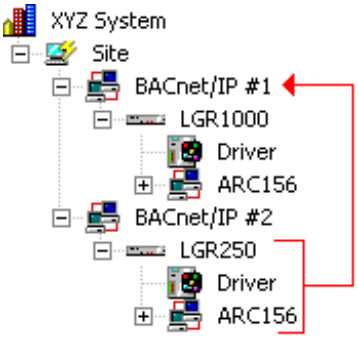
- Alarm actions
- Alarm message prefixes and suffixes
- Source tree relationships (including source tree rules if the source tree does not exist in the target system)

To import a clipping:

1. Right-click an item on the **Geographic** tree, then select **Set up Tree**.
2. Click the **Import clipping** button .
3. **Browse** to and select the clipping you want to import, then click **Next**.
4. Optional: If necessary, you can change the location path where the clipping will be imported. Select the system fragment, then select the import location in the tree below.
5. Click **Next**.
6. If asked if you want to replace event templates, follow the on-screen instructions.
7. If asked if you want to overwrite components, follow the on-screen instructions.
8. The interface shows any conflicts and problems that were found during the import. Make any needed corrections in SiteBuilder.

   NOTE Click **Copy to Clipboard** and then paste the list into another program such as Notepad for viewing or printing.
9. Click **Next**.
10. Click **Finish**.
11. Do any of the following that apply.

If you imported...	Do the following in the SiteBuilder application...	Do the following in the WebCTRL® application...
Another site into the system	Change the new site's BACnet/IP network number to be the same as the other BACnet/IP network(s). 	Download All Content to all Automated Logic® IP routers in the system.

If you imported...	Do the following in the SiteBuilder application...	Do the following in the WebCTRL® application...
A second BACnet/IP network into a site	Move the items under the new network to the original BACnet/IP network, then delete the new network. 	Download Parameters to any controllers that you moved.
Any controllers that use the SiteBuilder option **Automatically Configure My BBMDs**	N/A	Download BBMDs to the routers.
Any controllers that use manually configured BBMD tables	N/A	Update the routers' BBMD tables. See "To set up BBMDs through the WebCTRL® interface" or "To set up BBMDs using the BBMD Configuration Tool" in WebCTRL® Help.
A clipping without trends into a system using NAT	N/A	Restart IP connection(s) to new devices.

Managing files on a remote WebCTRL® server

The WebCTRL® application supports WebDAV, a network protocol designed for managing remote server files through an Internet connection. Use a third-party WebDAV client application, such as WebDrive, to access the Internet from anywhere in the world and manage your system files residing on a distant WebCTRL® server.

Running WebCTRL Server as a Windows® service

For Windows 7, 8, 10, 2008, 2012, and Vista

Run WebCTRL Server as a Windows service if you want WebCTRL Server to automatically start up when the server computer is restarted.

NOTE If your WebCTRL® system uses a database other than Derby and the database is located on the same computer as WebCTRL Server, you must set up Windows to delay starting WebCTRL Server until the database service has started. See *"How to delay loading of specific services"* (*http://support.microsoft.com/kb/193888*) on the Microsoft® website.

To install WebCTRL® Server service

NOTE If you are not sure if the service was previously installed, see *To determine if WebCTRL Server service is installed* (page 200).

1. In the Windows **Start** menu, select **All Programs** > **Accessories**.
2. Right-click **Command Prompt**, then select **Run as administrator**.
3. Select **Yes** in the User Account Control message.
4. In the Command Prompt window, type: `cd <path to the WebCTRL install directory>`
   For example, type: `cd c:\WebCTRLx.x`
   replacing x.x with your current version number.
5. Press **Enter**.
6. Type: `"WebCTRL Service.exe"`
7. Press **Enter**.

To start WebCTRL® Server as a Windows service

1. In the Windows **Start** menu, select **Control Panel**.
2. Select **Administrative Tools**, then double-click **Services**.
3. In the **Services (Local)** list, double-click **WebCTRL Service X.X**.
4. In the **Startup type** drop-down list, select **Automatic**.
5. On the **Log On** tab, do one of the following:
   - For Windows Vista, 2008, 2010, and 2012, select **This account**, and then browse to select a user who is a member of the **Administrator Group** on that computer.
   - For Windows 7 and 8, select **Local System account**.

6 Optional: If you selected **Local System account** in step 5 and you want to be able to access WebCTRL Server on the server computer's desktop, check **Allow service to interact with desktop**.

NOTES

- If you do not check this field, the computer screen will give no indication that WebCTRL Server is running; you must view the computer's Services page to see if it is running.
- This checkbox applies only to a user logged in on the server. A Windows Remote Desktop user cannot access WebCTRL Server running as a service.
- If you check this field, you cannot use the instructions below to set up printing to a network printer. Ask your Network Administrator to set up **Local System account** to use a network printer.
- If you check this field and the WebCTRL® application is to run email alarm actions, ask your Network Administrator to set up **Local System account** to send emails.

7 On the **General** tab, click **Start**.

8 Click **OK**.

NOTE If WebCTRL Server does not start after you click **Start**, you may have a Windows permissions problem. Follow the procedure below in *To set up the WebCTRL service for network printing* (page 199) to set up the Windows user name and password.

To set up the service for network printing

If WebCTRL Server runs as a service on a computer that is using a network printer, you must set up the Windows user name and password for the service. The Print alarm action requires this setup to be able to print.

1 In the Windows **Start** menu, select **Control Panel**.

2 Select **Administrative Tools** > **Services**.

3 Double-click **WebCTRL Service x.x**.

4 On the **Log On** tab, select **This account**.

5 Browse to the computer's domain, then select the user that the service will log in as.

NOTE Contact your network administrator if you need help determining the domain.

6 Type the user's password in the **Password** and **Confirm password** fields.

To stop or uninstall WebCTRL® Server service

To stop WebCTRL Server service

1 In the Windows **Start** menu, select **Control Panel**.

2 Select **Administrative Tools**, then double-click **Services**.

3 In the **Services (Local)** list, double-click **WebCTRL Service X.X** (where x.x is the WebCTRL version number.

4 In the **WebCTRL Service x.x Properties** dialog box, click **Stop** on the **General** tab.

5 Click **OK**.

To uninstall WebCTRL Server service

1. In the Windows **Start** menu, right-click **Command Prompt**, then select **Run as administrator**.
2. Select **Yes** in the User Account Control message.
3. In the Command Prompt window, type: `cd <path to the WebCTRL install directory>`
   For example, type: `cd c:\WebCTRLx.x`
4. Press **Enter**.
5. Type: `"WebCTRL Service.exe" -remove`
6. Press **Enter**.

To determine if WebCTRL® Server service is installed

If you do not know if the service was previously installed, follow the appropriate steps below.

1. In the Windows **Start** menu, right-click **Command Prompt**, then select **Run as administrator**.
2. Select **Yes** in the User Account Control message.
3. In the Command Prompt window, type: `cd <path to the WebCTRL install directory>`
   For example, type: `cd c:\WebCTRLx.x`
4. Press **Enter**.
5. Type: `"WebCTRL Service.exe" -check`
6. Press **Enter**.

Working with control programs in the WebCTRL® interface

A control program is typically defined in SiteBuilder when the system is engineered, but you can do the following in the WebCTRL® interface. These changes require you to *download* (page 30) the controller.

- *Add a control program to a controller* (page 201)
- *Replace an existing control program* (page 201)
- *Retrieve a control program from the WebCTRL®, edit it in EIKON®, and then return the edited program to the server* (page 202)
- Reload a revised control program located in **webroot**<system>**\programs**.
  On the WebCTRL® **Geographic** tree, right-click the equipment, then select **Reload Control Program**. Reloading updates all instances of a control program throughout the system and marks the controller(s) for download. WebCTRL® determines the appropriate *download option* (page 31) based on what changed in the control program.

NOTE If you change a control program in the EIKON® application and it does not display correctly in the WebCTRL® interface, **Ctrl+right-click** the WebCTRL® action pane, and then select **Refresh**.

To add a control program to a controller

1. Select the controller on the WebCTRL® **Network** tree.
2. On the **Devices** page > **Manage** tab, click the **Add Control Program** button.
3. Type a **Display Name** for the control program.
4. Select the **Controller** that you are adding the program to.
5. Optional: You can change the control program's **Reference Name** if needed.
6. Optional: You can select a different **Icon**.
7. Do one of the following:

If the control program is...	
In the **Control Program** drop-down list	Select the control program.
Not in the **Control Program** drop-down list	a. Click **Add New**. b. Browse to select the control program. c. Click **Open**. d. Click **Continue**. e. Click **Close**.

8. Optional: Check **Require operator to record any changes to control program**. See *Recording reasons for edits (21 CFR Part 11)* (page 161).
9. Click **Accept**.
10. *Download All Content* (page 30) to the controller.

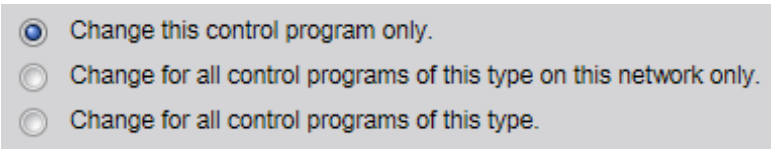
NOTES

- You can click **Delete Unused** in the **Control Programs** section to delete all unattached control programs and any supporting files with the same name from the **programs** folder.
- In the **Add Control Program** dialog box, you can also attach or remove a .view file that will be displayed in the WebCTRL® interface for the control program.
- If you need to change a control program's **Object Instance** number, right-click the control program in the navigation tree, and then select **Configure**. Click next to the field for additional information.

To replace an existing control program

1. Right-click the control program on the WebCTRL® navigation tree, then select **Configure**.
2. The following steps are optional:
   a) Change the **Display Name** for the control program.
   b) Change the control program's **Reference Name** if needed.
   c) Select a different **Icon**.

3 If the system has other control programs of this type, select which control programs you want to change.



NOTES

- If you are changing an IP router's control program, the second option will change all control programs of this type only on the IP network.
- If you are changing a control program on the network below an IP router, the second option will not change control programs of this type in the router.

4 Do one of the following:

If the control program is...	
In the **Control Program** drop-down list	Select the control program.
Not in the **Control Program** drop-down list	a. Click **Add New**. b. Browse to select the control program. c. Click **Open**. d. Click **Continue**. e. Click **Close**.

5 Optional: Check **Require operator to record any changes to control program**. See *Recording reasons for edits (21 CFR Part 11)* (page 161).

6 Click **Accept**.

7 *Download All Content* (page 30) to the controller.

NOTES

- You can click **Delete Unused** in the **Control Programs** section to delete all unattached control programs and any supporting files with the same name from the **programs** folder.
- In the **Add Control Program** dialog box, you can also attach or remove a .view file that will be displayed in the WebCTRL® interface for the control program.

To edit a control program

On a WebCTRL® client, you can get a copy of a control program from the server, edit it, then put it back on the server.

To get the control program

1 Right-click the equipment on the WebCTRL® **Geographic** or **Network** tree, then select **Configure**.

2 In the **Control Programs** section, click **Edit Existing**.

3 Click **Save as**.

4 Browse to the folder you want to put the file in.

5 Click **Save**.

6 Click **Close**.

To put the edited control program back on the server

1 Right-click the equipment on the WebCTRL® **Geographic** or **Network** tree, then select **Configure**.
2 In the **Control Programs** section, click **Add New**.
3 Browse to select the control program.
4 Click **Open**.
5 Click **Continue**.
6 Click **Close**.
7 Click **Close** again.

Working with drivers in the WebCTRL® interface

A controller's driver is defined in SiteBuilder when the system is engineered, but you can make the following changes in the WebCTRL® interface.

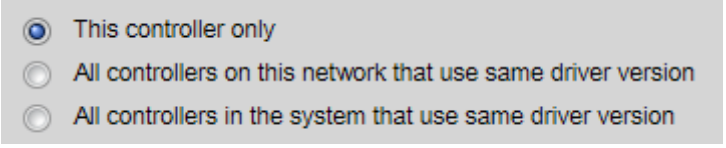
- Change the driver settings. See "Setting up the driver" in the controller's *Technical Instructions*.
- Change or upgrade a driver. See topic below.
- Reload a driver if it becomes corrupt (for example, a driver page is missing in the WebCTRL® interface). On the WebCTRL® **Network** tree, right-click the controller or driver, then select **Reload Driver**. Reloading updates all instances of the driver throughout the system and marks the controller(s) for an All Content download. Changes you made on the driver pages in the WebCTRL® interface remain in effect.

After you make these changes, you must *download All Content* (page 30) to the affected controller(s).

NOTE You can also make these changes in SiteBuilder. See "To change or upgrade a driver" in SiteBuilder Help.

To change or upgrade a driver

1 On the WebCTRL® **Network** tree, right-click the controller, then select **Configure**.
2 If other controllers in the system use this driver, select which controllers you want to change.



3 Do one of the following:

If the driver is...	
In the **Driver Version** drop-down list	a. Select the driver. b. Click **Accept**.
Not in the **Driver Version** drop-down list	a. Click **Add**. b. Browse to select the driver. c. Click **Open**. d. Click **Continue**. e. Click **Close**. f. Click **Close** again.

4 *Download All Content* (page 30) to the controller.

NOTE You can click **Delete Unused** in the **Controller** section to delete all unused drivers in **WebCTRLx.x\webroot**<system_name>**\drivers**.

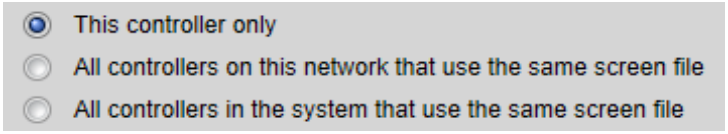
Working with touchscreen or BACview® files in the WebCTRL® interface

To use a touchscreen device or BAC*view*® device to view or edit a controller's property values, you must download a screen file (.touch, .bacview, .S37, or.kpd) to the controller. The screen file is typically defined in SiteBuilder and downloaded with the initial download to the controller, but you can select a different file in the WebCTRL® interface.

To select a different screen file

1 On the WebCTRL® **Network**  tree, right-click the controller, then select **Configure**.

2 If other controllers in the system use the current screen file, select which controllers you want to change.



3 Do one of the following:

If the screen file is...	
In the **Screen file** drop-down list	a. Select the file. b. Click **Accept**.
Not in the **Screen file** drop-down list	a. Click **Add**. b. Browse to select the screen file. c. Click **Open**. d. Click **Continue**. e. Click **Close**. f. Click **Close** again.

4 *Download All Content* (page 30) to the controller.

NOTE You can click **Delete Unused** in the **Screen File** section to delete all unused screen files in:

- **WebCTRLx.x\webroot**<system_name>**\views**
- **WebCTRLx.x\webroot**<system_name>**programs**

To edit a screen file on a WebCTRL® client

On a WebCTRL® client, you can get a copy of a screen file from the server, edit it, then put it back on the server.

To get the screen file

1 On the WebCTRL® **Network** tree, right-click the controller that uses the screen file, then select **Configure**.
2 Under **Screen File**, click **Edit**.
3 Click **Save as.**
4 Browse to the folder you want to put the file in.
5 Click **Save**.
6 Click **Close**.

To put the edited file back on the server

1 On the WebCTRL® **Network** tree, right-click the controller that uses the screen file, then select **Configure**.
2 Under **Screen File**, click **Add**.
3 Browse to select the file.
4 Click **Open**.
5 Click **Continue**.
6 Click **Close**.
7 Click **Close** again.

Setting up a system for non-English languages

English is the WebCTRL® default language, but you can set up your system to display a different language. You can also set up multiple languages so different operators can view the system in different languages.

Follow the procedures below to display the WebCTRL® interface in non-English languages.

1. *Install a language pack* (page 206).
2. *Prepare your workstation for non-English text* (page 206).
3. *Create control programs and translation files* (page 208).
4. *Create graphics* (page 210).
5. *Create your system in SiteBuilder* (page 212).
6. *Set an operator's language in the WebCTRL® interface* (page 213).

Installing a language pack

A language pack translates the text in the WebCTRL® interface. A WebCTRL® system is installed with an English language pack. To download other language packs:

1. Go to http://accounts.automatedlogic.com/download.
2. Under **Software Products and Updates**, select **v# language packs**, where # is your WebCTRL version.
3. Select the language you want.
4. Follow the instructions under **To install this language pack**.

NOTE If you create a system by copying an existing system that uses language packs, install the same language packs on the new system.

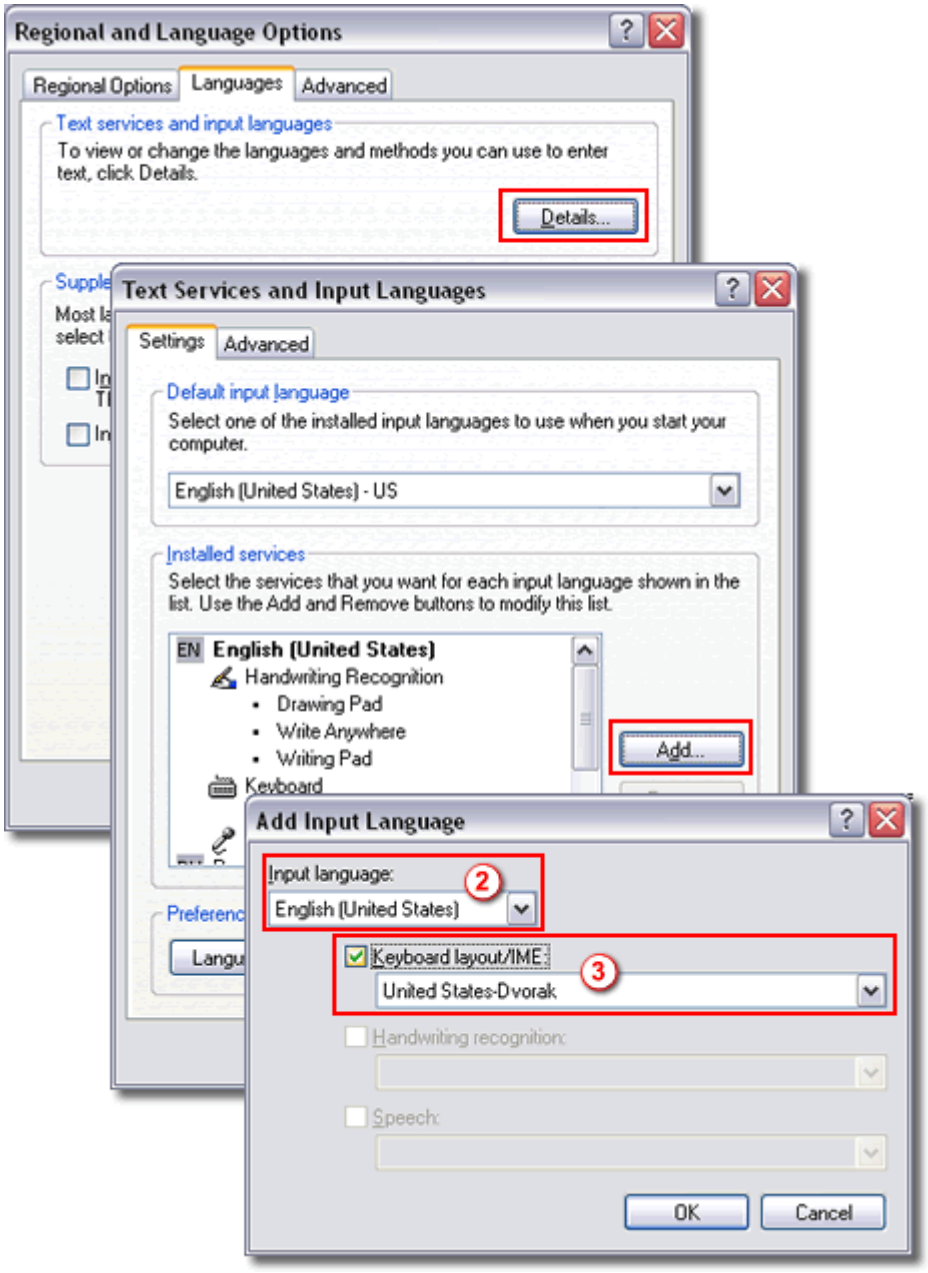
Preparing your workstation for non-English text

NOTE The instructions below are for a Windows XP operating system. If you have a different operating system, see your system's Help for instructions.

Set up your workstation so you can type international characters in control programs, graphics, or SiteBuilder.

1. Install the appropriate fonts for the languages you will be using. In the Windows **Control Panel**, open **Fonts**, select **File** > **Install new fonts**.
2. In the **Control Panel**, open **Regional and Language Options**, then select the **Input language**.

3 Install an Input Method Editor (IME) for non-alphanumeric characters.



See your operating system's Help for more information.

Creating control programs and translation files for a non-English system

To have the WebCTRL® interface display a control program's user-defined text (such as microblock names and property text) in a non-English language, you must:

1 Create the control program using key terms instead of the text.

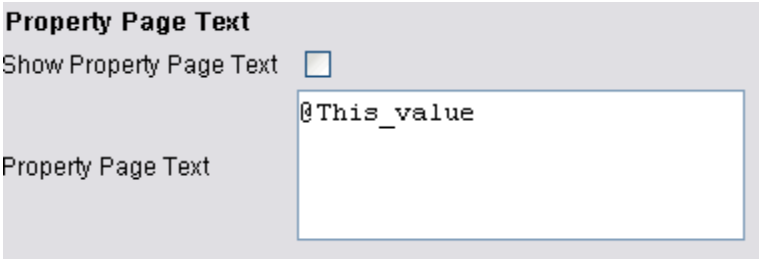
2 Create translation files of key terms and their language-specific equivalents.

In the WebCTRL® interface, the key term is replaced with its equivalent in the translation file for the current operator language. If a WebCTRL® Properties page or Logic page shows **??key term??**, the key term is missing from the translation file.

NOTE To edit existing control programs or translation files, see *Editing translation files or control programs for a non-English system* (page 214).

To enter a key term in the EIKON® application

In the EIKON® Property Editor, type `@` before each key term.



NOTES

- Type only the key term in the EIKON® application. Expressions such as $present_value$ are put in the translation file as part of the translated text. See EXAMPLES in "Translation files" below.
- Key terms can contain only alphanumeric characters and underscores (no spaces) and cannot start with a number.

Translation files

Translation files are used to translate key terms in control programs. A translation file contains key terms and their language-specific equivalents.

For a non-English system, you must create an English translation file and a non-English translation file* for each of the following:

- Each control program
- Key terms used in multiple control programs

EXAMPLES

Translation files	Key term=Language-specific equivalent
English	This_value=This value is $present_value$ Zone_temp=Zone temperature
Spanish	This_value=Este valor es $present_value$ Zone_temp=Temperatura de zona

*If the WebCTRL® interface will display multiple non-English languages, create a translation file for each language.

To create and implement a translation file

Create your translation file in a text editor, such as Microsoft® Word, that supports the character encoding you need.

1. Type one key term and language equivalent per line, left justified, starting in column 1. Do not put spaces on either side of the equal sign.
2. Save the file using the appropriate file name and location in the table below.

If key terms are used in...	the file name is...	File location
A single control program	<any_name>_xx.native*	Any location
Multiple control programs	equipment_xx.native*	WebCTRL\webroot\ <system_name>\resources

* xx = the language extension code. See "Extension codes and encoding" below.

If you are using:

- the English character set, save the file as Text only.
- a non-English character set, save the file as Encoded text . (See your application's help for information on saving files as encoded text.) When prompted for the language and encoding, see "Extension codes and encoding" below.

3. Open the control program in the EIKON® application, then select **Control Program** > **Bundled Resources**.
4. Click  , locate and select the translation file(s) for this control program, then click **Open**.

NOTES

- Do not add equipment_xx.native files that you created for multiple control programs.
- You can use **Ctrl+click** or **Shift+click** to select multiple files.

5 Save the control program. The translation files are embedded in the control program; the original files are no longer necessary.

Extension codes and encoding

Language	Extension codes	Encoding*
Brazillian Portuguese	pt_BR	ISO-8859-1
English	en	ISO-8859-1
Canadian French	fr	ISO-8859-1
French	fr_FR	ISO-8859-1
German	de	ISO-8859-1
Italian	it	ISO-8859-1
Japanese	ja	EUC-JP
Korean	ko	EUC-KR
Russian	ru	KOI8_R
Spanish	es	ISO-8859-1
Swedish	sv	ISO-8859-1
Simplified Chinese	zh	GB2312
Traditional Chinese	zh_TW	Big5
Thai	th	TIS620
Vietnamese	vi	Cp1258

* Encoding is used when you create the translation file.

Creating graphics for a non-English system

To create a non-English graphic in ViewBuilder:

1 *Set the language font* (page 211).
2 *Create the graphic.* (page 211)
3 Save the .view file.

NOTE The names of your .view file and any inserted image files must contain only ASCII characters.

Setting the language font

If your system has language packs installed, you can select a font for each language. Your selection affects only how text in your graphic appears in ViewBuilder.

To set the font for each language

1 Select **Configure** > **Preferences** > **Graphic (.view)**.

2 On the **Language** tab, check the language that you want to be the default for all new graphics.

To select the default language font for all new graphics

In the **Preview Font** column, click the font name to select a different font.

To select the active language when creating a view

If you will use multiple language fonts in a single view, you can switch to a different language font as follows:

1 Select **Configure** > **View Properties**.

2 In the **Language** field, select the language you want to use.

3 Click **OK**.

To create a Non-English graphic

The method you use to create a graphic that will be displayed in a non-English WebCTRL® system depends on the following:

- If the WebCTRL® system will display only a single non-English language, create the graphic in that language.

- If the WebCTRL® system will display multiple non-English languages, use either of the following methods:
  - Create the graphic in layers (one layer for each language), and then assign a show/hide conditional expression (see format below) to each layer so that it displays in WebCTRL® based on the operator language. See "To show/hide a layer in the WebCTRL® interface" in ViewBuilder Help.
  - Create each piece of the graphic in the different languages, and then assign a show/hide conditional expression (see format below) to each piece so that it displays in WebCTRL® based on the operator language. See "Setting objects on a graphic to show/hide in the WebCTRL® interface" in ViewBuilder Help.

Show/Hide conditional expression format

$$operator_language$$='*language*'

where *language* is the language code from the list below.

For example, the conditional expression to display French would be:
$$operator_language$$=='fr_FR'

Language	Language code
Brazillian Portuguese	pt_BR
English	en
Canadian French	fr
French	fr_FR
German	de
Italian	it
Japanese	ja
Korean	ko
Russian	ru
Spanish	es
Swedish	sv
Simplified Chinese	zh
Traditional Chinese	zh_TW
Thai	th
Vietnamese	vi

Creating a non-English system in SiteBuilder

To choose the language(s) for your system

1. In SiteBuilder, select **Configure** > **Preferences**.
2. Select the **Language** tab.
3. Under **Supported Languages**, select each language that you want to be available in your system.

   NOTE This list shows all installed language packs. To install additional languages, see *Installing a language pack* (page 206).
4. In the **System** field, select the *system Language* (page 213).
5. Click **OK**.
6. Save your database.

To create your system

To create your system in each language that the system will display:

1. In SiteBuilder, select **Configure** > **Preferences**.
2. Optional: The **Font** tab shows the font that will be displayed in SiteBuilder for each language that you selected on the **Language** tab. To change a font, click on the name in the **Preview Font** column, then make a new selection.
3. On the **Language** tab, select a language in the **Current Session** field.
4. Click **OK**.
5. Create your system.
6. Save your database.
7. If your system will display multiple languages:
   a) Select **Configure** > **Preferences**, select the **Language** tab, and select another language in the **Current Session** field.
   b) Re-enter all node names and display names in the current language.
   c) Save your database.
   d) Repeat steps a. through c. for each additional language the system will display.

System language

The system language is used for:

- The default language for new operators
- Alarms sent to the database
- State text and object names downloaded to the field
- The default login page *

All other information is displayed in the operator's language, which may be different than the system language. See *To set an operator's language in the WebCTRL® interface* (page 213).

* You can change the language shown on the WebCTRL® login page by selecting a different language from the list below the **Password** field.

To set an operator's language in the WebCTRL® interface

An operator can change their language preference in the WebCTRL® interface.

1. On the **System Configuration** tree, select **My Settings**.
2. Under **Preferences**, select the **Language** in the drop-down list.
3. Click **Accept**.

Editing translation files or control programs for a non-English system

If you add or edit a key term in a control program, be sure to make the same change in the translation file. See *Creating control programs and translation files* (page 208).

If you make changes after attaching a control program in SiteBuilder, do one of the following:

- If you changed text only in a control program or its translation file, right-click the control program on the **Geographic** tree, then select **Rebuild Equipment Pages**.
- If you changed logic in the control program, right-click the control program on the **Geographic** tree, then select **Reload Control Program**.

To edit a bundled resource

The EIKON® application bundles (embeds) the translation file(s) for a control program into the .equipment file. See steps 3 through 5 in *To create and implement a translation file* (page 209). To edit a bundled translation file:

1. Open the control program in the EIKON® application.
2. Select **Control Program** > **Bundled Resources**.
3. Select the file, then click  to save it to your hard drive.
4. Edit the translation file.
5. In the **Bundled Resources** dialog box in the EIKON® application, click  and select the edited file.
6. Click **OK** to overwrite the existing file.

Editing an EIKON® for WebCTRL control program in the EIKON® application

To edit a non-English control program that you created in the EIKON® for WebCTRL application:

1. Open the .eiw or .equipment file in the EIKON® application, then make your edits.
2. Select **Control Program** > **Bundled Resources**.
3. Verify that the list shows all translation files specifically for the control program. Use the plus or minus button to add or delete translation files.

   NOTE This list shows the translation files in the **WebCTRL\webroot\<system_name>\programs** folder. This list should not include translation files for multiple control programs.
4. Click **OK**.
5. Save the control program. The translation files are bundled with the control program; the original files are no longer necessary.

NOTE If you need to change a translation file after you save the control program, see *To edit a bundled resource* (page 214).

Copying translation files to another system

To copy most translation files from one system to another, you copy the files in the source system and paste them into the same folders in the destination system.

However, if your source system and destination system have translation files with the same name, copying and pasting would overwrite the file(s) in the destination system. In this case:

1. Open the source system's translation file in a text editor, then copy the key terms and translations.
2. Open the destination system's translation file in a text editor, then paste into it the key terms that you copied. Remove any duplicate key terms.

Document revision history

Important changes to this document are listed below. Minor changes such as typographical or formatting errors are not listed.

Date	Topic	Change description	Code*
4/24/19	Daylight Saving Tab	Updated steps to require unzipping the file	X-AE-EH-BR-RB
4/16/19	Recording reasons for edits	Added acknowledging alarms	AOC-R-TC-O
11/14/18	What's new in WebCTRL® Using a custom report as the source for a Graphics page	Added note that when a color map graphic is viewed in Time-Lapse, the color map will ignore report data and show thermographic colors.	AO-R-DD-O
11/13/18	What's new in ViewBuilder Creating a data table, chart, or color map from a WebCTRL® report	Added note that when a color map graphic is viewed in Time-Lapse, the color map will ignore report data and show thermographic colors.	AO-R-DD-O
10/31/18	To produce a color map	Added a new optional step 7 describing the Include equipment color column checkbox.	X-R-TC-O-DD
9/27/18	What's new in SiteBuilder	Added description of the new field Redirect HTTP requests to HTTPS.	A-O-CY-BR
9/25/19	Setting up BACnet Broadcast Management Devices (BBMDs)	Changed 50 IP subnets to 100 IP subnets.	X-D
9/19/18	What's new in the WebCTRL® application	Added security enhancement regarding Login page	X-O-CY-E
8/13/18	Formatting field codes	The example for "To format a number" in the table stated "To always truncate a setpoint value...". Changed to "To always round a setpoint value...".	X-O-JD-E

* For internal use only

Index

F

G

H

I

K

L

M

N

O

P

R

S

T

U

V

W

X

Z