
User's Guide

WebCTRL v4

February 15, 2008

Automated Logic Corporation • 1150 Roberts Blvd. • Kennesaw, GA 30144 • 770/429-3000 • Fax 770/429-3001 • www.automatedlogic.com • © 2008 Automated Logic Corporation. All rights reserved throughout the world. Automated Logic Corporation, the Automated Logic logo, WebCTRL, EIKON, BACview, SuperVision, and InterOp are registered trademarks, and Alert is a trademark of Automated Logic Corporation. BACnet® is a registered trademark of ASHRAE. All other brand and product names are trademarked by their respective companies.

Table of Contents

Chapter 1 What's new in v4	7
WebCTRL.....	7
EIKON LogicBuilder	10
SiteBuilder.....	11
ViewBuilder.....	12
Virtual BACview	13
SuperVision support	13
Chapter 2 What is WebCTRL?	15
A typical WebCTRL system	16
WebCTRL editions	17
WebCTRL design tools	19
Chapter 3 Getting to know the WebCTRL workspace	21
Navigating the system.....	22
Navigation tree icons	22
To show or hide the navigation pane.....	23
Zooming and resizing contents of the action pane.....	23
Using right-click menus	23
To print the action pane	24
Colors and status in WebCTRL.....	24
Colors and setpoints.....	25
Chapter 4 Running WebCTRL Server	27
To run a system.....	27
To set up a computer and browser to view WebCTRL.....	28
To run a system without connecting to the control modules	29
To switch to a different system	30
To send a message to logged in operators	30
To log off an operator.....	30
To shut down a system	31
Chapter 5 Working with equipment.....	33
Graphics pages	35
To organize multiple graphics for a single tree item	35
To attach a graphic in WebCTRL	36
To edit a graphic on a WebCTRL client	37
Properties pages	38
To view or change properties on a Properties page	38
Logic pages	39
To view a Logic page	39
To locate a microblock, section, or label on a Logic page	39
To change properties, alarms, or trends in a microblock pop-up	39
Using the Logic page as a troubleshooting tool	40
Changing multiple microblock properties	41
Use Global Modify to view and change the same property in multiple microblocks	41
Use Global Copy to copy multiple properties to similar control programs	42
Downloading system changes to control modules.....	43
To perform downloads from the Download page	43
To perform downloads from a Properties page or a microblock pop-up	44
If an item fails to download	44
To resolve a mismatch	45

Setpoints	45
To change programmed setpoints	46
Optimal Start.....	46
Demand Control	48
Setpoint Optimization.....	50
Chapter 6 Schedules	51
To view schedules	52
Setting up schedules	52
To apply a schedule to equipment	52
To apply a schedule to a group of equipment	53
To edit or delete a schedule	54
Using schedule categories	54
Creating a custom schedule category	55
To add a custom schedule category in WebCTRL	55
To view, edit, or delete a schedule category	56
Chapter 7 Trends.....	57
To collect trend data for a point.....	57
Graphing data for multiple points.....	59
To create a comparison trend graph	60
To edit a comparison trend graph	60
To delete a comparison trend graph	61
Using trend graphs	61
To view a trend graph	61
Tools for viewing trends.....	62
To print a trend graph.....	63
To transfer trend data to a table format	63
Customizing graph appearance.....	64
To edit graph properties	64
To change colors, line styles, and marker types.....	65
To copy a trend graph's properties.....	66
To add, edit, or delete a trend category.....	67
Chapter 8 Alarms	69
Viewing, acknowledging, and deleting alarms.....	70
To view alarms in WebCTRL	71
To acknowledge alarms	72
To delete alarms.....	73
To receive audible notification of alarms.....	74
Setting up alarm actions.....	74
To assign alarm actions to alarm sources	75
Alarm Popup	76
Print.....	79
Propagate To Server.....	80
Run External Program	80
Send Alphanumeric Page.....	81
Send E-mail.....	83
Send SNMP Trap	86
Write Property.....	87
Write to Database.....	88
Write to File.....	92
Setting up an alarm source in WebCTRL	93
To set up, edit, or disable alarm sources.....	94
To simulate an alarm	96
To view all instances of an alarm source	97

Customizing alarms	97
Alarm messages	97
Alarm categories	98
If you upgraded alarms from v2.0 or earlier.....	99
Using field codes	101
Format field codes	102
Field Codes	103
Chapter 9 Reports	107
WebCTRL reports	107
To run a report	109
To create a PDF, Excel spreadsheet, or CSV file	109
To install an add-on report	109
Chapter 10 Operator access	111
Privileges	112
Privilege sets	114
Admin privilege set	115
To add or edit a privilege set.....	115
To delete a privilege set	115
Operators and operator groups	116
To add or edit an operator	117
To delete an operator.....	118
To add or edit an operator group	118
To delete an operator group	118
To change My Settings.....	119
Chapter 11 Cost-saving strategies.....	121
Advanced topics and features.....	123
Chapter 12 System Settings.....	125
General tab	125
Security tab	127
Communications tab	128
Scheduled Tasks tab.....	129
Daylight Saving tab.....	130
Other Applications tab	131
To set up site properties.....	131
Chapter 13 Editing the GEO or NET tree.....	133
To import a clipping	134
Chapter 14 To register your WebCTRL software.....	137
To replace the license when adding features.....	138
Chapter 15 System maintenance	139
To back up your system	139
To compact the database and defragment the server's hard drive	140
To minimize the database size.....	141
Chapter 16 Custom reports.....	143
Equipment Summary	143
Equipment Values	144
Trend Samples	146
To view a custom report	147
To create a PDF, Excel spreadsheet, or CSV file	148
To edit or delete a custom report.....	148
To organize custom reports	148
To access custom reports from WebCTRL v2.5 or earlier	149

Chapter 17 Advanced security	151
Location-dependent operator access	151
To switch to location-dependent operator access	151
Privileges and privilege sets	152
To add a privilege set	153
To assign privilege sets to an operator	153
To delete a local privilege set assignment	153
Restricting access in the system	154
Security Assignments Report	154
Recording and viewing reasons for changing equipment properties (21 CFR Part 11)	155
Configurable password policy	155
Chapter 18 Web services	157
Using Web services to retrieve or change data	157
WebCTRL privilege requirements	158
WebCTRL data access using SOAP	158
Example using Web services to set a value	163
Step 1: Create a spreadsheet	163
Step 2: Create a macro	164
Step 3: Run the macro	166
Example using Web services to retrieve values	166
Step 1: Create a spreadsheet	166
Step 2: Create a macro	167
Step 3: Run the macro	169
Example using Web services to retrieve trend data	169
Step 1: Create a spreadsheet	169
Step 2: Create a macro	170
Step 3: Run the macro	172
Example using Web services to retrieve a WebCTRL report	173
Step 1: Create a spreadsheet	173
Step 2: Create a macro	173
Step 3: Run the macro	175
Chapter 19 Manual commands	177
Chapter 20 Running WebCTRL's autopilot	185
To set up WebCTRL's autopilot	185
To run WebCTRL's autopilot	187
To run WebCTRL's autopilot with Windows Vista	187
Chapter 21 Managing files on a remote WebCTRL server	189
Methods for using WebDAV	189
To use WebDAV	189
Chapter 22 Using wireless devices with WebCTRL	191
Supported WebCTRL features	191
To dial up a System using WAP	192
To navigate the System	193
To view and edit Alarms	194
To view and edit equipment properties	194
Chapter 23 Running WebCTRL Server as a Windows service	195
To install WebCTRL Server service	195
To start WebCTRL Server as a Windows service	195
To set up the WebCTRL service to print to a network printer	196
To remove WebCTRL Server service	196
Chapter 24 Setting up your system for non-English languages	197
Installing a language pack	197
Preparing your workstation for non-English text	198

Creating control programs and translation files for a non-English system.....	199
To enter a key term in EIKON LogicBuilder	199
Translation files	199
To create and implement a translation file	200
Creating graphics for a non-English system	201
Creating a non-English graphic in ViewBuilder	202
Creating a graphic for a multi-language system using WebCTRL extensions for FrontPage.....	203
Creating a non-English system in SiteBuilder.....	204
To set language preferences	204
To create your system	204
System language	205
To set an operator's language in WebCTRL	205
Editing translation files, control programs, or graphics for a non-English system.....	205
To edit a bundled resource.....	206
Editing an EIKON for WebCTRL control program in EIKON LogicBuilder	206
Copying translation files to another system	206
Chapter 25 Third-party integration.....	207
Determining the number of third-party points used in a system or control module.....	207
To determine the number of third-party points used in a system	207
To determine the number of third-party points used in an LGR line, ME-LGR line, ME812u-LGR control module.....	209
Integrating a third-party non-BACnet system	209
Integrating a third-party BACnet system	210
Network I/O vs. Display microblocks	210
Hardware options with Network I/O microblocks	211
To integrate using Display microblocks.....	213
To integrate using Network I/O microblocks	213
To discover BACnet networks, devices, and objects.....	215
To format a BACnet address.....	216
Glossary	219
Index.....	229

Chapter 1

What's new in v4

WebCTRL

Feature	Improvement
Edit the GEO or NET tree (see page 133)	You can right-click any item in the GEO or NET tree and then select Set up Tree to: • Add areas • Move items • Delete items • Rename items • Import clippings from SiteBuilder
Configure tree items	You can right-click items in the GEO or NET tree and then select Configure to: • Attach a graphic page (see page 36) or change its name or category • Select a different control program for equipment • Select a different equipment icon (see page 22) instead of the default icon  • Get a .equipment file, .view file (see page 36), or .bacview file from the server, edit it on your WebCTRL client, then put it back on the server • Edit the tree item's display name or reference name • Enable the requirement to have operators record reasons <i>for</i> changes to equipment (see page 155) • Upload a driver from your WebCTRL client to the server • Select a different driver • Delete unused .equipment files, .view files, or .bacview files.

Feature	Improvement
Right-click menus (see page 22)	In addition to the items discussed above, you can right-click a tree item to: • Reload a control program • Reset property values (see page 38) to the original control program values • Access Global Copy (see page 42) • Copy an equipment path to the Windows clipboard so you can use it in ViewBuilder • Reload a driver or reset the driver settings to their original values You can also right-click the action pane to: • Jump to (see page 39) a specific microblock, section, or label on a logic page • Copy selected information or paste it • Print the contents of the action pane • Access Global Modify (see page 41) • Access a microblock's pop-up The options in a menu depend on the item or location that you right-click on.
Zooming and resizing contents of the action pane	• Hold down Ctrl while rolling your mouse wheel to zoom in or out on the contents of the action pane. • Right-click the action pane and select Scale to 100% to restore the contents to their original size. • 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 100% to return it to its original size.
Reports (see page 107)	• In addition to a PDF and Excel file, a report can now be output to a CSV (Comma Separated Values) Text file. • You can filter an equipment-based report to show only equipment for specific control programs.
Alarm actions (see page 74)	• The Send E-mail alarm action (see page 83) can run a WebCTRL report and attach it to the email. The Write to File alarm action (see page 91) can run a WebCTRL report and save it as a file. The report can be a PDF, HTML, Excel, or CSV file. • For the Send E-mail alarm action, you can use SSL to secure communications between the WebCTRL server and the mailserver. • You can now set the following run conditions for an alarm action: ○ Run the alarm action only when the alarm source generates an alarm or when it returns to normal. ○ Wait a specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * ○ Run if the alarm occurs during the occupied hours defined for a schedule group or run if the alarm occurs during the group's unoccupied hours. * * Available with the optional Advanced Alarming package.

Feature	Improvement
New privileges (see page 112)	• View Logic Page • Access Commissioning Tools • Edit Alarm Configuration • Do not audit changes made using SOAP (Web services)
Operators and Operator Groups pages (see page 116)	The Operators and Operator Groups pages have been redesigned to facilitate their use.
Module Status and Show Bindings buttons	In WebCTRL's NET tree, a control module's Properties page now has a Module Status button to generate a module status (modstat) report and a Show Bindings button to help you troubleshoot communication problems.
Autopilot (see page 185)	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.
Trend graphs (see page 57)	Trend graph lines will show breaks only when time synchronizations occur or when trending is enabled or disabled.
System Settings - General tab (see page 125)	You can: • Click the Time Sync button to synchronize the time on all control modules in the system to the time on the server. • Select a time format (12-hour or 24-hour) and a date format (mm/dd/yy, dd/mm/yy, or yy/mm/dd). • Download a zip file containing a week of system activity logs for troubleshooting.
Schedule Groups (see page 53)	You can now use Ctrl+click or Shift+click to select multiple items on the Schedule Groups page.
Web services (see page 157)	The new ReportService lets you retrieve report data. Two new EvalService methods let you get or set multiple values.
Invalid URL logging (see page 126)	You can set WebCTRL to log every time an external source sends a request for an invalid URL to the WebCTRL Server.
WebCTRL menu changes	Point Checkout moved to the equipment Properties page. Airflow Configuration is now accessible when you right-click an item in the GEO tree or the system level in the NET tree. Find Microblock is now Microblock Properties. Set up Tree opens the Set up Tree dialog box. You can also access this dialog box by right-clicking an item in the GEO tree.
Hierarchical servers	WebCTRL automatically synchronizes the operator/privilege settings on the child servers with those on the parent server. You have the option to turn off the synchronization (see page 126).
Network Points	On the Properties page > Network Points tab, you can click Search/Replace at the top of the Address column to have WebCTRL replace all instances of specific text in the addresses with different text. This is especially useful for third-party integration (see page 213).

Feature	Improvement
Improved CMnet communications	Communication speed is improved for legacy systems with multiple gateways.
Removed features	• Display of disabled points in the navigation tree • The configairflow and checkout manual commands • Schedule and alarm icons in the navigation tree • Successful download popup messages.

EIKON LogicBuilder

Feature	Improvement
New EIKON LogicBuilder application replaces EIKON for WebCTRL	• EIKON LogicBuilder creates a .equipment file that is both the file for editing the control program and the file to download into a control module. • In EIKON LogicBuilder, you can: ○ Open multiple control programs ○ Copy and paste items between control programs ○ Open EquipmentBuilder where you can generate the following files for selected equipment: - An entire control program that is ready to edit or download - The corresponding preprogrammed equipment graphic - A BACview file (if applicable to selected equipment) ○ Create custom microblocks ○ Add custom alarm or schedule categories in EIKON LogicBuilder, not the ems.ini file. ○ Select properties that will appear on graphics. ViewBuilder can then display those properties and set their paths. ○ Install service packs or patches in EIKON LogicBuilder using Help > Apply Update. • EIKON LogicBuilder has: ○ Unlimited Undo/Redo ○ Immediate error indication ○ Find features that let you: - Find microblocks, labels, reference names, and property page text in the control program - Find a specific microblock in the Edit Order window ○ The ability to maintain a wire connection when you move the microblock ○ A dockable Property Editor ○ Zoom capability ○ What's This help for property fields

Feature	Improvement
	- To support EIKON for WebCTRL control programs, EIKON LogicBuilder lets you: - Upgrade all EIKON for WebCTRL control programs in a selected folder to EIKON LogicBuilder control programs. Some new features of the Logic page (for example, jumping to labels) work only with EIKON LogicBuilder control programs. - Edit a .eiw or .equipment file from EIKON for WebCTRL. - Import custom categories and templates from the ems.ini file into EIKON LogicBuilder.

SiteBuilder

Feature	Improvement
New look	SiteBuilder's appearance has changed.
BBMD's	- The new ME812u-E control module, which is not a router, lives on the IP network and can be defined as a BBMD. - You can select View > Display > BBMD to display B=assigned beside any control module that SiteBuilder assigned as a BBMD. - To override SiteBuilder's BBMD selection, you can right-click a different control module on the same IP subnet, then select Force to BBMD.
Hierarchical servers	If WebCTRL is set to automatically synchronize the operator/privilege settings on the child servers with those on the parent server, the system can have only 2 levels. Child servers cannot have child servers below them.
Open System Folder menu command	You can open the system folder in Windows® Explorer.
Graphic attachment	You can now attach a graphic to multiple pieces of equipment.
SiteBuilder support for new control modules	SiteBuilder supports these new control modules: ME812u, ME812u-LGR, ME812u-E, SE6166, and RC642 (Room Controller).
Removed feature	The menu commands Import to XML and Export from XML have been removed.

ViewBuilder

Feature	Improvement								
BACview files	You can now make BACview screens, test their navigation, and create your BACview file in ViewBuilder. You no longer need to make the screens in BACview Artist or in an HTML editor, or run a separate simulator program. ViewBuilder lets you set controls, text, or complete rows to show or hide based on the value of a microblock property or on the password level of the user. ViewBuilder can output the following types of BACview files: <table> <tr> <th>File output</th><th>For</th></tr> <tr> <td>.bacview</td><td>WebCTRL v4 systems and later</td></tr> <tr> <td>.S37</td><td>ExecB hardware with WebCTRL prior to v4</td></tr> <tr> <td>.KPD</td><td>Exec 6 hardware</td></tr> </table>	File output	For	.bacview	WebCTRL v4 systems and later	.S37	ExecB hardware with WebCTRL prior to v4	.KPD	Exec 6 hardware
File output	For								
.bacview	WebCTRL v4 systems and later								
.S37	ExecB hardware with WebCTRL prior to v4								
.KPD	Exec 6 hardware								
Symbols	ViewBuilder symbols have been redesigned to provide more realism, more animation, and better functionality.								
EquipmentBuilder support	In ViewBuilder, you can open EquipmentBuilder where you can generate the following files for selected equipment: • An entire control program that is ready to edit or download • The corresponding preprogrammed equipment graphic • A BACview file (if applicable to selected equipment)								
Properties for Graphics	In EIKON LogicBuilder, the system engineer can use the Properties For Graphics feature to select the properties that will appear on graphics. Then in ViewBuilder, you can select from this list of properties to get their paths.								
Interactive thermostat control	This control supports the new Room Controller.								
Service pack or patch installation	You can now install service packs or patches in ViewBuilder using Help > Apply Update .								
New look	ViewBuilder's appearance has changed.								

Virtual BACview

Feature	Improvement
New Virtual BACview application	The Virtual BACview software simulates the BACview[®] keypad/display unit. You run Virtual BACview on a laptop that is connected to the Local Access port of one of the following control modules: • LGR line • ME line • SE line • Equipment Portal • Room Controller • WebZONE In the Virtual BACview, you can view and change property values and the control module's real time clock without having to access the system's server.

SuperVision support

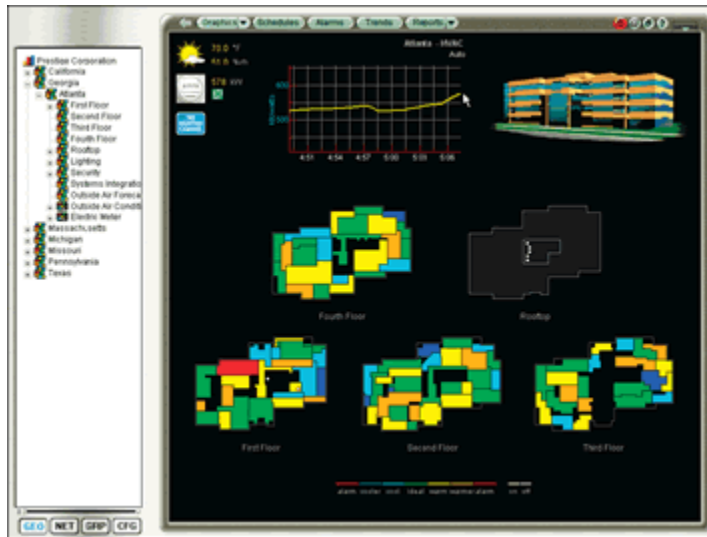
Feature	Improvement
Upgrade of v2.6 systems	• The InterOp Conversion Wizard (ICW) can now upgrade a SuperVision v2.6 system. You no longer need to upgrade to InterOp and then run the ICW. • The ICW is no longer installed with WebCTRL; it is now a separate installation program on the WebCTRL installation CD. You will also find the latest version of the ICW on the <i>dealer's website</i> (http://accounts.automatedlogic.com) by selecting Support > Download > Engineering and Startup Tools > Utilities.

Chapter 2

What is WebCTRL?

WebCTRL is a web-based building automation system that can be accessed from anywhere in the world through Internet Explorer, without the need for special software on the workstation. Through Internet Explorer, you can access all building management functions such as:

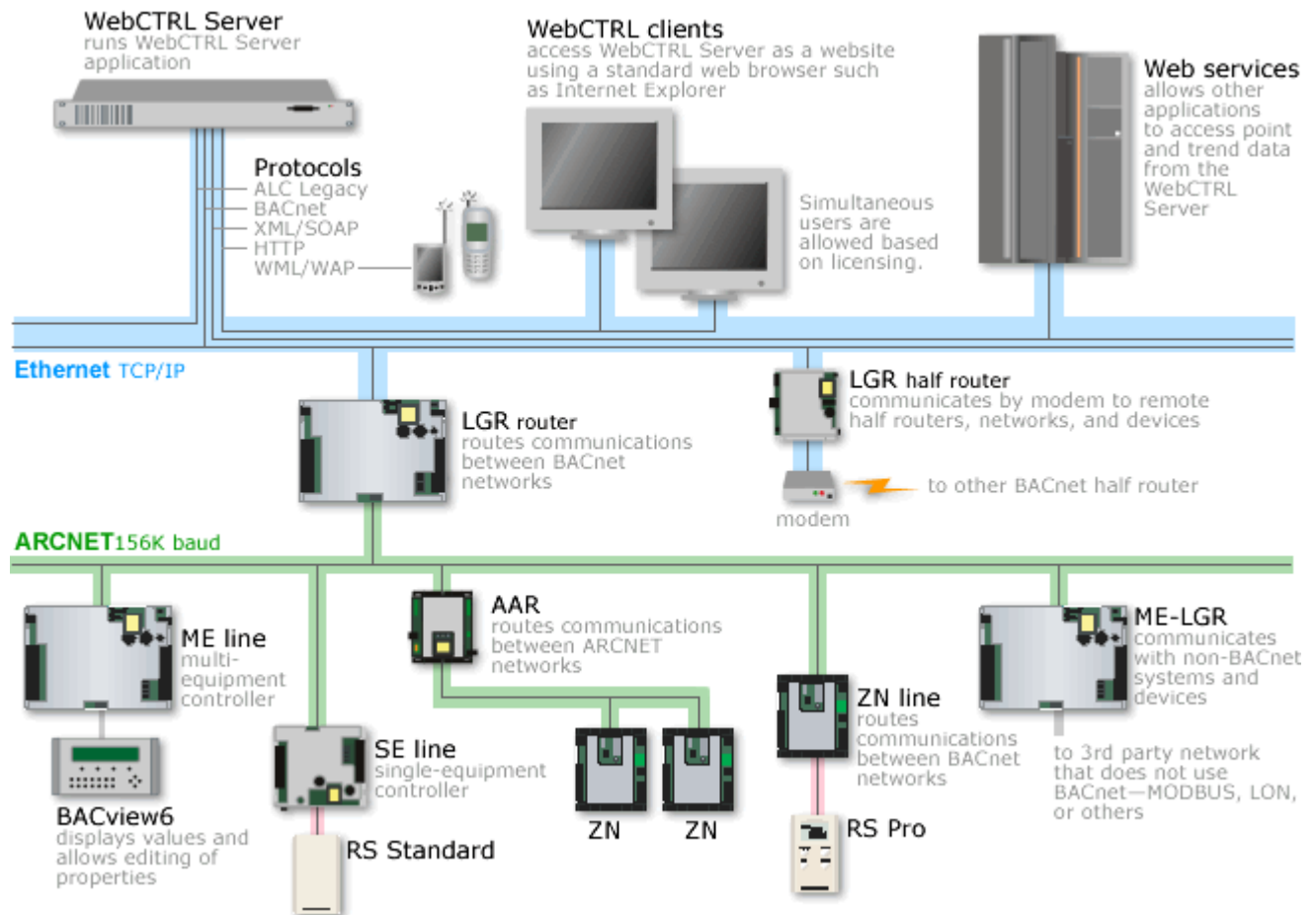
- adjust setpoints and other control parameters
- set and change schedules
- graphically trend important building conditions
- view and acknowledge alarms
- run preconfigured and custom reports on energy usage, occupant overrides, tenant billing, and much more.



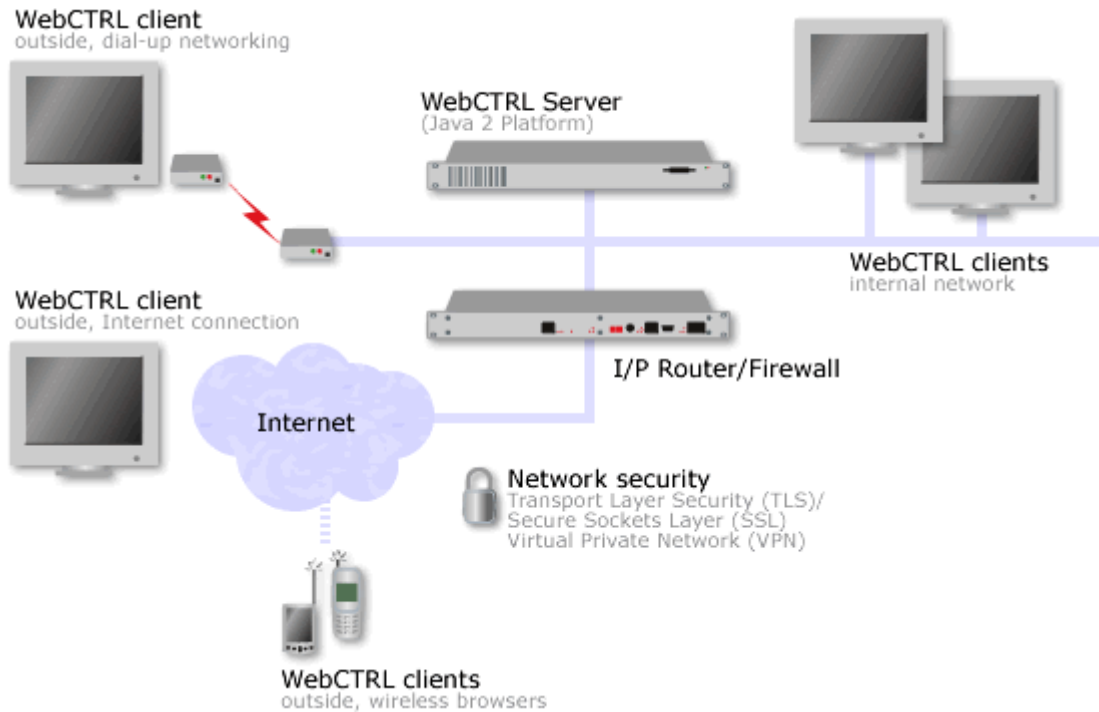
A typical WebCTRL system

WebCTRL uses a network of microprocessor-based control modules to control heating, air conditioning, lighting, and other facility systems. A web-based server communicates with these control modules and generates web pages that the user can access through Internet Explorer. WebCTRL allows you to 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 Internet Explorer to access WebCTRL Server as a website. Access and security options in WebCTRL may include:



The **WebCTRL server** has great flexibility because of its Java 2 architecture. You can configure the database using a Java Database Connectivity-compliant (JDBC) database format.

WebCTRL editions

WebCTRL supports:

- Unlimited simultaneous users
- Multiple operating systems and databases
- Built-in alarming, trending, and reporting
- International languages (International English, Korean, Traditional and Simplified Chinese, Spanish, French, German)
- Third-party integration
- WAP-enabled devices
- Secure server access using TLS/SSL
- Optional WebCTRL packages listed below

WebCTRL 500 supports all the same features and options as WebCTRL in systems with fewer than 500 points.

NOTE Points include all input and output points tied into the system, regardless of vendor.

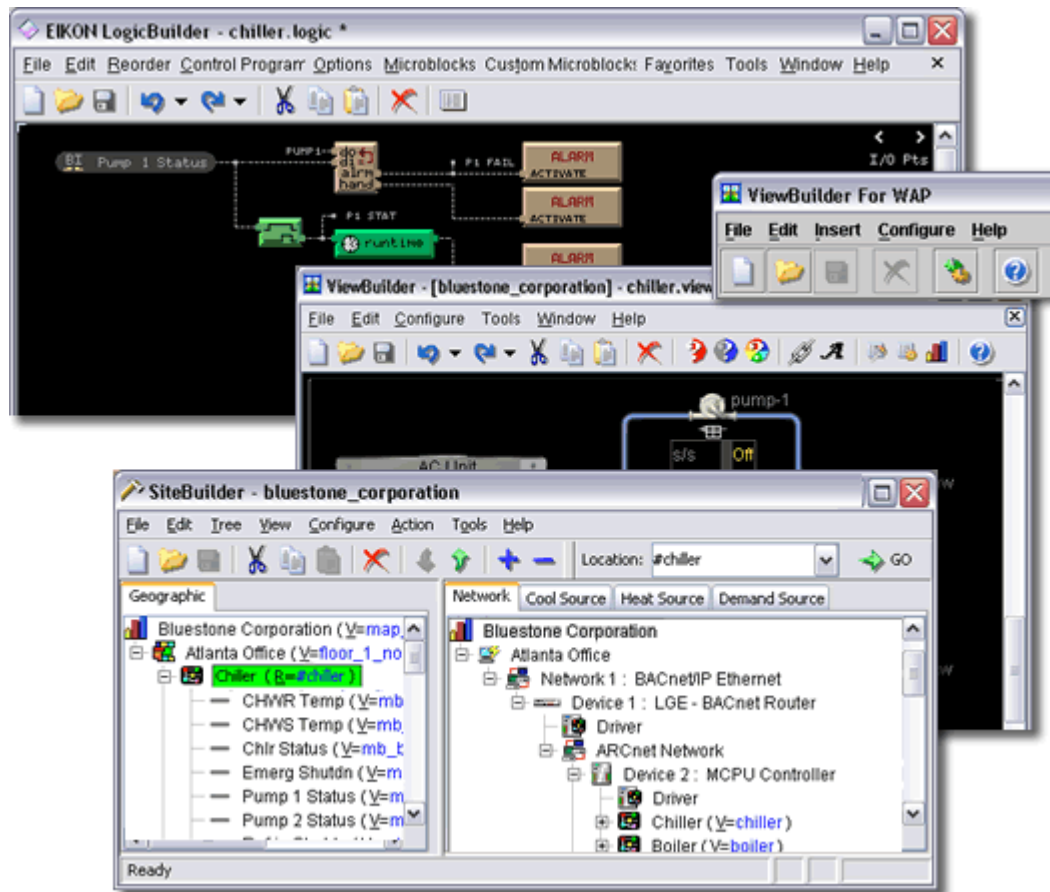
Optional WebCTRL packages

Package	Capabilities
Advanced Reporting (see page 143)	Configurable report designer for making environmental reports. Available report types: • Equipment Summary • Equipment Values • Trend Samples
Advanced Security (see page 151)	• Define location-dependent operator access. • Configure password policies. • Require operator comments and operator verification prior to accepting system changes.
Advanced Alarming (see page 74)	The following alarm actions: • Send SNMP trap • Write property • Write to database 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
Enterprise Integration (see page 157)	Use web services (XML/SOAP) data retrieval.

WebCTRL design tools

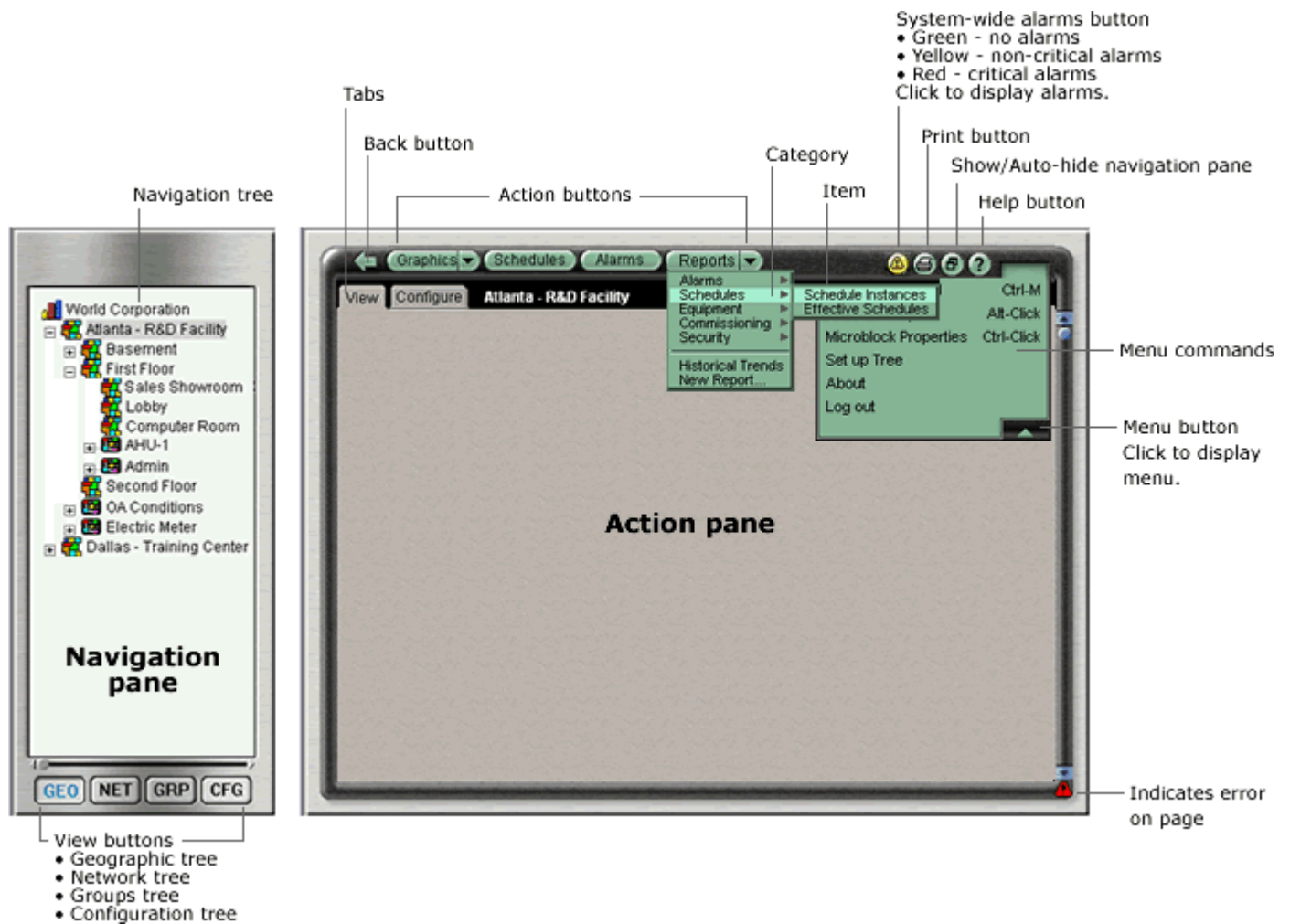
Develop and configure control programs, graphics, and a system database for your WebCTRL system using the following WebCTRL design tools.

Use...	To...
EIKON LogicBuilder	Create control programs and Properties pages.
ViewBuilder	Create graphics and BACview screens.
ViewBuilder for WAP	Customize pages for WAP-enabled devices.
SiteBuilder	Create and modify the system database and associate control programs and graphics with equipment.



Chapter 3

Getting to know the WebCTRL workspace



NOTES

- After you log in to WebCTRL, 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 118).
- Privileges control what an operator can see or do in WebCTRL. If you cannot see or do something that you read about in Help, ask your System Administrator to check your privileges.

Navigating the system

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

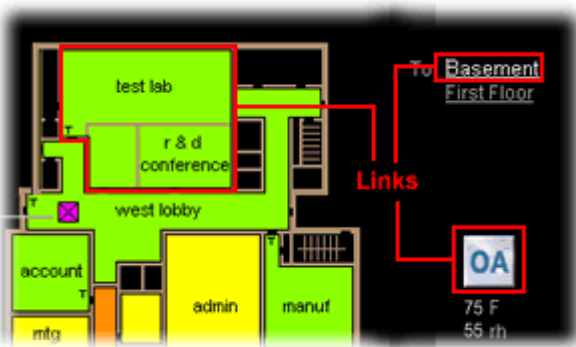
To navigate to an item in the system

- 1 Select an item in the **GEO** or **NET** tree.
NOTE The **GRP** and **CFG** 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.

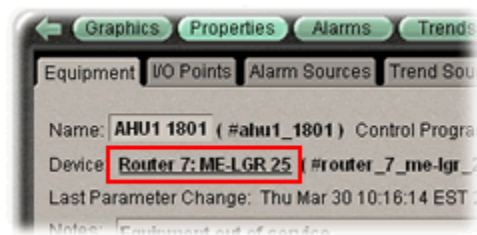
To navigate using links

Use links to jump to related pages.

On a Graphics page



On a Properties page



Navigation tree icons

The navigation tree displays icons to denote types of items in the system. For example:

 = system

 = areas

 = equipment

You can select custom equipment icons in EIKON LogicBuilder or in WebCTRL. In WebCTRL, right-click the equipment in the **GEO** or **NET** tree, select **Configure**, then select the **Icon**.

To show or hide the navigation pane

Click  to toggle the navigation pane between shown or hidden. When the navigation pane is hidden, move the cursor across the left edge of the browser to show the navigation pane.

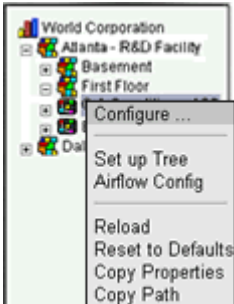
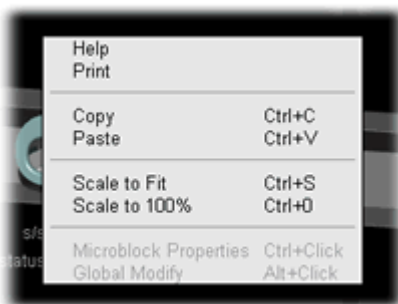
Click and drag the right edge of the navigation pane to adjust its width.

Zooming and resizing contents of the action pane

- Hold down Ctrl while rolling your mouse wheel to zoom in or out on the contents of the action pane.
- Right-click the action pane and select **Scale to 100%** to restore the contents to their original size.
- 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 100%** to return it to its original size.

Using right-click menus

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

A tree item	The action pane	A property
		

To print the action pane

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

NOTE If you do not want to print the black background, in your browser's Internet Options dialog box, disable background printing.

Colors and status in WebCTRL

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

Color	Color Name	Status Code	Condition Indicated
	Mustard	none	In equipment - viewing in Design Mode
	Purple	0 or 15	In a control module—non-operational or no communications In equipment—a hardware or software error
	Charcoal	14	In a control module—a download is required or is already in progress In equipment—a module has stopped
	Coral	13	Control program error NOTE If a zone controlled by a U line control module shows coral on a floorplan, the control module 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 control module—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 LogiStat Pro or Plus 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 

Chapter 4

Running WebCTRL Server

WebCTRL Server accesses and maintains the system database that is viewed and edited from client browsers.

The **Current Users**, **Connections**, and **Output** tabs allow you to monitor the status of the system. Output information is continually archived to **WebCTRLx.x\logs\WEBSERVER.log**.

To run a system

WebCTRL Server must be running before operators can log in from client browsers.

- 1 Select **Start > Programs > WebCTRL x.x > WebCTRL Server**.

TIP If you use WebCTRL as a Windows service, your computer can automatically start WebCTRL Server every time the computer starts. See *Running WebCTRL as a Windows service* (page 195).

- 2 Start the Internet browser on one or more client computers.
- 3 Verify that your browser is set up for displaying WebCTRL. See *To set up a browser to view WebCTRL* (page 28).
- 4 Type the WebCTRL server's address in the browser's **Address** field.

NOTE You can type `http://localhost` if the server and browser are running on the same computer.

- 5 Enter a **Name** and **Password**.

To set up a computer and browser to view WebCTRL

NOTES

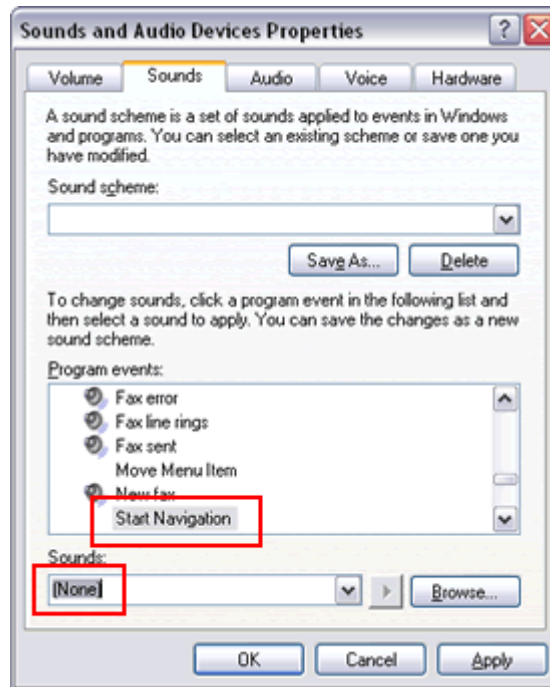
- WebCTRL Server must be running before operators can log in from client browsers.
- To view trends, client computers need Sun's Java VM plugin. Go to the **CFG** tree **Client Installs** page for a link to the Java website.

Browser settings	Where to change setting
Accept First-party and Third-party cookies.*	Tools > Internet Options > Privacy tab >Advanced button
Automatically check for newer versions of stored pages.*	Tools > Internet Options > General tab > Settings button
Disable the Image Toolbar.	Tools > Internet Options > Advanced tab > Multimedia section
Select Play animations in web pages.	Tools > Internet Options > Advanced tab > Multimedia section
Do not save passwords if the computer is used by multiple operators.	Tools > Internet Options > Content tab > AutoComplete button
Disable all the options on the Explorer Bar.	View > Explorer Bar
Hide the browser's toolbars.	View > Toolbars
Maximize the browser window.	
Computer settings	
Set the monitor's screen resolution to a minimum of 1024 x 768 with 24- or 32-bit color quality.	Start > Control Panel > Display > Settings tab

Browser settings**Where to change setting**

Disable navigation sounds.

Start > Control Panel > Sounds and Audio Devices > Sounds tab



* WebCTRL cannot function without this setting.

To run a system without connecting to the control modules

Use WebCTRL in Design Mode to verify links between graphics and to set up properties, schedules, alarms, and trends before you connect to the network.

In WebCTRL Server, select **Server > Restart > In Design Mode**.

NOTES

- Question marks and purple thermographic color on graphics indicate correct microblock paths. Missing data or dark yellow thermographic color indicate errors.
- If you do not have the Design and Normal Mode options, you are using a Tools Only installation of WebCTRL.

To switch to a different system

Design engineers working on multiple projects can switch systems in WebCTRL Server.

- 1 In WebCTRL Server, select **Server > Change Active System**.
- 2 Select a different system (it must be in the **webroot** folder) and mode.
- 3 Click **Select**.

To send a message to logged in operators

Notification messages are delivered immediately to WebCTRL client 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 browser window is minimized, the message is not visible.

- 1 In WebCTRL Server, click the **Current Users** tab.
- 2 Click the Notify button  beside the user you want to send a message to. Or click **Notify All Users**.
- 3 Type a **Notification message**.
- 4 Click **OK**.

NOTE You can also type `notify [followed by the message]` in the manual command dialog box in WebCTRL to send a message to all logged in operators.

To log off an operator

NOTE The operator will be logged off without warning.

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

NOTE You can also type `shutdown` in the manual command dialog box in WebCTRL to shut down the server.

Chapter 5

Working with equipment

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



Graphics pages (see page 35)

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.

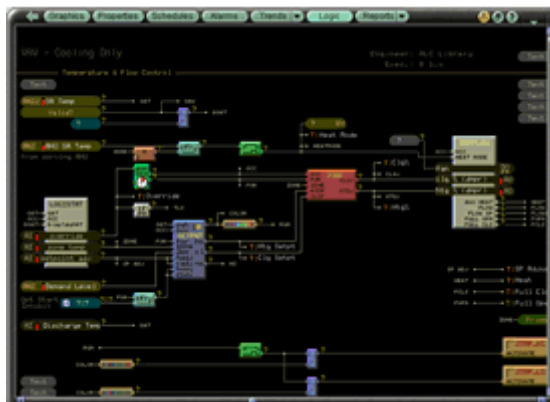


- **Equipment drawings** show the current status of mechanical equipment and often include an adjustable setpoint control.



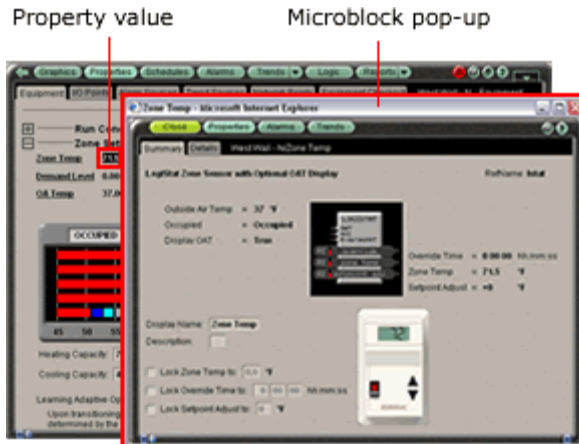
Properties pages (see page 38)

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 (see page 39)

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.



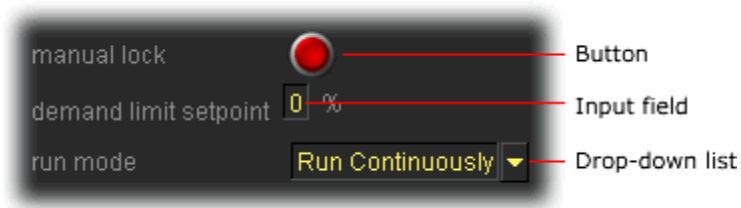
Microblock pop-ups

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 **Microblock Properties**
- Click the menu button , select **Microblock Properties**, then click a microblock name or value.

Graphics pages

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



Some typical controls are listed below:

- Button or switch to turn equipment on or off
- Input field to set a property value
- Drop-down list to select a state
- Interactive room sensor to override an unoccupied schedule
- Setpoint graph to adjust setpoints
- Trend graph to view trend information
- Link to jump to another WebCTRL page or to the Internet

NOTES

- Right-click a value, then select **Microblock Properties** to view and change properties in the microblock pop-up.
- Right-click a value, then select **Global Modify** (see page 41) to view and change the property in other control programs.
- If a graphic is larger than the action pane, right-click the graphic and select **Scale to Fit** to see the whole graphic. Right-click and select **Scale to 100%** to return the graphic to its original size.
- When using **Scale to 100%**, hold down Ctrl while rolling the mouse wheel to zoom in and out on a graphic.

To organize multiple graphics for a single tree item

When a single tree item has multiple graphics, you can use categories to organize the graphics in the **Graphics** button drop-down menu. Graphics are usually assigned to a category in ViewBuilder or in SiteBuilder. See "To define WebCTRL navigation" in ViewBuilder Help and "To attach graphic files" in SiteBuilder Help. But, you can also create categories and assign graphics to them in WebCTRL.

To add or edit a Graphics category in WebCTRL

- 1 On WebCTRL's **CFG** tree, click the plus sign (+) to the left of the **Categories** folder, then select **Graphic**.
- 2 Click **Add** or select a category to edit.
- 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 **OK**.

NOTE To delete a category, select the category, click **Delete**, then click **OK**.

To assign a graphic to a category in WebCTRL

- 1 On WebCTRL's **GEO** 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 **OK**.

To attach a graphic in WebCTRL

- 1 On WebCTRL's **GEO** tree, right-click the item that you want to attach a graphic to, then select **Configure**.
- 2 Optional for an equipment graphic: If you want to use the graphic for all equipment of the same type, select **Change for all equipment of this type** near the bottom of the **Views** section.
- 3 Do one of the following:

If the graphic is...

- | | |
|--|---|
| In the Views Available list | <ol style="list-style-type: none"> 1. Select the graphic, then click Attach. 2. Click OK or Apply. |
| Not in the Views Available list | <ol style="list-style-type: none"> 1. At the bottom of the Views section, click Add. 2. Browse to select the view file. 3. Click Open. 4. Click Continue. 5. Click Close. |
-

NOTES

- Click a graphic in the **Attached** list to edit the graphic's:
 - **Display Name**–The name that appears in the **Graphics** button drop-list
 - **Category**–See *To organize multiple graphics for a single tree item* (page 35).
 - **Instance**–The name that is used to create links to the graphic in ViewBuilder
- 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 WebCTRL's **GEO** tree, right-click the item that the graphic is attached to, then select **Configure**.
- 2 At the bottom of the **Views** section, click **Edit**.
- 3 In the **Current View Files** list, 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**.

To put the edited graphic back on the server

- 1 On WebCTRL's **GEO** tree, right-click the item that the graphic is attached to, then select **Configure**.
- 2 At the bottom of the **Views** section, click **Add**.
- 3 Browse to select the .view file.
- 4 Click **Open**.
- 5 Click **Continue**.
- 6 Click **Close**.

Properties pages

Properties pages are automatically generated from control programs created in EIKON LogicBuilder. Use Properties pages to:

- View the status of a piece of equipment. See *Colors and status in WebCTRL* (page 24).
- View or change the equipment or microblock properties currently stored in the control module.
- Commission equipment

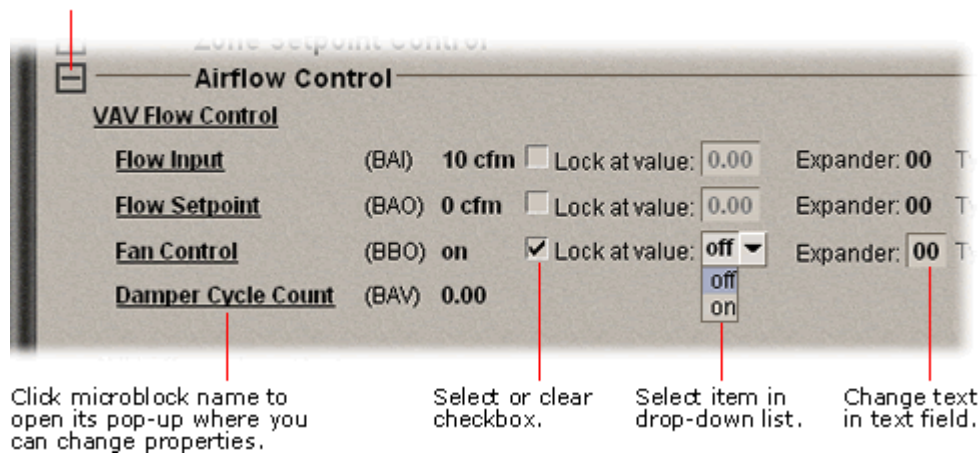
To view or change properties on a Properties page

- 1 Select a piece of equipment or a microblock on the **GEO** or **NET** 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 control module.

- 2 To change a property:

Click ☐ or ☐ to show or hide a section as needed.



- 3 Click **OK**.

NOTES

- Right-click a value, then select **Microblock Properties** to view and change properties in the microblock pop-up.
- Right-click a value, then select **Global Modify** (see page 41) to view and change the property in other control programs.
- To reset all properties of a control program to the values defined in EIKON LogicBuilder, right-click the equipment in the tree, then select **Reset to Defaults**.

CAUTION You will lose any changes made to the properties in WebCTRL.

Logic pages

The Logic page shows the control program for a piece of equipment. WebCTRL updates the live data (yellow text) every few seconds and whenever 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 the Page Up, Page Down, and arrow keys to scroll through the page.

To view a Logic page

- 1 Select a piece of equipment in the **GEO** or **NET** tree.
- 2 Click **Logic**.
- 3 Click a microblock to view its details.

To locate a microblock, section, or label on a Logic page

- 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 WebCTRL locate and highlight the item.
 - On the **Label** tab, select a label to have WebCTRL display a reduced logic page outlined in yellow that shows all instances of the label. A red box shows the location of an output label; a yellow box shows the location of 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 in a microblock pop-up

- 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, Alarms, or Trends page (see page 38).
- 4 Click **OK** or **Apply**.

NOTES

- Right-click a value, then select **Global Modify** (see page 41) to view and change the property in other control programs.
- To reset all properties of a control program to the values defined in EIKON LogicBuilder, right-click the equipment in the tree, then select **Reset to Defaults**.

CAUTION You will lose any changes made to the properties in WebCTRL.

Using the Logic page as a troubleshooting tool

WebCTRL monitors your system and provides feedback. Interpreting the feedback on a Logic page is a powerful troubleshooting tool.

If you find an unexpected value on a Properties page or a Logic page, work your way backward (right to left) through the sequence in the control program to discover what caused that value. 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 control module. • A sensor is missing or configured incorrectly on its Properties page.
Equipment displays an unexpected color - effective setpoints are different than the programmed setpoints	NOTE Equipment operates using effective setpoints. • Check hysteresis. • Check Demand Level. • Check Optimal Start. • Check Timed Local Override (TLO). • Check 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. 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.
WebCTRL 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
Output should be off, but the equipment is on	The On-Off-Auto (OOA) switch on the control module 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. 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.

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

Use Global Modify to view and change the same property in multiple microblocks

Use the Global Modify feature to:

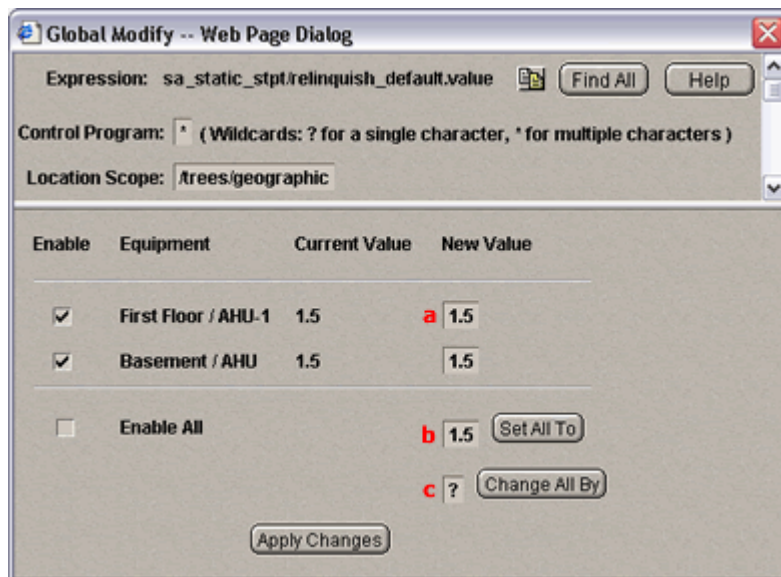
- View a microblock's full path, control program name, and the privileges required to change its properties.
- View or change a single property in several control programs at one time.

- 1 Browse to any page that displays the property you want to view or change.
- 2 Do one of the following to access Global Modify.
 - Right-click the property, then select **Global Modify**.
 - Alt+click the property.
 - Click the menu button , select **Global Modify**, then click the property.
- 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**1z**, vav**xz**, vav**12345z**
 - vav*1*2 matches vav12, vav**abc1xyz2**
 - 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 Select the tree item under which you want to search 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:
 - o Type a **New Value** to the right of each selected item (a).
 - o Type a number in the **Set All To** field (b).
 - o Type a number in the **Change All By** field (c).



- 8 Click **Set All To** or **Change All By**.
- 9 Click **Apply Changes**.

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

Use Global Copy to copy multiple properties to similar control programs

Use **Global Copy** to copy changes made to a control program's trend graph properties, custom reports, or other editable properties to other pieces of equipment using the same control program.

- 1 On the **GEO** or **NET** tree, right-click the piece of equipment that has the trend graph properties, custom reports, or properties you want to copy, then select **Copy Properties**.
- 2 In the **Global Copy** dialog box, select the trend graph properties, custom report, or control program properties that you want to copy.
- 3 Select the area on the tree containing similar control programs that you may want to copy these properties to, then click **Search**.

All other instances on that level and lower are listed in the expanded lower window.

- 4 Select or clear checkboxes as needed.
- 5 Click **Apply Changes**, then close the **Global Copy** dialog box.

Downloading system changes to control modules

If you make any of the following changes, you must download the new data from WebCTRL Server to the control modules.

In WebCTRL	• Change or reload a control program • Change or reload a driver • Change a BACview file • Change a schedule NOTE A schedule change automatically downloads unless you clear its Automatically Download Schedules checkbox (on the schedule's Configure tab under Show Advanced).
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

Any property change you make automatically downloads while WebCTRL is communicating with control modules. If the download fails, the **Failures** list on the **Download** page displays the control modules. See *If an item fails to download* (page 44).

CAUTION If you are trending critical information, use the storetrends manual command (see page 177) to upload all trends from modules to the database before doing a memory download.

To perform downloads from the Download page

- 1 On the **CFG** tree, click **Download**.
- 2 On the **Network** tree on the right, select an item you want to download.
- 3 Select the types of download needed for that item. See table below.
- 4 Click **Add** to add the item to the **Download Items** list.
- 5 Add more items if necessary.

- 6 Select the item(s) you want to download in the **Download Items** list.

TIP Select the **Select all** checkbox to select all items in the list.

- 7 Click **Download Selected Items**.

Download Type	Code	Downloads to the control module...
Memory	M	The control program and module driver NOTE A memory download also: • Synchronizes the control module's time to WebCTRL • Overwrites trends in the control module • Restarts the control module
Parameters	P	All parameters
Schedules	S	All schedules that are not set for automatic download
BBMD	B	BBMD tables
Items in the Download Items list may also display the following codes:		
	V	WebCTRL detected a mismatch between a value in the control module and WebCTRL Server. See <i>To resolve a mismatch</i> (page 45).
	U	Unsuccessful parameter upload from the control module. Try again or delete the item from the Download Items list.

To perform downloads from a Properties page or a microblock pop-up

Downloading from a Properties or Logic page downloads memory, parameters, and schedules for the selected equipment.

- 1 Go to a **Properties** page or microblock pop-up for the equipment.
- 2 Click the **Download** button below the red download message at the top of the page.

NOTE The **Download** button is visible only if a download is required.

If an item fails to download

All items that fail to download appear in the **Failures** list on the Download page. To attempt the download again:

- 1 Select the item from the **Failures** list.
- 2 Review the reason for the failure at the bottom of the page.
- 3 Correct the problem.

- 4 Click **Add** to add the failed item to the **Download Items** list.
- 5 Click **OK**.
- 6 Select the item(s) in the **Download Items** list.
- 7 Click **Download Selected Items**.

To resolve a mismatch

A mismatch occurs when a value in a control module does not match the value in WebCTRL Server. You can use either of the following methods to handle mismatches in your system.

A. Select **Always upload properties from control modules to WebCTRL Server on mismatch** on the **Communications** tab of the System Settings page to have WebCTRL upload automatically.

B. Clear **Always upload properties from control modules to WebCTRL Server on mismatch** so that you can evaluate every mismatch to determine the correct value.

If you use method B and a mismatch occurs:

- 1 Go to the **Properties** page for the equipment.
- 2 Click **Details** at the top of the page.
- 3 Do one of the following:
 - Click **Upload** to upload parameters from the control module to WebCTRL Server.
 - Click **Download** to download parameters from WebCTRL Server to the control module.

Setpoints

Use setpoints to set temperature values that control the HVAC equipment. WebCTRL displays 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 46).
- **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 (see page 121) to adjust setpoints automatically:

- Optimal Start
- Demand Control
- Setpoint Optimization

To change programmed setpoints

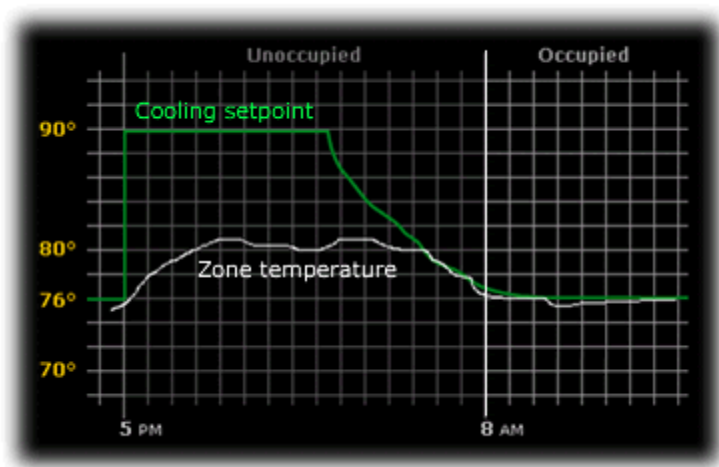
- 1 Navigate to a setpoint control in one of the following places:
 - The zone temperature section of a Properties page
 - The setpoint microblock pop-up on a Logic page
 - A Graphics page (Click a setpoint trend graph control to access the editable setpoint bar.)
- 2 On a programmed setpoint bar, click 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 **OK**.

Optimal Start

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

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



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 Zone Setpoint microblock.

- 1 In the **GEO** 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 The Zone Setpoint with Learning Adaptive Optimal Start microblock 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 Zone Setpoint with Learning Adaptive Optimal Start 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 In the **GEO** tree, select the equipment that you want to change.
- 2 Click **Properties**.
- 3 Adjust the color fields between the **Zone Set Points** graph and the **Effective Set Points** graph.

CAUTION When using Learning Adaptive Optimal Start, be sure that all equipment is properly maintained so that your system doesn't "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:

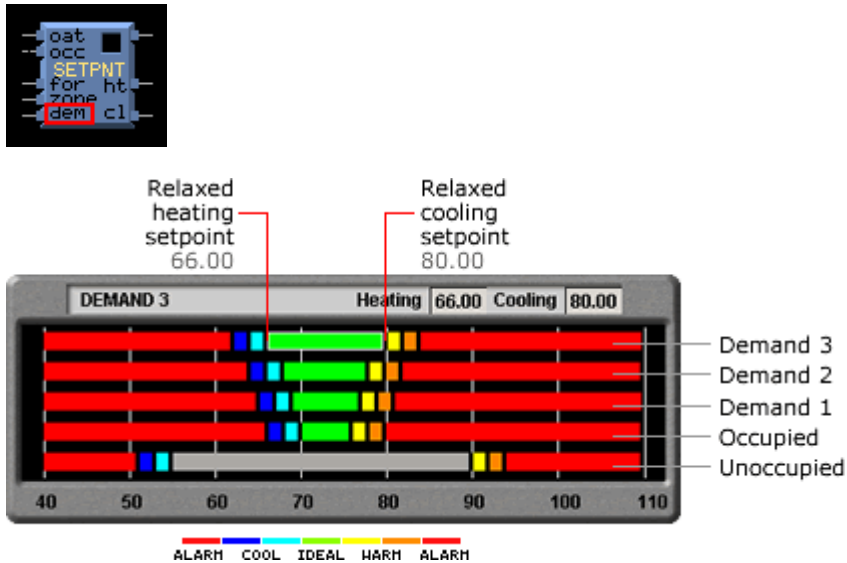
- Controlling energy use to avoid peak demand, ratchet, or time of use utility charges
- Maintaining ventilation at relaxed setpoints rather than shutting down equipment (as with load shedding or duty cycling)

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.

Zone Setpoint microblocks that have a **Demand** input use a demand control strategy to conserve energy by relaxing setpoints as the demand level rises. In EIKON LogicBuilder, you define the amount that setpoints will be adjusted or relaxed based on the demand level.



To define Demand Control properties

- 1 On the **GEO** or **NET** tree, select the electric meter.
- 2 Click **Properties**.
- 3 Expand the **Demand Level Parameters** section.
- 4 Type the **Start Time** and **End Time** to define the time period that you want demand control to be in effect for this zone.
- 5 Type kilowatts per hour (kW/hr) in the **Level** columns to define the amount of power that the demand must exceed before WebCTRL calls for a higher demand level.

NOTE Levels are defined in the electric meter control program in EIKON LogicBuilder. 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, WebCTRL will use Demand Level 1 setpoints. If the demand exceeds 1000 kW/hr, WebCTRL will use Demand Level 2 level setpoints and so on.

Peak Demand History

Demand Level Parameters

Demand Level (BAV) 0

Period	Start Time(hh:mm)	End Time(hh:mm)	Level 1	Level 2	Level 3
1	0:00	4:00	980	1500	1800
2	4:00	8:00	950	1400	1650
3	8:00	12:00	875	1200	1375
4	12:00	16:00	800	1000	1200
5	16:00	20:00	900	1300	1250
6	20:00	23:59	1000	1550	1800

Event Notification

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.

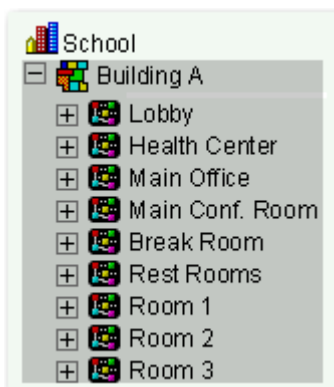
You must put a Setpoint Optimization microblock in a control program to receive Total, Average, Minimum, or Maximum microblock outputs from linked equipment.



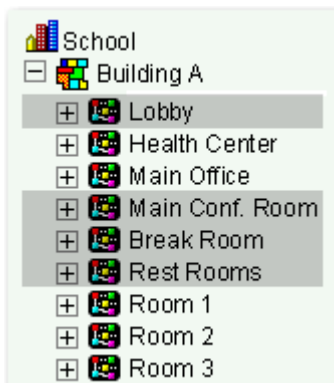
Chapter 6

Schedules

Using schedules to run equipment only when zones are occupied is WebCTRL's most effective cost-saving strategy (see page 121). 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 rest rooms. You can create a schedule group to control these different areas with a single schedule.

NOTES

- Do not include preheating or precooling time in your schedules. Optimal Start (see page 46), 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).

To view schedules

- 1 Select a **GEO** tree item.
- 2 Click **Schedules**, then the **View** tab.
- 3 Optional: Click an **Effective** bar to view all the schedules that contribute to the resulting schedule.

NOTE When multiple schedules affect a single area or piece of equipment, WebCTRL sorts the schedules by priority—the higher the priority, the closer the schedule is to the **Effective** bar. You set a schedule's priority when you add a schedule.

NOTE 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.

Setting up schedules

To apply a schedule to equipment

Schedules in WebCTRL are typically based on zone occupancy. See *Schedule categories* (page 54) if you want to create a schedule based on conditions other than occupancy.

- 1 On the **GEO** tree, select the area or equipment you want to schedule.
- 2 Click **Schedules**, then **Configure**.
- 3 Click **Add**.
- 4 Select a **Priority**. (Normal is low priority; Holiday is medium; Override is high.)
- 5 Select a **Type**. See table below.
- 6 Type a schedule name in the **Description** field.
- 7 Enter desired values in the fields below **Description**.
- 8 Change the default time segment (shown as a colored bar) for the schedule by doing one of the following:
 - Click the segment, then type **Start** and **End** times in the fields above the segment.
 - Click and drag either end of the segment or the entire segment.

- 9 Optional: Click **Show Advanced** below the schedule bar to add one or more separate segments to the schedule.
- 10 Click **OK**.

Type	Schedule runs
Weekly	Every week on the specified days
Date	On a single, specified date
Date Range	Between two specified dates
Date List	On multiple, specified dates
Wildcard	According to a repeating pattern (For example, the second Tuesday of every month) NOTE Wildcard schedules do not work with ALC legacy equipment. WebCTRL will let you know if you apply a schedule to legacy equipment.
Continuous	Continuously between specified times on two separate dates
Dated Weekly	Weekly 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 control module, you must use the 1.71:032 (or later) ExecB driver.

NOTES

- To have all new schedules and schedule changes in the system download automatically, click **Show Advanced** under the **Add** button, then select **Automatically Download Schedules**. If you want to manually download schedules, see *Downloading system changes to control modules* (page 43).
- When you apply a schedule to an item in the **GEO** 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, click **Show Advanced** under the **Add** button, then select **Ignore Schedules above this level**.

To apply a schedule to a group of equipment

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

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, you can edit the group to add other members.

- 1 On the **GRP** tree, select **Scheduling Groups**.
- 2 Click **Add**.
- 3 Type a name for the new schedule group in the **Name** field.

- 4 Optional: Change the default **Reference name**.
- 5 Click **OK**.
- 6 On the **GRP** tree, click the plus sign (+) next to **Scheduling Groups**.
- 7 Under **Scheduling Groups**, select the group you added.
- 8 Click the **Members** button at the top of the action pane.
- 9 On the selection tree at the right, select the items you want to add to the group.
NOTE Use Ctrl+click, Shift+click, or both to select multiple items.
- 10 Click **Add**.
TIP Use the **Raise** and **Lower** buttons to reorder items in the group list. Changing the order is for your viewing convenience and does not affect the system.
- 11 Click **OK**.
- 12 Click the **Schedules** button, then **Configure**.
- 13 Add a schedule to the group. See *To apply a schedule to equipment* (page 52).

To edit or delete a schedule

- 1 Do one of the following:
 - On the **GEO** tree, select the tree item where the schedule was defined.
 - On the **GRP** tree, click **Scheduling Groups**, then select the group you want to edit the schedule for.
- 2 Click **Schedules**, then **Configure**.
- 3 Select the schedule you want to edit or delete.
- 4 Edit the fields you want to change or click **Delete**.
- 5 Click **OK**.

NOTE WebCTRL automatically deletes expired dated schedules from the database at 3:30 AM every day. But expired schedules remain in the control module until the next time schedules are downloaded to the control module. You can change the deletion time on the **Scheduled Tasks** tab of the System Settings page (see page 125).

Using schedule categories

Occupancy is WebCTRL's only default schedule category. Occupancy 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 EIKON LogicBuilder. See *To use custom alarm and schedule categories* in EIKON LogicBuilder Help.
- 2 In EIKON LogicBuilder, select the new category from the **Schedule Category** droplist in a Time Clock microblock.
- 3 Create the same custom schedule category in WebCTRL. The **Reference Name** must be identical to the category's name in EIKON LogicBuilder. See *To add a custom schedule category in WebCTRL* below.

To add a custom schedule category in WebCTRL

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

- 1 On the WebCTRL **CFG** tree, click the plus sign (+) to the left of the **Categories** folder, then click **Schedule**.
- 2 Click **Add Category**.
- 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. **Category Details** fields.
- 4 Click **OK**.

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 schedule category that you added in EIKON LogicBuilder.
Schedule Category Description	The name used in the WebCTRL interface
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

Field	Notes
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. 
Priority Description	The name used in the WebCTRL interface.
Index	Represents this priority's relative level of importance within this schedule category. WebCTRL 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 sixteen.
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 as you would create any other schedule. NOTE Add segments for each state until every hour in the 24-hour schedule is covered by a segment.

To view, edit, or delete a schedule category

- 1 On the **CFG** tree, click the plus sign (+) to the left of the **Categories** folder, then click **Schedule**.
- 2 In the **Schedule Categories** table, select the category you want to edit or delete.
- 3 Edit the fields in the **Category Details** section or click **Delete**.
- 4 Click **OK**.

Chapter 7

Trends

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

You can collect trend data for any BACnet input or output point in WebCTRL. The control module reads values for a point at intervals that you define and then stores that data in the module.

Because a control module has limited memory for storing trend data, you can set up historical trending to archive the trend data from the control module to the WebCTRL database. A trend graph can display data from both the control module and the database.

NOTE You can also access trend data in the database using ODBC/SQL queries.

To collect trend data for a point

Before you can look at a trend graph for a point, you must enable trending for that point and then tell WebCTRL how you want the control module to collect the point's data.

- 1 On the **GEO** 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 Click the **Enable/Disable** tab, then select **Enable Trend Log** to have the control module collect trend data.
- 4 Enter information in the appropriate fields. See table below.
- 5 Click **OK**.

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 control modules to one minute or greater. U line control modules 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.
Allocate memory for __ samples in the module	Type the maximum number of samples to be stored in the control module. NOTE Trending consumes memory in the control module. The amount of memory available depends on the type of module. 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 control module.
	The sample and memory allocation fields together define trend data storage in the control module 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 control module will store 600 minutes (5 x 120) or 10 hours of trend data.
Stop When Full	Select 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.
Enable Trend Historian	Archives trend data to the system database.
Store Trends Now	Writes all trend data in the control module to the system database without having to enable trend historian.
Every __ trend samples write to historian	Writes all trend data in the control module to the system database each time the module 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 Allocate memory for __ samples in the module . 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 control module since data was last written to the database.
Last Record Written to Historian	Shows the last two times that trend data was written to the database.
Keep historical trends for __ days	This is based on the date that the sample was read. Set this field to 0 to use the system default defined in System Settings (see page 125).
Delete	Deletes all trend samples stored in the database for the item selected in the GEO tree.

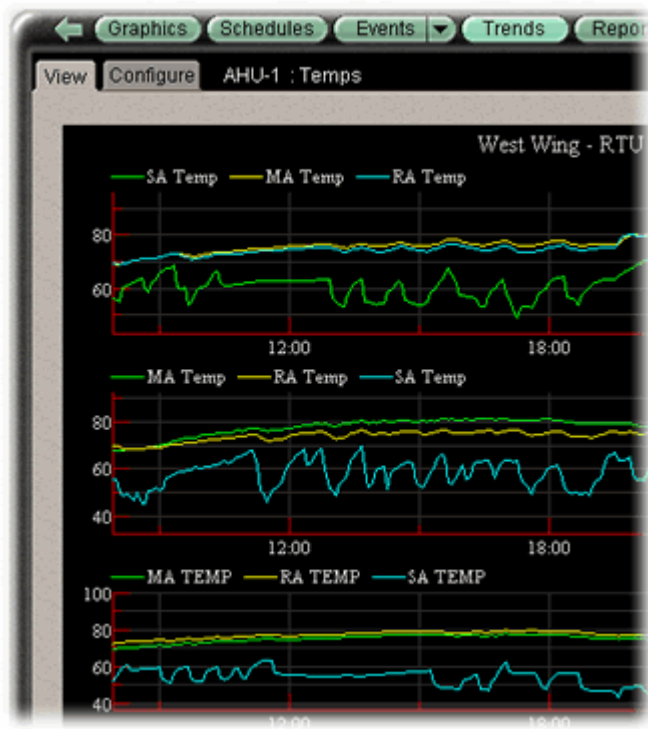
Field	Notes
BACnet Configuration	The Object Name is a unique alphanumeric string that defines the BACnet object. Although the Object Name field can be edited, it is not recommended. The Notification Class is set to 1 to receive alarms generated by ALC control modules.

NOTES

- You can use **Global Copy** (see page 41) to copy trend properties to other pieces of equipment that use the same control program.
- Run a Trend Usage report (see page 107) to view trend data.

Graphing data for multiple points

You can graph multiple trend points simultaneously to help monitor and troubleshoot your system.



A comparison trend graph can display up to four graphs on the page. Each graph can display up to 4 similar points—4 binary points or 4 analog points.

NOTE Before you create a comparison trend graph, you must enable trending for the individual points you want to include in the graph. See *To collect trend data for a point* (page 57).

To create a comparison trend graph

You can select up to 16 trends to view, then save them for graphing again later.

- 1 In the **GEO** tree, select the area or equipment where you want to view the graph.
- 2 Click the **Trends** button drop-down arrow, then select **New Graph**.
- 3 Select up to 16 trends from the selection tree.

NOTES

- Use Ctrl+click, Shift+click, or both to select multiple items.
 - The tree shows only points that have trending enabled. See *To collect trend data for a point* (page 57).
- 4 Click **View**.
 - 5 Optional: Click **Save** to name and save the trend graph configuration so the graph will be accessible from the **Trends** button.

To edit a comparison trend graph

- 1 On the **GEO** tree, select the tree item where the trend was created.
- 2 Click the **Trends** drop-down arrow, then select the trend graph.
- 3 Select the **Configure** tab.
- 4 Follow the instructions below for the edits you want to make.

To add another graph to a trend graph page

- 1 Click the **Add** button below the **Graphs** list.
- 2 Type a Y-axis label.
- 3 Add up to 4 points. (See below.)
- 4 Click **OK**.

To add a point to a trend graph

- 1 Select the graph in the **Graphs** list.
- 2 Click the **Add** button below the **Points** list.
- 3 Select a point from the **Data source** tree.

NOTES

- The tree shows only points that have trending enabled. See *To collect trend data for a point* (page 57).
 - Each graph can display up to 4 similar type points (all binary or all analog).
- 4 Click **OK**.

To delete a point from a trend graph

- 1 Select the graph in the **Graphs** list.
- 2 Select the point in the **Points** list.
- 3 Click the **Delete** button below the **Points** list.
- 4 Click **OK**.

To delete a graph from a comparison trend graph page

- 1 Select the graph you want to delete in the **Graphs** list.
- 2 Click the **Delete** button below the **Graphs** list.
- 3 Click **OK**.

To delete a comparison trend graph

- 1 On the **GEO** tree, select the tree item where the trend was created.
- 2 Click the **Trends** drop-down arrow, then select the trend graph.
- 3 Click the menu button , then select **Delete**.

Using trend graphs

In WebCTRL, you can view and print trend graphs. You can also copy the trend data to a spreadsheet program.

To view a trend graph

- 1 On the **GEO** tree, select the equipment whose trend(s) you want to view.
- 2 Click the **Trends** button drop-down arrow, then select the graph you want to view.
- 3 Select the **View** tab.

NOTES

- A large marker indicates a point that is in alarm, in fault, out of service, or has been overridden. Ctrl+click the marker to view details.
- A dotted vertical line indicates:
 - Trend Historian 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.
 - Control module received a time synchronization from its network router or from WebCTRL. Ctrl-click the line to view the time correction.
 - Trend Log has been enabled or disabled.
- Ctrl-click a dotted vertical line to view details.

Tools for viewing trends

Right-click anywhere on a trend graph to access most of the tools described below.

Shortcut	Tool	Notes
Arrow keys	Pan	If you display more than one graph, panning up and down affects only one graph at a time. Panning left to right affects all graphs. You can also Alt+click and drag inside the graph.
Page Down	Zoom in	You can also use the + key on the numeric keypad, the X key, or drag a rectangle around area.
Page Up	Zoom out	You can also use the - (minus) key on the numeric keypad or the Z key.
Home	Zoom to extents	Shows all the data you have viewed in the current session of a particular trend graph.
End	Reset view	Resets the display to its default setting. You can also use the Enter or R key.
Esc	Undo	Undo up to 10 changes to your view.
J	Set start date	Enter the date you want the trend to jump to. The trend displays the same time range for the new date. Press the J key again to hide the date fields.
H	History Only	Displays only the historical data on the graph.
U	Auto Update	The trend graph polls for data every 10 seconds. Press U again to stop updating.
M	Point Markers	Shows a marker for each data point in the graph.
Ctrl+C	Copy	Copies only the data from the time range that is currently displayed.

Shortcut	Tool	Notes
	Refresh the display (gather trend data)	Click Trends .
	Display a specific sample's data	Ctrl+click a sample to view the point name, time and date the sample was read, the exact point value, and if the point is in alarm, is in fault, out of service, or has been overridden. Click anywhere to clear the details.

To print a trend graph

- 1 On the **GEO** tree, select the equipment that has the trend(s) you want to print.
- 2 Click the **Trends** button drop-down arrow, then select the point graph or custom graph you want to print.
- 3 Select the **View** tab to display the graph.
- 4 Click the print button .

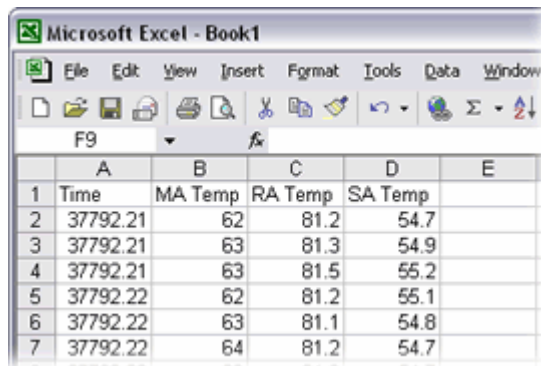
To transfer trend data to a table format

You can copy the trend data currently displayed in the graph and paste it into a spreadsheet application, such as Microsoft® Excel.

NOTE If you want to transfer a few points in the system, this procedure may be sufficient. If you want trend data for the entire database, you can export to a .xml file in SiteBuilder to then import into a spreadsheet application.

- 1 On the **GEO** tree, select the equipment.
- 2 Click the **Trends** button drop-down arrow, then select the point graph or custom graph.
- 3 Select the **View** tab to display the graph.
- 4 Click somewhere in the graph, then press Ctrl+C to copy the data.
- 5 Click **OK**.

- 6 Start your spreadsheet program and paste the trend data into your spreadsheet.



The screenshot shows a Microsoft Excel spreadsheet with the following data:

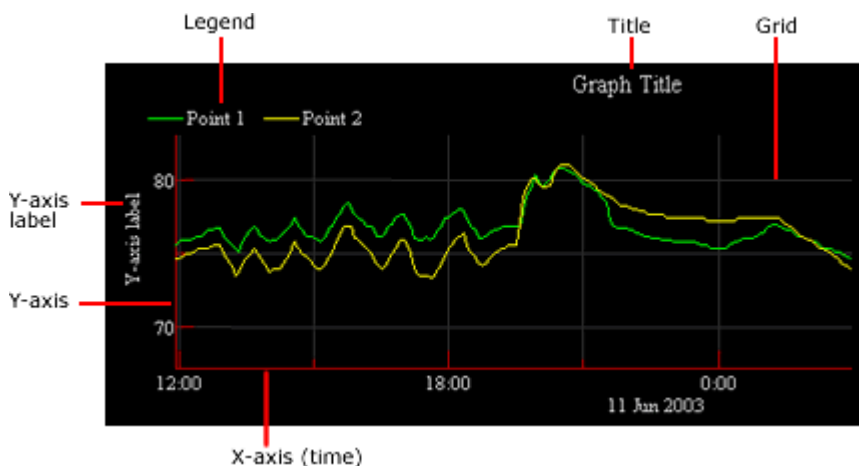
	A	B	C	D	E
1	Time	MA Temp	RA Temp	SA Temp	
2	37792.21	62	81.2	54.7	
3	37792.21	63	81.3	54.9	
4	37792.21	63	81.5	55.2	
5	37792.22	62	81.2	55.1	
6	37792.22	63	81.1	54.8	
7	37792.22	64	81.2	54.7	

- 7 Convert the trend data in the **Time** column to a readable date/time format using the spreadsheet application's formatting options. For example, in Microsoft Excel, highlight the cells you want to format and choose **Format > Cells**. On the **Number** tab, choose **Time** from the **Category** list, and select the type of format you want to see.

Customizing graph appearance

To edit graph properties

Each point trend graph has a standard format. However, you can change the format and how much data is displayed on the graph.



- 1 On the **GEO** tree, select the equipment that has the trend graph properties you want to configure.
- 2 Click the **Trends** button drop-down arrow, then select the trend you want to change.
- 3 Click the **Configure** tab.
- 4 Edit the graph properties as needed. See table below.
- 5 Click **OK**.

Field	Notes
Font size	Lets you change the font size of the graph's title and other text.
Enable Grid?	Show or hide the graph's grid.
Autoscale x-axis	Gathers the most recent 2000 data samples and then autoscales the x-axis to include the complete time range of all the samples.
X initial range	If you do not autoscale the x-axis, type in this field how far back WebCTRL should go to display data. For example, if you want to see trend data from a week ago, type 7 in the Days field.
Autoscale y-axis	Gathers the trend data from the control module and then autoscales the y-axis to include the complete range of values.
Y-axis minimum and maximum	If you do not autoscale the y-axis, type the minimum and maximum value that you want the graph to display.
Graphs*	Add or delete graphs from the page.
Points*	Add or delete points from the graph selected in the Graphs table.

* for custom graphs only

To change colors, line styles, and marker types

You can change colors, line styles, and marker types for both point trend graphs and custom trend graphs. The changes you make apply to all graphs in the system, and become the default settings for future trend graphs.

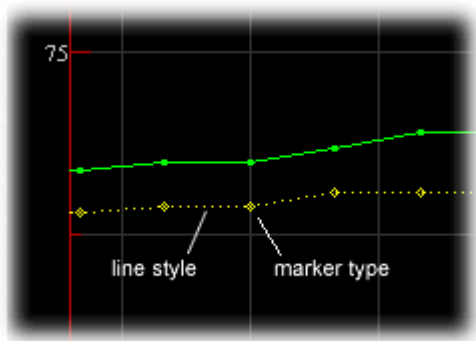
- 1 On the **CFG** tree, select **Trends Display Setup** to change the settings for displaying trend graphs or select **Trends Print Setup** to change the settings for printing trend graphs.
- 2 Follow the appropriate instructions below.
- 3 Click **OK**.

To change a color

Click the colored box to the right of the graph element that you want to change, then select the new color in the color palette. Or, you can type the hexadecimal value in the **RGB** field.



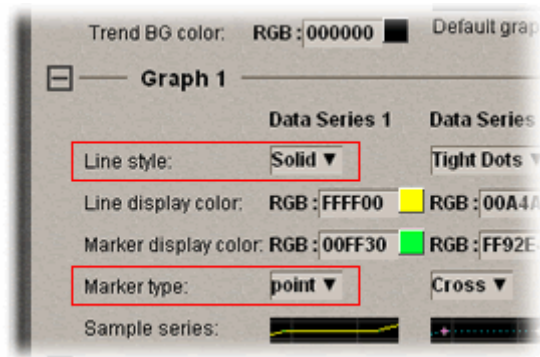
To change line styles and marker types



For a point trend graph, select the new line style and marker type under **Graph 1, Data Series 1**.

For a custom trend graph:

- 1 Click the plus sign (+) to the left of the graph you want to change.
- 2 The four **Data Series** refer to the 4 points that you can include on a custom trend graph. Under the appropriate **Data Series**, select the new line style and marker style you want.

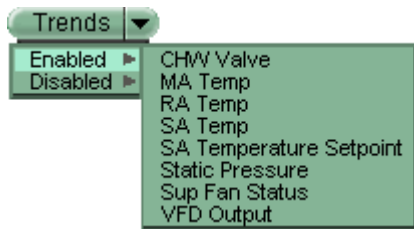


To copy a trend graph's properties

You can use **Global Copy** (see page 41) to copy trend properties to other pieces of equipment that use the same control program.

To add, edit, or delete a trend category

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



You can add categories for your custom trend graphs.

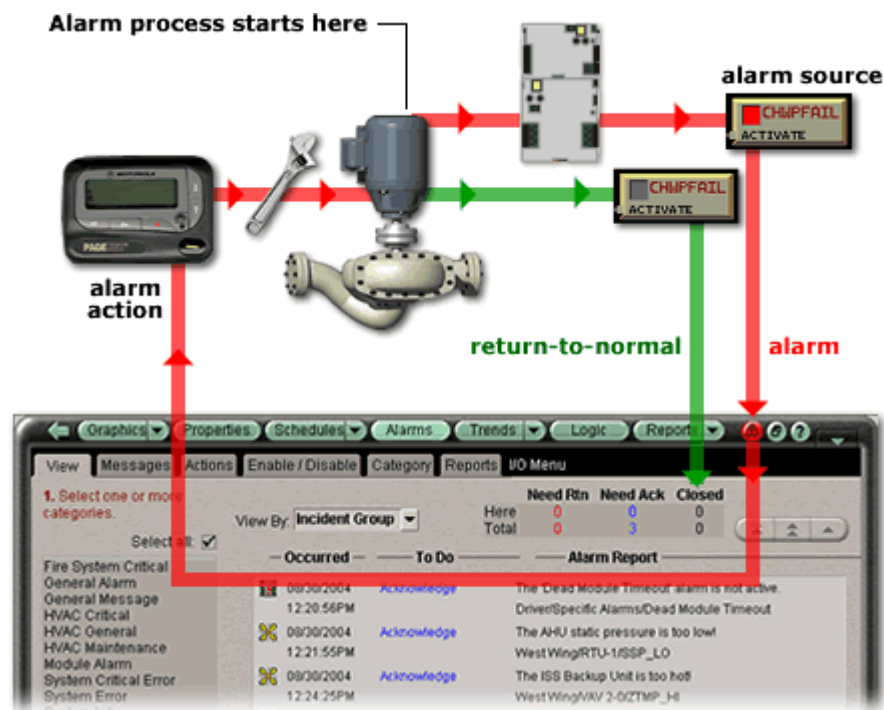
- 1 On the **CFG** tree, click the plus sign (+) to the left of the **Categories** folder, then select **Trend**.
- 2 Click **Add** or select a category to edit.
- 3 Type the **Category Name** and **Reference Name**.
- 4 Select a privilege so that only operators with that privilege can access trends in the category.
- 5 Click **OK**.

NOTE To delete a category, select the category, click **Delete**, then click **OK**.

Chapter 8

Alarms

Alarm A message sent from an alarm source (usually a microblock in a control program) to WebCTRL to notify you that certain conditions exist, such as a piece of equipment has stopped running or a temperature is too high. When WebCTRL receives an alarm, it displays information about the alarm on the Alarms page. WebCTRL 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 EIKON LogicBuilder. In WebCTRL, you:

- View, acknowledge, and delete alarms received by WebCTRL (see page 70)
- Set up the alarm actions that WebCTRL performs (see page 74)
- Edit alarm sources that were set up in EIKON LogicBuilder or set up new alarm sources to generate alarms (see page 93)
- Customize alarms by changing the category or message (see page 97)

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

Viewing, acknowledging, and deleting alarms

In WebCTRL, you can view, acknowledge, and delete alarms received by WebCTRL.

The color of the system-wide alarms button signifies one of the following conditions:

- Red—Critical alarms need to be acknowledged.
- Yellow—Non-critical alarms need to be acknowledged.
- Green—No alarms need to be acknowledged.

System-wide alarm button



Click the system-wide alarms button to view all alarms in the system.

You must acknowledge alarms that have been set up to require acknowledgement.

You should delete alarms from your system as WebCTRL closes them because large quantities of stored alarms can reduce the efficiency of your system. WebCTRL closes an alarm when all of the following have occurred:

- You acknowledge the alarm (if required)
- WebCTRL receives a return-to-normal (if required)
- WebCTRL performs all alarm actions

If you want to save alarm information before deleting, run an Audit Log report (see page 107).

To view alarms in WebCTRL

- 1 On the **GEO** or **NET** tree, select the system level, an area, or a piece of equipment.

NOTE The WebCTRL tree is limited to ten levels. When an alarm source is deeper than ten levels, the alarm is reassigned to the system level.

- 2 Click **Alarms**, then select the **View** tab.

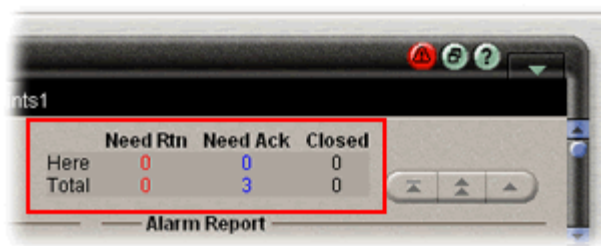
- 3 Select the alarm categories that you want to view. Use Ctrl+click, Shift+click, or both to select multiple categories, or select the **Select All** checkbox.

The alarms list displays all alarms received for the selected location and below. See table below.

- 4 Double-click an alarm to see more information. Double-click again to hide this information.

NOTE This information includes a path to the alarm source. Each section of the path is a link to that location. For example, in the path **West Wing/RTU-1/SSP_LO**, West Wing links to the West Wing graphic, RTU-1 links to the equipment graphic, and SSP_LO links to microblock's Properties page.

Field	Notes
View By	Select one of the following options to sort the alarms list: Date Displays all alarms based on the time the alarm was generated. To Do Displays only alarms that are waiting on one or more actions to complete before they are closed. Incident Group Groups the alarms in an alarm incident group with a bracket to the left of the icons. Alarm Incident group All alarms related to a particular incident. For example, an alarm and its return-to-normal form an alarm incident group.
Status table	Gives the status of alarms at the current location (Here) and in the entire system (Total). This table shows the number of alarms that need a return-to-normal, need to be acknowledged, or are closed.



Field	Notes
Alarm icon	Indicates the alarm category.  Access Control  Lighting  Module Alarm  Fire  General Alarm  System Error  HVAC  General Message  Unknown Critical alarms: The category icon plus . For example, . Maintenance alarms: The category icon plus . For example, .
Occurred	The date and time the alarm was generated
To Do	Acknowledge indicates the alarm needs to be acknowledged. Waiting for normal indicates the alarm requires a return-to-normal. A checkmark indicates the alarm is closed.
Alarm Report	The alarm message.
Navigation buttons	Use these buttons to move through the alarm list.  To the end of the list One alarm at a time One page at a time
Additional Actions	You can: - acknowledge or delete multiple alarms simultaneously - search for an alarm generated on a particular date and time

NOTES

- Alarms generated by WebCTRL Server appear at the system level.
- Alarms generated by control modules appear at the system level on the **GEO** tree, but in the network hierarchy on the **NET** tree.

To acknowledge alarms

To acknowledge a single alarm

- On the **Alarms** page, select the **View** tab.
- Select an alarm that shows **Acknowledge** in the **To Do** column.
- Click the **Acknowledge** button beneath the list.

To acknowledge all alarms in the selected categories:

- 1 On the **Alarms** page, select the **View** tab.
- 2 Click **Additional Actions**.
- 3 Click **All** under **Acknowledge alarms in selected categories**.

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

To delete alarms

To delete a single alarm:

- 1 On the Alarms page, select the **View** tab.
- 2 Select an alarm.
- 3 Click **Delete**.

To delete multiple alarms in the selected categories:

- 1 On the Alarms page, select the **View** tab.
- 2 Click **Additional Actions**.
- 3 Click the appropriate button under **Delete alarms in selected categories**.
 - **Closed Incidents** deletes all closed incident groups. An incident group is considered closed when all alarms in the group are closed.
 - **All System** deletes all system alarms.
 - **All** deletes all alarms at the selected location and below.

NOTES

- To have WebCTRL automatically delete alarm incident groups a specified number of days after the groups close, select this option on the **Scheduled Tasks** tab in System Settings (see page 125).
- Also on the **Scheduled Tasks** tab in **System Settings**, you can set WebCTRL 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 WebCTRL never receives the return-to-normal, you can click **Force Normal** so that WebCTRL can close the alarm. **Force Normal** has no effect on the alarm condition that generated the alarm.

To receive audible notification of alarms

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

- 1 On the **CFG** tree, select **My Settings**.
- 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 temporarily silence the sound by clicking the menu button  and selecting **Silence**. The alarm is silenced for a period of about five minutes or until another alarm that triggers a sound is received.

Setting up alarm actions

Alarm Action An action that WebCTRL performs 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.

WebCTRL can perform the following alarm actions:

- Alarm Popup
- Print
- Propagate To Server
- Run External Program
- Send Alphanumeric Page
- Send E-Mail
- Write to File

If your system has the Advanced Alarming package, WebCTRL can also perform the following alarm actions:

- Send SNMP Trap
- Write Property
- Write to Database

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 **GEO** or **NET** tree, select the area, equipment, or control module containing the alarm sources.
- 2** Click **Alarms**, then select the **Actions** tab.
- 3** Follow the 3 steps on the screen.
NOTE Use Ctrl+click, Shift+click, or both to select multiple items.
- 4** Click **Add**.
- 5** Set up the alarm action by editing the fields on the alarm action page. See the appropriate alarm action below for field descriptions.
- 6** Click **OK**.

After you have assigned alarm actions to an alarm source, simulate the alarm (see page 96) to check your work. If an alarm action fails, WebCTRL receives an alarm for the failed action.

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

To assign an alarm action to a single alarm source

- 1** On the **GEO** or **NET** tree, select the alarm source (microblock).
- 2** Click **Alarms**, then select the **Actions** tab.
- 3** Click the drop-down arrow to select an alarm action, then 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 **OK**.

Alarm Popup

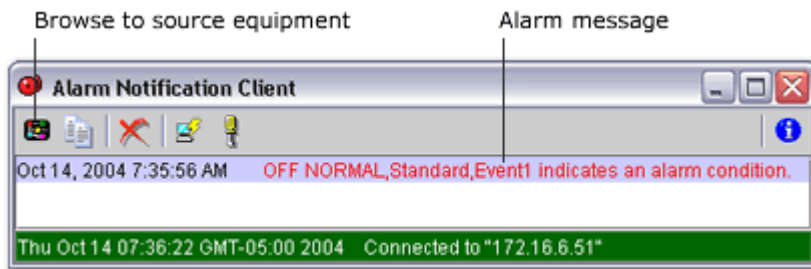
The **Alarm Popup** alarm action pops up a message on any networked computer that is running the WebCTRL Alarm Notification Client application.

Field	Notes
To Operator To Group	Select individual operators or operator groups who should receive alarm notification.
Generate alarm if delivery fails	Select this checkbox to send a System Info alarm to WebCTRL Server if the popup recipient is not currently running the Alarm Notification Client application.
Message text	Use punctuation, spaces, or returns after the entries to format the text. To add live data to the text, select field codes (see page 101) from the Append Field Code list.
Append Field Code	Add field codes (see page 101) to the message text if desired.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 1. Create a schedule group (see page 53), 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 you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 4. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run if schedule group <your new group> is Unoccupied. * Available only if you have the Advanced Alarming package.

Using the WebCTRL Alarm Notification Client application

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

Select an alarm message, then click  to open a browser window displaying the piece of equipment that generated the alarm.



Button	Notes	
	Opens a browser window that displays the equipment that generated the alarm.	
	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 WebCTRL.	
	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 NOTE The default port is 47806. If you change this, you must also change the Port field in WebCTRL's System Settings. See <i>To set WebCTRL Server to support Alarm Popup clients</i> below.
	Browse To	Which page you want to see first in WebCTRL when browsing to the equipment
	Internet Explorer	Whether or not browsing to the equipment opens a new browser window
	Notification Sounds	Whether or not you want to hear an alarm and which sound file to use

To set up WebCTRL Server to support Alarm Popup clients

- 1 On WebCTRL's **CFG** tree, select **System Settings > Other Applications**.
- 2 Select **Enable support for Alarm Popup 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 WebCTRL 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 WebCTRL Alarm Notification Client.

NOTE If the WebCTRL 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 WebCTRL 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 **CFG** tree, click **Client Installs**.
- 2 Click **Alarm Popup Application**.
- 3 Click **Run**, then follow the on-screen instructions to install the WebCTRL 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 information above for a description of the settings.
- 5 Click **OK**.
- 6 Minimize the WebCTRL Alarm Notification Client window.

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 Printer 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 after the entries to format the text. To add live data to the text, select field codes (see page 101) from the Append Field Code list.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 5. Create a schedule group (see page 53), but do not assign members to it. 6. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 7. Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 8. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run 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.

Field	Notes
Message text	The alarm message that is sent to the parent server.
Append Field Code	Add field codes (see page 101) to include live data in the Message text field.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: - Run the alarm action only when the alarm source generates an alarm or when it returns to normal. - Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * - Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: - Create a schedule group (see page 53), but do not assign members to it. - Create a schedule for the group. Set the occupied hours to be the same as the work hours. - Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. - Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run 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.

Field	Notes
Command Line	The path of the executable file on the WebCTRL server followed by the path of the output file. Example: <pre>c:\windows\notepad.exe c:\WebCTRL\webroot\alarms.txt</pre>

Field	Notes
Append Field Code	Add field codes (see page 101) 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 WebCTRL to wait for the external program to finish running before initiating the next Run External Program alarm action.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 13. Create a schedule group (see page 53), but do not assign members to it. 14. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 15. Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 16. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run 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.

Field	Notes
Mail Host	Your Simple Mail Transfer Protocol (SMTP) mailserver's address. TIP This can be either an IP address or a system name, such as mail.mycompany.com.
Specify Mail User	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 after the entries to format the text. To add live data to the text, select field codes (see page 101) from the Append Field Code list.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 17. Create a schedule group (see page 53), but do not assign members to it. 18. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 19. Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 20. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run 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 set up a dial-up networking connection

WebCTRL 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 > 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 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 Excel file.

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	Your Simple Mail Transfer Protocol (SMTP) mailserver's address. TIP This can be either an IP address or a system name, such as mail.mycompany.com.
Specify Mail User	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 after the entries to format the text. To add live data to the text, select field codes (see page 101) from the Append Field Code list.

Field	Notes
Attach Report	Select to attach a WebCTRL report to the e-mail, then select the Report and the Format. 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.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 21. Create a schedule group (see page 53), but do not assign members to it. 22. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 23. Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 24. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run if schedule group <your new group> is Unoccupied. * Available only if you have the Advanced Alarming package.

NOTES

- You should not assign this alarm action to frequently-occurring alarms as this may cause problems on your network or the Internet.
- This alarm action uses SMTP TCP Port 25 to send emails. To use a different port, open **WebCTRL#.#\webroot\<system_name>\system.properties** in a text editor such as Notepad. In the line **#mail.server.port = 25**, delete **#** at the beginning of the line and change **25** to the port you want to use. If you make this change while WebCTRL Server is running, you must restart it to have the change take effect.

To secure mailserver communication using Secure Sockets Layer (SSL)

By default, the Send E-mail alarm action uses the SMTP protocol to send the email as clear text over TCP/IP. You can switch to one of the following protocols to secure email communication between the WebCTRL server and the mailserver.

- | | |
|-----------------|---|
| SMTPS | Sends email using SSL, a communication protocol that provides data encryption. |
| STARTTLS | Sends email using SSL, but does not begin encryption until WebCTRL issues STARTTLS command. |

To use one of these protocols:

- 1 Open **WebCTRL#.#\webroot\<system_name>\system.properties** in a text editor such as Notepad.
- 2 In the line **#mail.transport.protocol = SMTP**, delete **#** at the beginning of the line and change **SMTP** to **SMTPS** or **STARTTLS**. If you make this change while WebCTRL Server is running, you must restart it to have the change take effect.

Before WebCTRL sends an email using SSL, WebCTRL requests an SSL certificate from the mailserver. If the certificate that WebCTRL receives is in its list of trusted certificates, WebCTRL sends the email. If the certificate is not in the list, WebCTRL generates a system alarm indicating that the email alarm action failed. If this occurs, you will need to add the mailserver's certificate to WebCTRL'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 From the WebCTRL server's **Start** menu, select **Run**.
- 4 In the **Open** field, type the following command:

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

replacing:

<x.x> with the system's version number

<operating_system> with the WebCTRL folder name for the operating system you are running

<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**.

To set up a dial-up networking connection

WebCTRL 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 > 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 you just created, then click **Set Default**.
- 10 Select **Always dial my default connection**.

Send SNMP Trap

Optional WebCTRL Package

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 **WebCTRL#.#\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 WebCTRL Server 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.

Field	Notes
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 (see page 101) from the Append Field Code list.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 25. Create a schedule group (see page 53), but do not assign members to it. 26. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 27. Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 28. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run if schedule group <your new group> is Unoccupied. * Available only if you have the Advanced Alarming package.

* Ask your network administrator for this information.

Write Property

Optional WebCTRL Package

The **Write Property** alarm action writes a specified value to a microblock 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 target property's expression.
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 (see page 101) to add this information to the Value to Write field.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 29. Create a schedule group (see page 53), but do not assign members to it. 30. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 31. Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 32. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run if schedule group <your new group> is Unoccupied. * Available only if you have the Advanced Alarming package.

Write to Database

Optional WebCTRL Package

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 WebCTRL writes alarm information to the **write_db_ra** table in the WebCTRL alarm database. The following table describes the information that WebCTRL writes to the database and gives the column name and data type you will need in order 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
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 (see page 101) from the Append Field Code list .	RA_TEXT_	String

Run Conditions

By default, WebCTRL performs an alarm action when the alarm source generates an alarm **and** when it returns to normal. Under **Run Conditions** you can choose to:

- Run the alarm action only when the alarm source generates an alarm **or** when it returns to normal.
- Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. *
- Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours:

33. Create a schedule group (see page 53), but do not assign members to it.
34. Create a schedule for the group. Set the occupied hours to be the same as the work hours.
35. Create the alarm action that you want WebCTRL to perform during work hours. Under **Run Conditions**, select **Run if schedule group <your new group> is Occupied**.
36. Create the alarm action that you want WebCTRL to perform during after hours. Under **Run Conditions**, select **Run if schedule group <your new group> is Unoccupied**.

* Available only if you have the Advanced Alarming package.

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 from WebCTRL.
- If your system uses an Access or MSDE database, you cannot open the database in a third-party application while WebCTRL or SiteBuilder is running.

Writing to a custom database

WebCTRL 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 WebCTRL to write to a custom database instead of the WebCTRL alarm database, select the **Specify Custom Database** checkbox 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 (see page 101) 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... <table> <tr> <td>SQL Server</td><td>jdbc:odbc:<odbc_alias></td></tr> <tr> <td>MySQL</td><td>jdbc:mysql://<host>:<port>/<instance></td></tr> <tr> <td>PostgreSQL</td><td>jdbc:postgresql://<host>:<port>/<instance></td></tr> <tr> <td>Oracle</td><td>jdbc:oracle:thin@<host>:<port>/<instance></td></tr> </table> 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	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>
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>								
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 (see page 101) 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 (see page 101) to format the time.
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 37. Create a schedule group (see page 53), but do not assign members to it. 38. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 39. Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 40. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run if schedule group <your new group> is Unoccupied. 41. * 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 name for the file you want to write to such as c:\WebCTRL#.#\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, WebCTRL 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 (see page 101).
Write as File	Select to record alarm information in a text file.
Append	Select to append 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.
Text to write to the file	Use punctuation, spaces, or returns after the entries to format the text. To add live data to the text, select field codes (see page 101) from the Append Field Code list.
Write as Report	Select to write a WebCTRL report to a file, then select the Report and the Format. 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
Run Conditions	By default, WebCTRL performs an alarm action when the alarm source generates an alarm and when it returns to normal. Under Run Conditions you can choose to: • Run the alarm action only when the alarm source generates an alarm or when it returns to normal. • Wait for the specified amount of time, then run the alarm action if the alarm has not been acknowledged or has not returned to normal. * • Run 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 WebCTRL perform one alarm action during work hours and a different alarm action after work hours: 42. Create a schedule group (see page 53), but do not assign members to it. 43. Create a schedule for the group. Set the occupied hours to be the same as the work hours. 44. Create the alarm action that you want WebCTRL to perform during work hours. Under Run Conditions, select Run if schedule group <your new group> is Occupied. 45. Create the alarm action that you want WebCTRL to perform during after hours. Under Run Conditions, select Run if schedule group <your new group> is Unoccupied. * Available only if you have the Advanced Alarming package.

Setting up an alarm source in WebCTRL

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

- Edit an alarm source's settings from EIKON LogicBuilder 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.

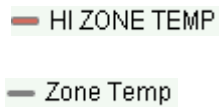
- Alarm microblocks include logic that takes into account conditions such as space occupancy.
- I/O point microblocks can generate an alarm when the present value exceeds defined limits (analog) or when the present value changes to an off-normal state (binary). This type of microblock is typically set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

This type of microblock...



Appears in the GEO or NET tree as...



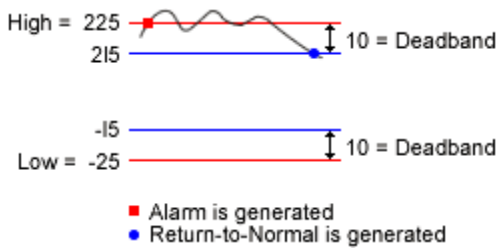
To set up, edit, or disable alarm sources

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

- 1 On the **GEO** or **NET** 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 **OK**.

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	Select the checkbox to enable the alarm source to generate alarms. Clear the checkbox to disable the alarm source.

Field	Notes
Alarm	Select 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 the Status checkbox is selected, the alarm condition currently exists.
Return to Normal	Select to have the alarm source generate a return-to-normal when the alarm condition returns to a normal state.
Fault	Select to have an alarm generated if the alarm source is not configured correctly. NOTE If the Status checkbox is selected, the alarm source is currently misconfigured.
Alarm requires acknowledgement	Select to have WebCTRL require that an operator acknowledge the alarm.
Return requires acknowledgement	Select to have WebCTRL 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 NOTE This property affects those alarms that pass through a modem to get to the WebCTRL server. Select Classified as critical to have alarms from this alarm source delivered to WebCTRL immediately. If you are 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 WebCTRL - the gateway buffer is full, at which time all alarms are sent to WebCTRL

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	Select to have this alarm immediately delivered through a modem connection.
Notification Class	Do not change this field.

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

- 1 On the **GEO** or **NET** tree, area, equipment, or control module 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 select the **Select All** checkbox.
- 4 In step **2**, select the alarm sources.
- 5 Make appropriate changes in step **3**.
- 6 Click **OK**.

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 (see page 74), you can simulate an alarm or its return-to-normal.

- 1 On the **GEO** tree, select the alarm source (, but not ) whose alarm you want to simulate.
- 2 Click **Alarms**, then select the **Enable/Disable** tab.
- 3 Select the **Enable** checkbox next to **Alarm** or **Return to Normal**.
- 4 Click **Simulate** next to **Alarm** or **Return to Normal**.
- 5 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 **GEO** or **NET** 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.

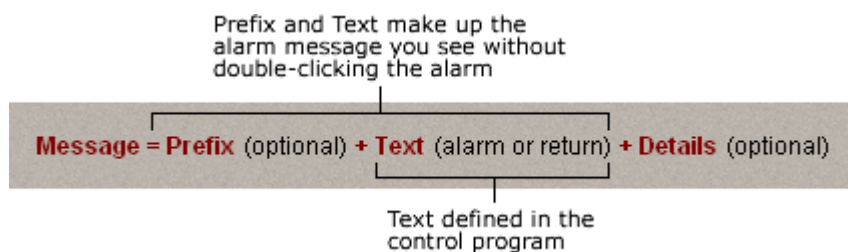
NOTE You may be able to change settings that relate to the tab you selected.

Customizing alarms

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

Alarm messages

An alarm message is the information WebCTRL displays on the Alarms page **View** tab for an alarm. An alarm message can consist of three parts.



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

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 74).

To edit the message for an alarm source

- 1 On the **GEO** 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 (see page 101) 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 **OK**.

To add a Prefix or Details for multiple alarm sources

- 1 In the **GEO** or **NET** tree, select the area, equipment, or control module 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 select the **Select All** checkbox.
- 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 **OK**.

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 received by WebCTRL (see page 70)
- Assign alarm actions to selected categories of alarm sources (see page 74)
- Set up alarm sources in selected categories (see page 93)

Each alarm source is assigned to an alarm category in EIKON LogicBuilder, but you can change the category assignment in WebCTRL.

WebCTRL has a number of default alarm categories, but you can create custom categories, if needed.

To assign alarm sources to a different category

- 1 On the **GEO** or **NET** tree, select the area, equipment, or control module 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 select the **Select All** checkbox.
- 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 **OK**.

To add a custom alarm category

PREREQUISITE Add the custom alarm category in EIKON LogicBuilder. See *To use custom alarm and schedule categories* in EIKON LogicBuilder Help.

- 1 On the **CFG** tree, click the plus sign (+) to the left of **Categories**.
- 2 Click **Alarms**.
- 3 Click **Add**. See table below.
- 4 Click **OK**.

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 EIKON LogicBuilder.
Icon	1. Find or create a 32 x 32 pixel icon (.gif file) that represents the new category. For example,  2. Store the .gif file in the WebCTRLx.x\webroot_common\lv15\graphics\event_categories folder. 3. Type /_common/lv15/graphics/event_categories/<file_name>.gif in the Icon field.

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 acknowledgements at the alarm source in EIKON LogicBuilder or WebCTRL.

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 Corporation 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's not, on the **CFG** tree, select **Privilege Sets**, then select the **Maintain Alarm Templates** checkbox.

- 1 On the **GEO** 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 **OK**.

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 **CFG** 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 **OK**.

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 EIKON LogicBuilder.
Display Name	All	The name WebCTRL will display for this template.
Alarm Message	Source-based	The message text displayed on the View tab or in the alarm action when an Alarm requires acknowledgement.

Field	Template Type	Notes
Return Message	Source-based	The message text displayed on the View tab or in the alarm action when a return-to-normal requires acknowledgement.
Fault Message	Source-based	The message text displayed on the View tab or in the alarm action when a Fault requires acknowledgement.
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 acknowledgement.
Out of Range	Stand-alone	Analog inputs and outputs that have low and high limit alarm properties. Click the plus sign (+) 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.

Format field codes

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

`$fieldcode%format_type:style$`

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. See <i>Other numerical formatting System Options</i> (http://java.sun.com/j2se/1.4.2/docs/api/java/text/DecimalFormat.html).	To always truncate an alarm value to two digits to the right of the decimal, the field code is: \$alarm_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. See <i>Date time formatting System Options</i> (http://java.sun.com/j2se/1.4.2/docs/api/java/text/SimpleDateFormat.html).	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.
Acknowledge Time	\$acknowledge_time\$	The time when the operator acknowledged the alarm.
Alarm Category	\$event_category\$	The alarm category that the alarm is assigned to.
Alarm Template	\$event_template\$	The alarm template that the alarm is assigned to.
Alarm Type	\$event_type\$	The alarm type of the alarm source; for example, CHANGE OF VALUE, CHANGE OF STATE.
Alarm Value	\$alarm_value\$	The alarm value.
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\$

Field Code Name	Field Code	Description
Character	\$c\$	A single ASCII character. Often used for form feeds and other printer escape sequences. For example, \$C:65\$ displays A.
Command Value	\$command_value\$	The commanded value from the alarm source. Valid only for alarm type COMMAND FAILURE.
Dead Band	\$deadband\$	The deadband value from the alarm source. Valid only for alarm type OUT-OF-RANGE.
Deletion Operator	\$deletion_operator\$	The operator who deleted the alarm.
Deletion Time	\$deletion_time\$	The time the alarm was deleted.
Device	\$device\$	The display name of the device where the alarm came from.
Equipment	\$equipment\$	The display name of the equipment where the alarm came from.
Error Limit	\$error_limit\$	The error limit, from the alarm source. Valid only for alarm type FLOATING LIMIT.
Exceeded Limit	\$exceed_limit\$	The exceeded limit value from the alarm source. Valid only for alarm type OUT-OF-RANGE.
Exceeding Value	\$exceeding_value\$	The exceeding value from the alarm source. Valid only for alarm type OUT-OF-RANGE.
Fault	\$fault\$	The status of the fault condition from the alarm source.
Feedback Value	\$feedback_value\$	The feedback value from the alarm source. Valid only for alarm type COMMAND FAILURE.
Field Message	\$field_message\$	Additional text recorded in the alarm by the device.
From State	\$from_state\$	The previous state of the alarm source.
Generation Operator	\$generation_operator\$	The operator who forced the alarm to return to normal.
Generation Time	\$generation_time\$	The time in the module when the alarm was generated.
In Alarm	\$in_alarm\$	The in alarm status from the alarm source.
Incident Closed Time	\$incident_closed_time\$	The time the alarm's entire incident group closed.
Latched Data Value (Analog)	\$latched_data_analog:x\$	"x" ranges from 1 to 5. The display name of the alarm source that generated the alarm.
Latched Data Value (Digital)	\$latched_data_digital:x\$	"x" ranges from 1 to 5. The display name of the alarm source that generated the alarm.
Location Path	\$location_path\$	Displays all the path display names from root to source.

Field Code Name	Field Code	Description
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.
New Value	\$new_value\$	The new value from the alarm source. Valid only for alarm type CHANGE OF VALUE.
Object ID	\$object_id\$	Object ID of the alarm source.
Out of Service	\$out_of_service\$	The status of 'out of service' from the alarm source.
Overridden	\$overridden\$	The status of 'overridden' from the alarm source.
Program ID	\$program_id\$	The address of the control program that generated the alarm. BACnet program address format: device ID, program number (example: 240219,5) SuperVision program address format: site, gateway, module, fb (example: 1, 2, 13, 5)
Receive Time	\$receive_time\$	The time at the workstation when the alarm was received.
Recipient Device ID	\$device_id\$	The device ID of the device where the alarm came from.
Record Type	\$record_type\$	The type of alarm; for example, BACnet, SuperVision, System.
Reference Path	\$reference_path\$	Path to alarm source. Available in all alarm actions.
Reference Value	\$reference_value\$	The 'reference value' from the alarm source. Valid only for alarm type FLOATING LIMIT.
Referenced Bitstring	\$referenced_bitstring\$	The value of the 'referenced bitstring' value from the alarm source. Valid only for alarm type CHANGE OF BITSTRING.
Report Text	\$report_text\$	Used only with the Write to Database alarm action. You must include this field code in the Database Insert String .
RTN Time	\$RTN_time\$	The time when the alarm returned to normal.
Setpoint Value	\$setpoint_value\$	The 'setpoint value' from the alarm source. Valid only for alarm type FLOATING LIMIT.
Short Message	\$short_message\$	The formatted alarm short text.

Field Code Name	Field Code	Description
Site	\$site\$	The display name of the site the alarm came from.
Source	\$source\$	The display name of the alarm source that generated the alarm.
Source description	\$source:description\$	The description of the alarm source that generated the alarm.
Source Path	\$source:<path>\$	For advanced users, displays the database item indicated by <path> relative to the alarm source; for example, <path> = ~equipment.display-name. The easiest way to display the path is to use Global Modify.
System Directory	\$system_dir\$	The system folder name.
To State	\$to_state\$	The current state of the alarm source; for example, Normal, Fault, Off-normal, High limit, Low limit.

Chapter 9

Reports

Use WebCTRL reports to gather and view information to monitor and troubleshoot your system. Select report options to define the layout and content that serve your needs.



The list of available reports changes depending on your **GEO** or **NET** tree location.

NOTE The Send E-mail alarm action (see page 83) can run any WebCTRL report and attach it to the email. The Write to File alarm action (see page 91) can run any WebCTRL report and save it as a file. For both alarm actions, the report can be a PDF, HTML, Excel, or CSV file.

WebCTRL reports

This report...	allows you to...
Alarms	
Alarms	View, sort, and filter the information on the Alarms View tab (see page 70).
Alarm Sources	Create a summary of potential alarm sources as configured on the Alarms Enable/Disable tab (see page 93).
Alarm Prefixes & Details	Create a summary of the information configured on the Alarms Messages tab (see page 97).
Alarm Actions	Create a summary of the information configured on the Alarms Actions tab (see page 74).

This report...	allows you to...
Schedules	
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.
Equipment	
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 or Web services links.
Locked Values	Find all locked points and locked values.
Network IO	Verify the programming and status of all network points—especially useful for commissioning control modules used for third-party integration.
Trend Usage	Creates a summary of the information configured on the Trends Enable/Disable tab (see page 57).
Parameter Mismatch	Discover where your system has parameter mismatches that need to be resolved.
Network	
Equipment Status	Display the thermographic color, status, and prime variable of each control program.
Module Status	Discover network communication problems (shown as purple squares on the report) that need troubleshooting.
Commissioning	
Test & Balance	View the results of VAV box commissioning. Running this report automatically uploads calibration parameters to WebCTRL.
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.
Security	
Audit Log	Create chronological lists of operators, property changes they have made, and the reasons for those changes. You must have the Advanced Security package to run this report.

You can install the following add-on reports (see page 109) if you need them.

Historical Trends Report	View historical trend information for the selected GEO tree item, including the point that was trended, the number of trend samples collected, and the date and time of the first and last sample.
Equipment Sources Report	View heat and/or cool sources, the paths to the equipment, and the names of the control programs.

To run a report

- 1 Select an item on the **GEO** or **NET** tree.
NOTE A report shows data for the selected item and all of its children.
- 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 PDF, Excel spreadsheet, or CSV file* (page 109).
 - WebCTRL saves report options for the current operator. When that operator logs in again, WebCTRL uses the same options.
- 4 Click **Run**.
 - 5 Click **PDF** if you want to print the report.

To create a PDF, Excel spreadsheet, or CSV file

PREREQUISITE FOR CSV TEXT You must enable **Support CSV text format** on the **Options** tab before you run the report.

- 1 Run a report.
- 2 Click **PDF**, **Excel**, or **CSV Text**.
- 3 For Excel or CSV Text, click **Open** to view the file or **Save** to save it.

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 Acrobat, then sign the PDF. WebCTRL does not support digital signing because 21 CFR Part 11 requires that the signature be added manually, not through an automated process.

To install an add-on report

To install the Historical Trends Report or the Equipment Sources Report:

- 1 On the **CFG** tree, select **Reports Administration**.
- 2 Click **Add**.

- 3** Browse to WebCTRLX.X\extras\web\reports and select the report you want to add.
- 4** Click **OK**.
- 5** To view the report, select it in the **Reports** button drop-down menu.

Chapter 10

Operator access

Privileges control the parts of a 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 into WebCTRL as the Administrator. See *Operators and operator groups* (page 116).
- 2** Define privilege sets by job function. See *Privilege sets* (page 114).
- 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 116).

An operator can change many of his operator settings on the **My Settings** page (see page 118).

To access WebCTRL, an operator must enter his user name and password. This password requirement can be enhanced by using WebCTRL's advanced password policy (see page 155) (available with the optional Advanced Security package).

Restricting operator access

To restrict access to your system, you can:

- Restrict an operator's privileges
- Use location-dependent operator access (see page 151) (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.

Privileges

This Access privilege...	allows an operator to access (but not edit)...
Access Geographic Locations	pages from the GEO tree.
Access Network Items	pages from the NET tree.
Access Groups	pages from the GRP tree.
Access Config Items	pages from the CFG 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 <i>To create a custom privilege</i> (page 116).

This Parameter privilege...	allows an operator to edit properties such as...
Edit Setpoint Parameters	occupied and unoccupied heating and cooling setpoints.
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 Device Parameters	module driver properties.
Edit Critical Configuration	critical properties the installer protected with this privilege.
Edit Area Name	area display names.
Edit Equipment Name	equipment 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.

This Functional privilege...	allows an operator to...
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 Trends Display and Print Setup	edit Trends Display Setup and Trends Print Setup on the CFG tree.
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.
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 Audit Log Report.
Download Devices	mark equipment for download and initiate a download.
System Shutdown	issue the Shutdown manual command that shuts down WebCTRL Server.
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 WebCTRL. • 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.
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.

This Functional privilege...	allows an operator to...
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.

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 two 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.

Privilege sets

A privilege set is a group of one or more privileges (see page 112). The Administrator creates privilege sets and assigns them to operators and operator groups.

Admin privilege set

WebCTRL has a default privilege set called Admin that includes most of the privileges. Only an operator with the Admin privilege set can perform the following functions that are not controlled by privileges:

- Add, edit, and delete operators, operator groups, and privilege sets.
- Update WebCTRL Server with service packs and patches.
- Register the WebCTRL software. See *To register your <WebCTRL software* (page 137).
- Enable and set up advanced security features (see page 151) such as location-dependent operator access and a configurable password policy (if your system includes these optional features).

To add or edit a privilege set

- 1 On the **CFG** 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 Select the checkbox beside each privilege you want to include in the privilege set.
- 5 Click **OK**.

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 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 **CFG** tree, select **Privilege Sets**.
- 2 Select the privilege set to be deleted.
- 3 Click **Delete**.
- 4 Click **OK**.
- 5 Click **OK** again.

Operators and operator groups

The Administrator (see *Default operators* below) sets up each operator in WebCTRL by entering the necessary settings and assigning one or more privilege sets 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.

Default operators

CAUTION WebCTRL is installed with the following default operators:

Operator...	Has ...	To log in...
Administrator	The Admin privilege set (see page 115) that contains almost all privileges	Type <code>Administrator</code> in the Name field, then click Log in .
Anonymous	The Standard privilege set that contains only viewing privileges	Click Log in .

To ensure system security, log in as the Administrator, then do one of the following:

- Assign the Admin privilege set to another operator, then delete the Administrator operator
- Assign a password to the Administrator operator

CAUTION Passwords can be forgotten. To ensure access to the administrative functions of WebCTRL, assign the Admin privilege set to at least two operators.

If you want to prevent Anonymous access to your system, delete the Anonymous operator.

To add or edit an operator

- 1 On the **CFG** 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. The only required fields are **Name** and **Login Name**. See table below.
- 4 Click **OK**.

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 (see page 118).
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 the advanced password policy is enabled in System Settings on the Security tab (see page 126), select this option if you do not want the policy to apply to this operator.
Logoff options	If the automatic logoff feature is enabled in System Settings on the Security tab (see page 126), 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 (see page 118).
Starting Location and Starting Page	The location and page WebCTRL will display after the operator logs in.
System-wide Privilege Sets	To assign a privilege set to the operator, select the privilege set's checkbox. NOTES • Click Show current privileges only to see only the selected privilege sets. • A grayed out privilege set with a group name beside it indicates the operator is inheriting that privilege set from the group.
Groups	To add the operator to a group, select the group's checkbox. NOTE Click Show current privileges only to see only the selected groups.

To delete an operator

- 1 On the **CFG** tree, select **Operators**.
- 2 Select the operator.
- 3 Click **Delete**.
- 4 Click **OK**.

To add or edit an operator group

- 1 On the **CFG** 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 that you want to assign to the new group.
- 6 Click **OK**.

TIP WebCTRL has a permanent default group called **Everybody** that every operator is automatically a member of. You can assign privilege sets to this group.

To delete an operator group

- 1 On the **CFG** tree, select **Operator Groups**.
- 2 Select the operator group.
- 3 Click **Delete**.
- 4 Click **OK**.

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 **CFG** tree, select **My Settings**.
- 2 Make changes on the **Settings** or **Contact Info** tab. See table below.
- 3 Click **OK**.

Field	Notes
Change password	Enable this field, then type your current and new passwords.
Starting Location and Starting Page	The location and page WebCTRL will display after you log in.
Language	The language and formatting conventions you want to see in WebCTRL. NOTE If you will be using a language other than English, see <i>Setting up your system for non-English languages</i> (page 197) for additional requirements.
Automatically collapse trees	Expands only one tree branch at a time.
Play sound at browser when server receives	Select the Non-critical alarms or Critical alarms checkbox if you want the system to audibly notify you when that type of alarm is received. If you want to use a custom sound file (.au or .wav): 1. Put the file in the webroot_common\jv15\sounds folder. 2. In the Sound File field, replace warning_bell.au or critical_bell.au with the name of your sound file. NOTE You can put your sound file anywhere under the WebCTRL#. # folder, but be sure to change the path in the Sound File field.

Chapter 11

Cost-saving strategies

HVAC equipment runs in order to maintain adequate temperature for zones. 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 (see page 51)	Define when a building or zone is occupied and whether or not equipment should run, depending on the occupied setpoints.
	Optimal Start (see page 46)	Ensures that a zone's ideal comfort range is reached just as the zone becomes occupied.
	Demand Control (see page 48)	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) (see page 50)	Calculates a piece of equipment's setpoint based on the number of heating or cooling requests it receives from other equipment.

Advanced topics and features

Chapter 12

System Settings

The System Settings page contains information that you must enter before WebCTRL can run properly.

To access System Settings:

- 1 On the **CFG** tree, select **System Settings**.
- 2 Click each tab, then enter the necessary information. Expand an item below for tab details.

General tab

The **General** tab presents the following system information:

- **System Directory Name**
- **System Date and Time**
- **Path to the Web Root Directory**
- **Database Type**

You can edit or use the following fields and buttons.

Field	Notes
Time Sync	Click to synchronize the time on all control modules in the system to the time on the server.
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.

Field	Notes
Node Name Display Depth	The number of levels displayed in paths in WebCTRL. 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 WebCTRL Server.
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).
Use a single alarm template for CMnet alarms	If your system is an upgraded legacy system, do one of the following: • Select this checkbox to have alarms for CMnet equipment use only the alert_auto alarm template. • Disable this checkbox to allow multiple alarm templates.
Select a week of logs to review	For troubleshooting, you can download a zip file that contains logs of system activity.

Security tab

See *Location-dependent operator access* (page 151) for information on **Change Policy** and *Configurable password policy* (page 155) for **Enable Advanced Password Policy**.

Field	Notes
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 or MSDE, the database is automatically created. An Access database is named audit.mdb; a MSDE database is named audit.mdf. 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.
Log errors for invalid URLs	Enable this field to write to the core.txt log any time an external source sends a request to the WebCTRL Server. NOTE Regular maintenance scans by external software can cause the log files to grow large.
Allow remote file management	Lets you access the system using WebDAV.
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 WebCTRL Server will remove lockouts.

Field	Notes
Use advanced password policy	A feature of the Advanced Security package that provides additional security.
Do not synchronize operator and privileges	If using hierarchical servers, WebCTRL automatically synchronizes the operator/privilege settings on the child servers with those on the parent server. You have the following options: • Enable this checkbox on all servers to stop the synchronization process. • Enable this checkbox 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.

Communications tab

The fields on this tab let you define module communication with WebCTRL Server and BACnet network communication.

Field	Notes
WebCTRL Server BACnet Device 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 control modules to WebCTRL server on mismatch	Automatic uploads are listed in the audit log. If you do not select 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	WebCTRL Server 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

Use Static BACnet Bindings	This field is normally selected. Using static bindings means that WebCTRL uses information in its database to bind to BACnet devices rather than using BACnet's Who-Is/I-Am/Who-Is-Router-To/I-Am-Router-To broadcasts to resolve BACnet network and device bindings (dynamic binding). If this field is not selected, the system uses BACnet (dynamic) binding for communication between devices. NOTE You must clear this checkbox when discovering BACnet points.
Log BACnet Binding Conflicts	When checked, WebCTRL 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	Alarm incident groups are all alarm actions, such as Off Normal, Fault, and Return to Normal, that are triggered by a single alarm. 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, WebCTRL waits two days after a schedule expires to delete it.
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.
Remove expired historical trends daily at ___	Deletes trend data that has been in the database longer than then time you specified in the previous field.

Field	Notes
Enable time synchronization of control modules daily at_____	Automatically synchronizes the time on all equipment to the time on the server, adjusting for different time zones and Daylight Saving Time. CAUTIONS - 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 module 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 modules in the Pacific Time zone. Your server is adjusted for DST at 2:00 a.m. Eastern Standard Time, but the modules 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. - Make sure that your server's time and time zone setting are correct. - Make sure that each site's time zone setting is correct in SiteBuilder. NOTES - You can disable this function for an individual site on the site's Properties page. See <i>To set up site properties</i> (page 131). - You can also perform time synchronizations using the timesync manual command (see page 177).

Daylight Saving tab

On this tab, you can adjust the settings for Daylight Saving Time.

Click **Update** to automatically set the table's **Begin** and **End** dates for the next ten years based on the system's time zone. To update the dates in the control modules, click **OK** to mark all ExecB drivers for Parameter download.

Other Applications tab

Field	Notes
HTTP Tunnel	Select the Enable checkbox to enable connections to control modules using HTTP Tunneling.
Alarm Popup	Select the checkbox to use the Alarm Notification Client application. See <i>Alarm Popup</i> (page 75).
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.
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.

To set up site properties

- 1 On the **NET** tree, select the site.
- 2 Click **Properties**.
- 3 Configure site properties.

Field	Notes
Enable Timesync	Daily synchronizes the time in the site's modules 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 control modules daily at on the Scheduled Tasks tab in System Settings. 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.
Group Cache Device	The designated router where colors are cached when peer caching is enabled in SiteBuilder.

Chapter 13

Editing the GEO or NET tree

In WebCTRL, you can edit the **GEO** or **NET** tree that was originally set up in SiteBuilder. The system database is updated immediately.

Right-click an item in the tree, then select **Set up Tree**. Click **GEO** or **NET** 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. (GEO tree only)
		Import a clipping that was saved in SiteBuilder. See <i>To import a clipping</i> (page 134) below.
	Ctrl+X	Cut a selected item so it can be pasted in another location in the tree. (GEO tree only)
	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. (GEO tree only)
	Up arrow, or Drag and drop in new location	Move the selected item up the tree to a new location. (GEO tree only)
	Down arrow, or Drag and drop in new location	Move the selected item down the tree to a new location. (GEO tree only)
		Rename the selected item.
	Delete	Delete the selected item. The item and all of its children will be deleted.

Click this button...	Or use this shortcut...	To...
	Double-click the tree item	Edit the item's features such as: - names - view—See <i>To attach a graphic in WebCTRL</i> (page 36) - control program—See <i>Working with control programs in WebCTRL</i> in WebCTRL Help.

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

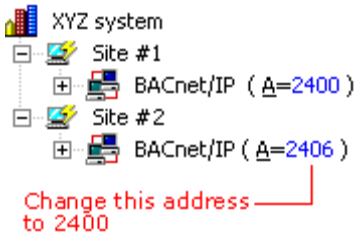
You can export a clipping (a portion of a system) in SiteBuilder and then import it in WebCTRL. The following items are imported:

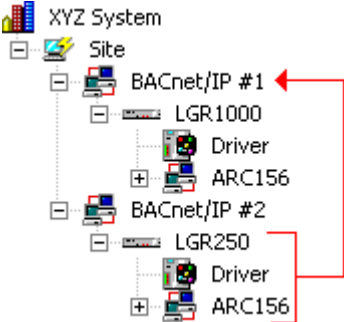
- One or more selected **Geographic** and **Network** tree items including attached control programs, graphics, and drivers
- Reports
- Alarm templates and categories
- Location-dependent security information
- Schedules and schedule group membership (including the entire schedule group and schedules, 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 in the **GEO** 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 WebCTRL lists 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 SiteBuilder...	Do the following in WebCTRL...
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 memory to all ALC IP routers in the system.

If you imported...	Do the following in SiteBuilder...	Do the following in WebCTRL...
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 control modules that you moved.
		
Control modules that use the SiteBuilder option Automatically Configure My BBMDs	N/A	Download BBMDs to the routers.
Control modules that use manually configured BBMD tables	N/A	Update the routers' BBMD tables. <i>See To set up BBMD's using WebCTRL or To set up BBMD's using the BBMD Configuration Tool in WebCTRL Help.</i>

Chapter 14

To register your WebCTRL software

To register your software, you must obtain a registered license from ALC and then apply it in WebCTRL. You can apply it when you install WebCTRL or at a later time.

- 1 Go to <http://accounts.automatedlogic.com> (<http://accounts.automatedlogic.com>).
- 2 Select **Support > Software Licenses > WebCTRL 2.5 and later (BAS License Manager)**.
- 3 Select filter criteria to narrow the list of licenses, then click **Filter** in the upper right-hand corner.
- 4 Select the appropriate row.
- 5 Fill in the blank fields in the **License Registration Area**.
- 6 Click **Register License**.
- 7 Select the checkbox for **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 in WebCTRL:
 - o During the WebCTRL installation—The installation requests the location of your license file. Browse to location where you saved it in step 4 above.
 - o After the installation—
 - a. In WebCTRL, select **CFG > License Administration**.
 - b. Browse to the license file.
 - c. Click **Apply**.
 - d. Restart WebCTRL Server using the rebootserver manual command (see page 177).

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 WebCTRL system:

- Enterprise integration: Web services (XML/SOAP) data retrieval
- Advanced security: Location-dependent operator access, configurable password policies, and required operator comments/verification for system changes
- Advanced reporting: Custom reports
- 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 WebCTRL:

- 1 Go to <http://accounts.automatedlogic.com> (<http://accounts.automatedlogic.com>).
- 2 Select **Support > Software Licenses > WebCTRL 2.5 and later (BAS License Manager)**.
- 3 Select filter criteria to narrow the list of licenses, then click **Filter** in the upper right-hand corner.
- 4 Select the appropriate row.
- 5 Select the checkbox for **I agree to the terms of use**.
- 6 Click **Download License**, then save the license file to a disk or to your hard drive.
- 7 To replace your license in WebCTRL, select **CFG > License Administration**.
- 8 Browse to the license file.
- 9 Click **Apply**.
- 10 Restart WebCTRL Server using the `rebootserver` manual command (see page 177).

TIP Back up your system (see page 139) before replacing your license in WebCTRL.

Chapter 15

System maintenance

You should perform the following system maintenance on a regular basis.

To back up your system

The type of database your system uses determines the method you use to back up the system.

If using MS Access or MSDE

- 1 Shut down WebCTRL Server and SiteBuilder.
 - 2 In the **WebCTRL#.#\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.

If using MySQL, MS SQL Server, Oracle, or PostgreSQL

NOTE If any of WebCTRL's 4 databases exceed 2 GB, use the database management system's backup method instead of the following procedure.

- 1 Shut down WebCTRL Server and SiteBuilder.
- 2 In the **WebCTRL#.#\webroot** folder, copy your system folder.
- 3 Paste the copy into the **\webroot** folder.
- 4 Rename of the copy to remove spaces and capital letters.
- 5 In SiteBuilder, open the copy, then migrate it to MS Access or MSDE. This step creates the Access or MSDE databases in the system folder.
- 6 Move the copy's folder to a new location.

TIP Zip the copy before transporting it to a CD or over a network.

To compact the database and defragment the server's hard drive

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 is called fragmentation, and it can slow down system performance and increase the size of the database. 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.

TIP To minimize the effects of fragmentation, you should maintain at least 20% free disk space on the server.

Compacting the database

MSDE, MySQL, MS SQL Server, Oracle, and PostgreSQL databases are compacted dynamically—compacting occurs in the background when a database is open.

To compact an MS Access database:

- 1 Shut down WebCTRL Server and SiteBuilder.
- 2 Click **Start > Control Panel**.
- 3 Double click **Administrative Tools**.
- 4 Double click **Data Sources (ODBC)**.
- 5 On the **User DSN** tab, click **MS Access Database**, then click **Configure**.
- 6 Click **Compact**.
- 7 Under **Directories**, select your system's folder under **\webroot**.
- 8 Under **Database Name**, select **core.mdb**, then click **OK**.
- 9 Under **Format**, select **Version 4.x**, then click **OK**.
- 10 When asked if you want to replace the database, click **Yes**.
- 11 When compacting finishes, click **OK**.

NOTE Compacting a database may take several minutes to several hours, depending on its size.

- 12 Repeat steps 5 - 10 to compact **audit.mdb**, **events.mdb**, and **trends.mdb**.

Defragmenting the server's hard drive

For all database types, use a defragmentation utility such as Windows Disk Defragmenter or Norton SystemWorks.

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 WebCTRL to automatically delete these. See *System Settings - Scheduled Tasks tab* (page 129).

Chapter 16

Custom reports

If your system has the optional Advanced Reporting package, you can also create an Equipment Values or Trend Samples report.

Equipment Summary

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 **GEO** or **NET** tree, select the location where you want to view the report.
- 2 Click the **Reports** button drop-down arrow, then select **New 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 148).
- 5 Type a name for the report.
- 6 Click **Create**.
- 7 On the **Design** tab, define the title, layout, and the **Maximum number of rows**.
- 8 To create a CSV (Comma Separated Values) file after you run the report, select **Support CSV text format**. See *To create a PDF, Excel spreadsheet, or CSV file* (page 109).
- 9 Select or clear the **Optional Sections** checkboxes as needed.
- 10 Optional: Select **Show only equipment for specific control programs at or below this location**, then type the names of the control programs.

- 11 Select **Available Points** that you want to include in the report. Use Ctrl+click, Shift+click, or both to select multiple items.
- 12 Click **Add**.
- 13 Click **OK**.
- 14 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**.

Equipment Values

Optional WebCTRL Package

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

To create an Equipment Values report:

- 1 On the **GEO** or **NET** tree, select the location where you want to view the report.
- 2 Click the **Reports** button drop-down arrow, then select **New 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 148).
- 5 Type a name for the report.
- 6 Click **Create**.
- 7 On the **Design** tab, click the plus sign next to **Page** to verify or 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.
- 8 Click the plus sign next to **Rows**.
- 9 Do one of the following:
 - Select **Show only equipment for 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**.
Optional: Select the **Highlight alternate rows** checkbox to make the report easier to analyze.
- 10 Click **Next** or the plus sign 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**, define the data you want in the column and how you want it to look. See table below.

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

16 Click **OK**.

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 equipment	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 equipment	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.

Type of Column Data		
Trend Calculation	Display	Select the type of calculation to show in the column, Average or Total .
	Data is named differently in some equipment	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.
Equipment	Display	Select Color , Display Name , Display Path , Notes , Prime Variable , or Reference Name to show in the column.
Expression	Data is named differently in some equipment	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 GQL expression relative to the current control program. The GQL expression must return a string value. To display the Notes on an equipment's Properties page, type <code>.notations</code> in this field.

Trend Samples

Optional WebCTRL Package

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

To create an Trend Samples report:

- 1 On the **GEO** or **NET** tree, select the location where you want to view the report.
- 2 Select the **Reports** button drop-down arrow, then select **New 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 148) below.

- 5 Type a name for the report.
- 6 Click **Create**.
- 7 On the **Design** tab, click the plus sign next to **Page** to verify or 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.
- 8 Click the plus sign next to **Rows**.
- 9 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.
- 10 Define the trend data.

NOTES

- **Calculate values for missing samples** calculates a value based on the two closest values to the time interval.
 - **Find the closest sample** displays the value closest to the time interval selected.
- 11 Optional: Select the **Highlight alternate rows** checkbox to make the report easier to analyze.
 - 12 Click **Next** or the plus sign next to **Columns**.
 - 13 Verify or change the report **Title**, **Page units** of measure for defining column widths, and **Outer border** characteristics.
 - 14 Select a column in the report preview.
NOTE The selected column is light purple.
 - 15 In the top 2 boxes, define the **Column Header** and the **Column Data**.
 - 16 In the bottom 2 boxes, define the appearance of the header and data cells.
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.
 - 17 Optional: Use the **Add**, **Delete**, and arrow buttons below the report preview to manipulate the columns.
 - 18 Click **OK**.
 - 19 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 view a custom report

- 1 Select the item in the **GEO** or **NET** tree where the report was created.
- 2 Click the **Reports** button drop-down arrow, then select the report you want to view.
- 3 Click **Run**.

To create a PDF, Excel spreadsheet, or CSV file

PREREQUISITE FOR CSV TEXT You must enable **Support CSV text format** on the **Options** tab before you run the report.

- 1 Run a report.
- 2 Click **PDF**, **Excel**, or **CSV Text**.
- 3 For Excel or CSV Text, click **Open** to view the file or **Save** to save it.

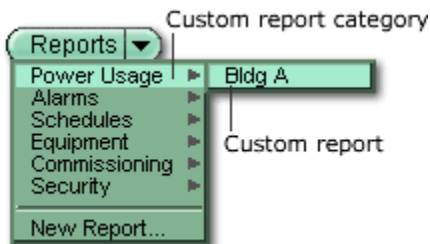
NOTE If you need a digitally signed PDF to comply with 21 CFR Part 11, open the PDF in a program that supports digital signing such as Acrobat, then sign the PDF. WebCTRL does not support digital signing because 21 CFR Part 11 requires that the signature be added manually, not through an automated process.

To edit or delete a custom report

- 1 Select the item in the **GEO** or **NET** 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:
 - Edit the report, then click **OK**.
 - Click the menu button , then select **Delete**.

To organize custom reports

You can organize your custom reports by creating report categories that appear in the **Reports** button drop-down list.



To add or edit a report category

- 1 On the **CFG** tree, click the plus sign (+) to the left of the **Categories** folder, then click **Report**.
- 2 Click **Add** or select a category to edit it.
- 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 **OK**.

NOTE To delete a category, select the category, click **Delete**, then click **OK**.

To access custom reports from WebCTRL v2.5 or earlier

If you upgrade WebCTRL from a version that had custom reports created with e.Spreadsheet, Report Designer, or Formula One, you can continue to view and edit those reports in WebCTRL.

When you upgraded WebCTRL, the install program asked, "Does your current system include Report Designer (FormulaOne) reports?"

- If you answered **Yes**, the reports appear in the **Reports** button drop-down list.
- If you answer **No** but later realize you should have answered **Yes**, copy the following files from **WebCTRL2.5\webroot\WEB-INF\lib** or **WebCTRL3.0\lib** to **WebCTRL#.#\lib** in your new version of WebCTRL.

```
f1j9_de.jar
f1j9_es.jar
f1j9_fr.jar
f1j9_it.jar
f1j9_ko.jar
f1j9_zhs.jar
f1j9_zht.jar
f1j9swing.jar
f1jtextures.jar
```

Then follow the steps below to make the reports appear in the **Reports** button drop-down list.

To add a new e.Spreadsheet report

- 1 Go to **CFG > Reports Administration** and add the report.
- 2 In the **GEO** tree where you want to be able to access the report, click the **Reports** button down arrow, then select **New Report**.

- 3 Select **Other**, then select a report type from that drop-down list. Name the report, then click **Create**.

NOTE Report Designer is licensed to Automated Logic Corporation by Actuate Corporation for WebCTRL v2.5 and earlier.

Chapter 17

Advanced security

Location-dependent operator access

Optional WebCTRL Package

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 111) 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 operator 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 **CFG** tree, select **System Settings**.
- 2 Select the **Security** tab.
- 3 Click **Change Policy**.
- 4 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 the **My Settings** page on the **CFG** tree.

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 112).

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 Tuning and Logic Parameters
Acknowledge Non-Critical Alarms	Edit Manual Override Parameters
Acknowledge Critical Alarms	Edit Point Setup Parameters
Force Normal Non-Critical Alarms	Edit Restricted Parameters
Force Normal Critical Alarms	Edit Category Assignments
Delete Non-Critical Alarms	Edit History Value Reset
Delete Critical Alarms	Edit Trend Parameters
Execute Audit Log Report	Edit Calibration Parameters
Download Devices	Edit Hardware Device Parameters
System Shutdown	Edit Critical Configuration
Engineer System	Edit Area Name
Access Commissioning Tools	Edit Equipment Name
Maintain Graphs and Reports	Edit Alarm Configuration
Maintain Connections	InterOp Privilege 1 - 10
Remote File Management	Manage Alarm Messages and Actions
Remote Data Access-SOAP	Maintain Schedules
Do not audit changes made using SOAP (Web services)	
Manual Commands/Console Operations	
Manual Commands/File IO	
Manual Commands/Adv Network	
Manual Commands/Unrestricted	

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, WebCTRL splits any existing privilege set containing local and system-wide privileges into

two 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 114).

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 116).

Assign a **local** privilege set to an operator at locations on the **GEO** or **NET** tree where he needs the privileges.

- 1 Select a location on the **GEO** or **NET** tree.
- 2 Click **Privileges**.
- 3 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 **OK**.

To delete a local privilege set assignment

- 1 On the **GEO** or **NET** 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 **OK**.

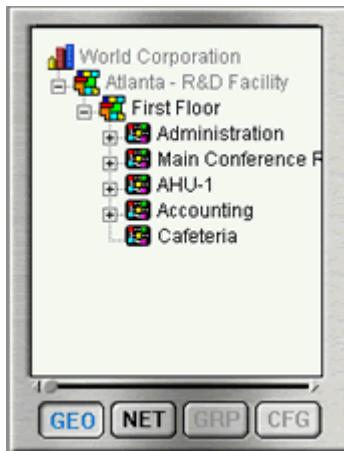
Restricting access in the system

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 WebCTRL.

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



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 clear the checkbox **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 **GEO** or **NET** 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 and viewing reasons for changing equipment properties (21 CFR Part 11)

Optional WebCTRL Package

The Advanced Security package provides support for 21 CFR Part 11. With this feature enabled, WebCTRL can require an operator to record a reason for changing an equipment property before WebCTRL accepts the change. WebCTRL's Audit Log report then displays the operator's name and the recorded reason for making the change.

NOTE You cannot use WAP-enabled devices to change equipment that requires operators to log changes.

To set equipment to require reasons for changes

- 1 In WebCTRL's **GEO** or **NET** tree, right-click the equipment, then select **Configure**.
- 2 Select the **Require operator to record any changes to equipment** checkbox.
- 3 Click **OK** or **Apply**.

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 In WebCTRL, select a piece of equipment that requires reasons for change.
- 2 Click the **Reports** button drop-down arrow, select **Security > Audit Log**.
- 3 On the **Options** tab under **Display the following columns**, select the **Reason** checkbox.
- 4 Click **Run**.

Configurable password policy

Optional WebCTRL Package

With the Advanced Security package, you can set up a WebCTRL password policy to meet your security needs.

- 1 On the **CFG** tree, select **System Settings**.
- 2 Select the **Security** tab.
- 3 Enter information in the fields described below.

NOTE See *System Settings* (page 125) for information on all the other fields.

Field	Notes
Use advanced password policy	Enable this field to put restrictions on 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 require that passwords contain any or all of the following: Numbers Special characters—any keyboard character that is not a number or letter. Letters—uppercase, lowercase, or both.
Passwords may not be reused until __ different passwords have been used.	Enter a number between 1 and 20. Enter 0 to reuse passwords without a delay.
Expire passwords 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.

Chapter 18

Web services

Optional WebCTRL Package

Using Web services to retrieve or change data

Web services are:

- A class of data exchange using XML (extensible markup language) and SOAP (simple object access protocol).
- Self-contained, modular applications that can be run over the Internet and can be integrated into other applications.
- A standardized method for combining remote applications distributed over the Internet so that they may work together for a common purpose.
- Application-to-application interfaces.

Using Web services, you can retrieve information or set values for items accessible through WebCTRL's GEO or NET tree. You can retrieve trend data, reports, present values, setpoints, and any other BACnet object property information from a remote WebCTRL server and import the information into a SOAP client such as Microsoft Excel. You can also set present values, setpoints, and any other object property information on a remote WebCTRL server.

The Web services examples we provide use Microsoft Excel as the SOAP client, but you can use other software packages.

NOTE To use Web services with Microsoft Excel or Microsoft Word:

- You should be comfortable writing Visual Basic scripts and setting up macros.
- You must install the Soap Toolkit found at <http://download.microsoft.com/download/xml/Install/3.0/W982KMeXP/EN-US/SoapToolkit30.EXE>.

WebCTRL privilege requirements

You should create a WebCTRL operator and a privilege set whose specific purpose is Web services. The privilege set must have the following privileges:

- Remote Data Access
- Access Geographic Locations or Network Locations, as needed
- Access Network items, as needed
- Any privileges needed for the specific task

Every change made through Web services is recorded in the Audit Log. If you do not want these changes recorded in the Audit Log, add the following privilege to the privilege set:

- Do not audit changes made using SOAP (Web Services)

WebCTRL data access using SOAP

NOTES

- The operator attempting to use SOAP must have the **Remote Data Access** privilege.
- Can be used with **https**.

You can use the following services with WebCTRL data:

- **Eval** - Returns the value for the given GQL Expression.
- **Trend** - Returns trend data for a specified point
- **Report** - Returns a WebCTRL report in CSV or HTML format
- **System** - Returns a path to a folder in the system folder where a web application can store data so that it is backed up with other system files

The information below gives the WSDL, methods, and parameters for each service.

1. Eval

See:

Example using Web services to set a value (on page 163)

Example using Web services to retrieve values (page 166)

WSDL:

http://<WebCTRL_server>/_common/webservices/Eval?wsdl

Methods:

- a. String getValue(String expression)
Returns the **raw** value for the given expression.
- b. String [] getValues(String [] expressions)
Returns an array of the **raw** values for the given expressions.
- c. String getDisplayValue(String expression)
Returns the **display** value for the given expression.
- d. String [] getDisplayValues(String [] expressions)
Returns an array of the **display** values for the given expressions.
- e. setValue(String expression, String rawVal, String reason)
Sets the given **raw** value for the expression.
- f. setValues(String [] expressions, String [] rawVals, String reason)
Sets an array of the given **raw** values for the expressions.
- g. setDisplayValue(String expression, String displayVal, String reason)
Sets the given **display** value for the expression.
- h. setDisplayValues(String [] expressions, String [] displayVals, String reason)
Sets an array of the given **display** values for the expressions.

Parameters:

- expression:
For Methods a. through d., its the GQL expression to be evaluated. For points, expression only needs to refer to the microblock; present_value is assumed.
For Methods e. through h., its the GQL expression for which new value is to be set
- rawVal: The raw value (for instance, 1, indicating a On status) *
- displayVal: The display value (for instance, "On", indicating On status) *
- reason: Reason for the change.**

* **raw value versus display value:** For a binary input that is on, the raw value would be "1". For an operator whose default language is English, the display value would be "On". The display value is in the operator's default language.

** **reason** can be used if you need to comply with 21 CFR Part 11 (see page 155).

NOTE Methods b, d, f, and h above process multiple expressions. If an expression causes an error, only that expression returns an error. The remaining expressions are processed as intended.

- For an expression that gets a value, an error is indicated by [ERROR]:*error message*. Correctly processed expressions return a value.
- For an expression that sets a value, an error is indicated by [ERROR]. Correctly processed expression return [OK].

2. Trend

See *Example using Web services to retrieve trend data* (on page 169).

WSDL:

http://<WebCTRL_server>/_common/webservices/Trend?wsdl

Method:

getTrendData(String trendLogPath, String sTime, String eTime, boolean limitFromStart, int maxRecords)

Retrieves trend records for a given point or a trend log. A series of (time, value) pairs representing trend samples is returned.

The first element of the array is the time for the first sample, second element of the array is the trend data value for the first sample. The third element is time for second sample fourth element is trend data value for second sample etc. The returned array is in the following format:

10/02/2002 10:22:00 AM	--->	Time for first sample
76.1	--->	Trend data value for first sample
10/02/2002 10:22:30 AM	--->	Time for second sample
76.1	--->	Trend data value for second sample
10/02/2002 10:23:00 AM	--->	Time for third sample
76.2	--->	Trend data value for third sample

Parameters:

- user: WebCTRL operator login Id. This user should have the Remote Data Access privilege.
- password: Password for the above WebCTRL user.
- trendLogPath: The full (GQL) path to the point, or trend log node whose trend data is desired. For example, #mxm/ai_interval, or #mxm/ai_interval/trend_log
- sTime: Start Time. Returns trend data values starting with this time.
- eTime: End Time. Returns trend data values until this time.
- limitFromStart: If maxRecords is >0, use True to retrieve maxRecords from the start (sTime if specified or the first record in the database); use False to retrieve maxRecords from the end (eTime if specified or the last record in the database)
- maxRecords: Maximum number of records desired. Use a number >0 to limit records; use 0 to retrieve unlimited records. If using 0, you must specify sTime and eTime; limitFromStart will be ignored.

NOTES

- sTime and eTime format: MM/dd/yyyy hh:mm:ss aa. Example: 10/02/2002 10:22:00 AM
- If you do not want to specify a start time or end time, use NULL or an empty string for the sTime or eTime. In this case, maxRecords must be >0.

EXAMPLES

- sTime=04/07/2007 12:00:00 AM
eTime=NULL
limitFromStart=True
maxRecords=10
The first 10 records starting on 4/7/07 at 12:00:00 AM will be returned.
- sTime=NULL
eTime=NULL
limitFromStart=False
maxRecords=10
The most recent 10 records in the database will be returned.
- sTime=04/07/2007 12:00:00 AM
eTime=04/10/2007 11:59:00 PM
limitFromStart=False
maxRecords=0
All records in the database between 04/07/2007 12:00:00 AM and 04/10/2007 11:59:00 PM will be returned.

3. Report

See *Example using Web services to retrieve a report* (page 172).

WSDL:

http://<WebCTRL_server>/_common/webservices/Report?wsdl

Methods:

- a. String runReport(String location, String reportName, String extension)
Runs the named report at the given location and returns the result as a large string with embedded carriage returns.
- b. String [] runReportCsvLines(String location, String reportName)
Runs the named report at the given location and returns an array of individual CSV lines. The caller must still parse each line.

Parameters:

- location: The location to run the report at in the database
- reportName: The name of a built-in report or the reference name of a custom report

Built-in report names:

~schedule-instance
~effective-schedule
~point-list-report
~locked-value
~network-io
~test-and-balance
~equipment-checkout
~audit-log
~alarms
~alarm-source
~network-status
~module-version
~security-assignment
~alarm-messages
~alarm-actions
~trend-usage
~parameter-mismatch

- extension: Type of report to run, CSV or html

4. System

WSDL:

http://<WebCTRL_server>/_common/webservices/System?wsdl

Method:

String getWebAppStorageDirectory(String webAppName)

Returns a path to a folder in the system folder where a web application can store data. The web application is responsible for creating the folder.

Parameter:

webAppName: A name unique to the web application.

Example using Web services to set a value

Follow the process below to change a BACnet Binary Point's:

- Raw value in the WebCTRL database and control module
- Display value shown in WebCTRL

Step 1: Create a spreadsheet

- 1** Enter the following information the spreadsheet uses to log in to the WebCTRL system.
 - WebCTRL Server IP address or the server network name (Cell A1 in this example)
 - Operator name for logging in to WebCTRL (Cell A2 in this example)
 - Operator's WebCTRL password (Cell A3 in this example)
- 2** Enter the GQL path to the property whose raw value you want to set (Cell A5), then enter the raw value (Cell B5).

NOTE You can use an absolute path, such as /trees/geographic/points/io_points/m001, or a global reference name.
- 3** Enter the GQL path to the property whose display value you want to set (Cell A6), then enter the display value (B6).

- 4 If you need to comply with 21 CFR Part 11 (see page 155), enter the reason the values are being changed (Cell C5 and C6).

	A	B	C
1	192.168.162.170		
2	administrator		
3	abc		
4			
5	#o_points/m021/locked	TRUE	Fan needs maintenance
6	#o_points/m021/locked_value	On	Fan needs maintenance
7			

Step 2: Create a macro

The macro will write the values from the spreadsheet to the WebCTRL system.

The following steps correspond to the numbered parts of the code shown below.

- 1 Name the subroutine (testSoapWrite) that will set the value in WebCTRL.
- 2 Define which spreadsheet cells contain the:
host (WebCTRL server)
user (WebCTRL operator)
password (WebCTRL operator's password)
- 3 Identify the Web services program that allows the spreadsheet to access the WebCTRL server over the network or Internet.
- 4 Enter the code to authenticate the user.
- 5 Enter the error handling code.
- 6 Enter the code that uses the setValue method to set the raw value.
- 7 Enter the code that uses the setDisplayValue method to set the display value.
- 8 This displays an error checking statement if an error is found in the data.

```

1 Sub testSoapWrite()
2   host = Range("A1").Value
   user = Range("A2").Value
   passwd = Range("A3").Value
   Dim changeReason As String

3   Dim client As MSSOAPLib30.SoapClient30
   Set client = CreateObject("MSSOAP.SOAPClient30")
   URL = "http://" & host &
         "/_common/webservices/Eval?wsdl"

4   client.mssoapinit (URL)

   client.ConnectorProperty("WinHTTPAuthScheme") = 1
   client.ConnectorProperty("AuthUser") = user
   client.ConnectorProperty("AuthPassword") = passwd

5   On Error GoTo err

   i = 5
6   expression = Range("A" & i).Value
   newValue = Range("B" & i).Value
   changeReason = Range("C" & i).Value
   client.setValue expression, newValue, changeReason

   i = 6
7   expression = Range("A" & i).Value
   newValue = Range("B" & i).Value
   changeReason = Range("C" & i).Value
   client.setDisplayValue expression, newValue, changeReason

8   GoTo done
err:
   Range("D" & i).Value = err.Description

done:

End Sub

```

NOTE If you have problems connecting to WebCTRL using Visual Basic, add the following line:

```
client.ClientProperty("ServerHTTPRequest") = TRUE
```

above the line:

```
client.mssoapinit (URL)
```

Step 3: Run the macro

NOTE WebCTRL Server must be running.

- 1** In Excel, click **Tools > Macro > Macros**.
- 2** Select the **TestSoapWrite** sub-routine.
- 3** Click **Run**. The macro will write the values into the WebCTRL database and field modules.

NOTE Follow the steps below if you get an error message when you run the macro.

- a) In Excel, select **Tools > Macro > Visual Basic Editor**.
- b) In the Visual Basic editor, select **Tools > References**.
- c) Select the **Microsoft Soap Type Library v3.0** and click **OK**.

Example using Web services to retrieve values

Follow the process below to read the value of BACnet Binary Inputs.

Step 1: Create a spreadsheet

- 1** Enter the following information the spreadsheet uses to log in to the WebCTRL system.
 - WebCTRL Server IP address or the server network name (Cell A1 in this example)
 - Operator name for logging in to WebCTRL (Cell A2 in this example)
 - Operator's WebCTRL password (Cell A3 in this example)
 - 2** Enter the GQL paths to the properties whose values you want to get (Cells A5, A6, and A7).
- NOTE** You can use an absolute path, such as /trees/geographic/points/io_points/m001, or a global reference name.

	A	B
1	192.168.162.170	
2	administrator	
3	abc	
4		
5	#vav1/zone_temp/present_value	
6	#vav2/zone_temp/present_value	
7	#vav3/zone_temp/present_value	
8		

The macro that will retrieve the values will write them to cells B5, B6, and B7.

Step 2: Create a macro

The macro will read the values from the WebCTRL system and write them to the spreadsheet.

The following steps correspond to the numbered parts of the code shown below.

- 1** Name the subroutine (testSoapRead) that will retrieve the values from WebCTRL.
- 2** Define which spreadsheet cells contain the:
host (WebCTRL server)
user (WebCTRL operator)
password (WebCTRL operator's password)
- 3** Identify the Web services program that allows the spreadsheet to access the WebCTRL server over the network or Internet.
- 4** Enter the code to authenticate the user.
- 5** Enter the error handling code.
- 6** Enter the code to allocate and specify the expressions to get.
- 7** Enter the code to get the values and insert them into the spreadsheet.
- 8** This displays an error checking statement if an error is found in the data.

```

1 Sub testSoapRead()
2   host = Range("A1").Value
   user = Range("A2").Value
   passwd = Range("A3").Value
   Dim changeReason As String

3   Dim client As MSSOAPLib30.SoapClient30
   Set client = CreateObject("MSSOAP.SOAPClient30")
   URL = "http://" & host &
         "/_common/webservices/Eval?wsdl"

   client.mssoapinit (URL)

4   client.ConnectorProperty("WinHTTPAuthScheme") = 1
   client.ConnectorProperty("AuthUser") = user
   client.ConnectorProperty("AuthPassword") = passwd

5   On Error GoTo err

   REM VB arrays start at index 0 and are declared by the maximum index
   REM some the next line declares an array of two strings at indices 0 and 1
6   Dim expressions (2) As String
   Dim values (2) As String
   Dim result() As String

   expressions(0) = Range("A5").Value
   expressions(1) = Range("A6").Value
   expressions(2) = Range("A7").Value

7   result = client.getValues(expressions)
   Range("B5") = result(0)
   Range("B6") = result(1)
   Range("B7") = result(2)

   GoTo done
err:
8   Range("D" & i).Value = err.Description

   done:

End Sub

```

NOTE If you have problems connecting to WebCTRL using Visual Basic, add the following line:

```
client.ClientProperty("ServerHTTPRequest") = TRUE
```

above the line:

```
client.mssoapinit (URL)
```

Step 3: Run the macro

NOTE WebCTRL Server must be running.

- 1 In Excel, click **Tools > Macro > Macros**.
- 2 Select the **TestSoapRead** sub-routine.
- 3 Click **Run**. The macro will write the values into the WebCTRL database and field modules.

NOTE Follow the steps below if you get an error message when you run the macro.

- a) In Excel, select **Tools > Macro > Visual Basic Editor**.
- b) In the Visual Basic editor, select **Tools > References**.
- c) Select the **Microsoft Soap Type Library v3.0** and click **OK**.

Example using Web services to retrieve trend data

Follow the process below to retrieve a collection of zone temperature samples and put it in an Excel spreadsheet.

Step 1: Create a spreadsheet

- 1 Enter the following information the spreadsheet uses to log in to the WebCTRL system.
 - WebCTRL Server IP address or the server network name (Cell A1 in this example)
 - Operator name for logging in to WebCTRL (Cell A2 in this example)
 - Operator's WebCTRL password (Cell A3 in this example)
- 2 Enter the GQL path to the trend object you want to retrieve (Cell A5 in this example).

NOTE You can also use a global path or a global reference name such as #zone_1.
- 3 Define the sample's start time (Cell A6) and end time (Cell A7), and the maximum number of samples to take (Cell A9).
- 4 The text in Cell A11 indicates where the results will be listed after the macro is run.

	A	B
1	192.168.162.170	
2	administrator	
3	abc	
4		
5	#avv7/zone_temp/trend_log	
6	1/13/07 8:00 AM	
7	1/13/07 5:00 PM	
8		
9	100	
10		
11	Results:	
12		

The macro will retrieve the trend data and write the time of each sample in column A and the corresponding zone temperature in column B.

Step 2: Create a macro

The macro will retrieve the values from your system's trend log and put them in the spreadsheet.

The following steps correspond to the numbered parts of the code shown below.

- 1** Name the subroutine (evalTrends) that will retrieve the trend data from WebCTRL.
- 2** Define which spreadsheet cells contain the:
host (WebCTRL server)
user (WebCTRL operator)
password (WebCTRL operator's password)
- 3** Add this section to define the data read from the GQL expression for the trend in cell A5. This retrieves trends from startDate to endDate:
LimitFromStart - to retrieve maxRecords from beginning if true; from end if false
MaxRecords - the maximum numbers of records to retrieve
expression - the expression to evaluate
- 4** Identify the Web services program that allows the Excel spreadsheet to retrieve the data from the WebCTRL server over the network or Internet.
- 5** Enter the code to authenticate the user.
- 6** Enter the error handling code.
- 7** Add this code to retrieve the trend data and displayed it.
- 8** This displays an error checking statement if an error is found in the data.

```

① Sub evalTrends ()

②   host = Range("A1").Value
   user = Range("A2").Value
   passwd = Range("A3").Value

③   startDate = Format(Range("A6").Value, "mm/dd/yyyy hh:mm:ss AMPM")
   endDate = Format(Range("A7").Value, "mm/dd/yyyy hh:mm:ss AMPM")
   limitFromStart = Range("A8").Value
   MaxRecords = Range("A9").Value

   expression = Range("A5").Value

④   Dim client As MSSOAPLib30.SoapClient30
   Set client = CreateObject("MSSOAP.SOAPClient30")
   URL = "http://" & host &
         "/_common/webservices/Trend?wsdl"

   client.mssoapinit (URL)

⑤   client.ConnectorProperty("WinHTTPAuthScheme") = 1
   client.ConnectorProperty("AuthUser") = user
   client.ConnectorProperty("AuthPassword") = passwd

⑥   On Error GoTo err
   Dim result1() As String

⑦   result1 = client.getTrendData(expression, startDate, endDate,
                                   limitFromStart, maxRecords)

   Dim i, row, index, size As Integer
   index = 0

   Rem results is time/value string pairs
   Rem compute size: result is 0 based, so add one to UBound to get size
   size = (UBound(result1) + 1) / 2

   For i = 1 To size
       row = i + 11
       Range("a" & row) = result1(index)
       Range("b" & row) = result1(index + 1)
       index = index + 2
   Next
   GoTo done

err:
⑧   Range("a10") = err.Description

done:

End Sub

```

NOTE If you have problems connecting to WebCTRL using Visual Basic, add the following line:

```
client.ClientProperty("ServerHTTPRequest") = TRUE
```

above the line:

```
client.mssoapinit (URL)
```

Step 3: Run the macro

NOTE WebCTRL Server must be running.

- 1 To launch and run the macro, click **Tools**.
- 2 Click **Macro > Macros**.
- 3 Select the **evalTrends** sub-routine.
- 4 Click **Run**. The macro will retrieve the data and place it in the spreadsheet.

NOTE Follow the steps below if you get an error message when you run the macro.

- a) In Excel, select **Tools > Macro > Visual Basic Editor**.
- b) In the Visual Basic editor, select **Tools > References**.
- c) Select the **Microsoft Soap Type Library v3.0** and click **OK**.

Example using Web services to retrieve a WebCTRL report

Follow the procedure below to retrieve a WebCTRL Point List report and put it in an Excel spreadsheet.

Step 1: Create a spreadsheet

- 1 Enter the following information the spreadsheet uses to log in to the WebCTRL system.
 - WebCTRL Server IP address or the server network name (Cell A1 in this example)
 - Operator name for logging in to WebCTRL (Cell A2 in this example)
 - Operator's WebCTRL password (Cell A3 in this example)
- 2 Enter the path to the WebCTRL report (Cell A5 in this example).

NOTE You can also use a global path or a global reference name such as #zone_1.

	A	B
1	192.168.162.170	
2	administrator	
3	abc	
4	/trees/geographic/chiller	
5	~point-list-report	
6		

The macro will write the report data to Cell B1.

Step 2: Create a macro

The macro will retrieve the report data and add it to the spreadsheet.

The following steps correspond to the numbered parts of the code shown below.

- 1 Name the sub-routine (TestReport) that will retrieve the report.
- 2 Define which spreadsheet cells contain the:
 - host (WebCTRL server)
 - user (WebCTRL operator)
 - password (WebCTRL operator's password)
- 3 Identify the Web services program that allows the Excel spreadsheet to retrieve the report from the WebCTRL server over the network or Internet.
- 4 Enter the code to authenticate the user.
- 5 Enter the error handling code.
- 6 Enter the code to run the report.
- 7 This displays an error checking statement if an error is found in the data.

```

1 Sub TestReport ()
2   host = Range("A1").Value
   user = Range("A2").Value
   passwd = Range("A3").Value

3   Dim client As MSSOAPLib30.SoapClient30
   Set client = CreateObject("MSSOAP.SOAPClient30")
   URL = "http://" & host &
         "/_common/webservices/Report?wsdl"
   client.mssoapinit (URL)

   client.ConnectorProperty("WinHTTPAuthScheme") = 1
4   client.ConnectorProperty("AuthUser") = user
   client.ConnectorProperty("AuthPassword") = passwd

5   On Error GoTo err

   location = Range("A4").Value
6   report = Range("A5").Value

   result = client.runReport("location", "report", "csv")
   Range("B1").Value = result
   GoTo done

7   err:
   Range("B1").Value = err.Description

   done:
End Sub

```

NOTE If you have problems connecting to WebCTRL using Visual Basic, add the following line:

```
client.ClientProperty("ServerHTTPRequest") = TRUE
```

above the line:

```
client.mssoapinit (URL)
```


Step 3: Run the macro

NOTE WebCTRL Server must be running.

- 1** To launch and run the macro, click **Tools**.
 - 2** Click **Macro > Macros**.
 - 3** Select the **TestReport** subroutine.
 - 4** Click **Run**. The macro will retrieve the data and place it in the spreadsheet.
- NOTE** Follow the steps below if you get an error message when you run the macro.
- a) In Excel, select **Tools > Macro > Visual Basic Editor**.
 - b) In the Visual Basic editor, select **Tools > References**.
 - c) Select the **Microsoft Soap Type Library v3.0** and click **OK**.

Chapter 19

Manual commands

To run a manual command:

- 1 Click the menu button , then select **Manual Command**.
- 2 Type the manual command in the dialog box, then click **OK**.

TIP Ctrl+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
arcnet	Run this command each time you plug a device, such as a laptop, into a control module using an ARCNET card. The arcnet command configures WebCTRL to recognize your device as the WebCTRL server. Run this command from the equipment, module, or network level on the NET tree.
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 control module 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: <pre>bbmd read 154.16.12.101</pre>
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: <pre>bbmd update 888</pre>

Command	Description
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: <code>bbmd view 888</code>
bbmd write <table file> <IP address>	Writes the BBMD table into the control module at the given IP address. See <i>To set up BBMDs using WebCTRL</i> in WebCTRL Help. For example, to write the BBMD table in dallasbbmd.txt into the BACnet device router at IP address 154.16.12.101, type: <code>bbmd write dallasbbmd.txt 154.16.12.101</code>
bbmd clear <IP address>	Clears the BBMD for the specified control module. For example: <code>bbmd clear 154.16.12.101</code>
bbmd dump <network> <file>	Writes to a file the BBMD from the specified control module. For example: <code>bbmd dump 888 dallasbbmd.txt</code>
checkurls	1. Finds all network point exp: expressions for the selected item in the GEO or NET tree. 2. Converts the exp: expressions to bacnet:// equivalent expressions that the control modules use. 3. Compares the equivalent bacnet:// expressions to the bacnet:// expressions currently downloaded in the control modules. 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 Global copy 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 <i>Use Global Copy</i> (page 42).
disconnect	Disconnects you from a BACnet dial-up session if you are the last active operator.
download commands:	Each of these commands performs an immediate download to a control module for the selected control program, device, or driver.
download m	Downloads memory, including editable properties and schedules.
download p	Downloads editable properties only.
download s	Downloads schedules only.

Command	Description
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
go ~net	Takes you from a piece of equipment on the GEO tree to the same equipment on the NET tree.
go ~geo	Takes you from a piece of equipment on the NET tree to the same equipment on the GEO tree.
go ~device	Takes you to the control module for a point or piece of equipment on the NET tree.
go ~network	Takes you to the network the selected object's control module 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 in the NET 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 in the GEO or NET tree. For example: go 300550/AI:3
go <object ID>	Goes to an object for the current device in the GEO or NET 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, module, 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
logoffuser	Logs off a user (without warning the user). Type a <code>whoson</code> manual command to view the IDs of logged in operators, then type <code>logoffuser x</code> , where x is a the user's ID.

Command	Description
markdownload commands:	These commands place the control module for the selected tree item on the list to download at a later time. The download list can be viewed from the Download page on the CFG tree.
markdownload	Downloads memory, including editable properties and schedules.
markdownload p	Downloads editable properties only.
markdownload s	Downloads schedules only.
memory	Shows the amount of server memory allocated for WebCTRL and the amount being used by WebCTRL.
memory -free	Releases unused server memory, then shows the memory usage by WebCTRL before and after the release.
modstat commands:	These commands display a control module status report. NOTE It is not necessary to perform a download on a control module before running a modstat on the module. Binding takes place when you run the modstat command.
modstat	Displays status of the control module 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 control module in the IP network using the module's ID. Your location in the system does not have to be the module you are querying. For example: <code>modstat 8:489202</code>
modstat mac:<network number>,<media type>:<mac address>	Displays a status report with information about a specific control module in the system using the module's MAC address. Network number is the number of the network this module is on as specified in SiteBuilder; media type is the type of network the module is on; MAC address can be either the module address or the IP address and depends on the module's media type. For example: <code>modstat mac:48161,arcnet:2</code> or <code>modstat mac:888,bacnet/ip: 172.16.101.119</code>
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: <code>notify your message</code> . The message must use only alphanumeric characters. You must have the Admin privilege set or the Engineer System privilege to run this command.

Command	Description
paramupload	Uploads parameters (editable properties) to WebCTRL Server 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 GEO tree. If you want to do this for everything under a particular router (such as an), navigate to the router or the network on the NET 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: <code>ping <hostname></code> where <hostname> is the IP address or device name. For example: <pre>ping 192.168.168.1</pre> (will ping the IP address 4 times) or <pre>ping 192.168.168.1 -t</pre> (will ping the IP address constantly)
rebootserver	Restarts WebCTRL Server. You must log back in to WebCTRL if you want to continue. You must have the System Shutdown privilege to run this command.
rebuild	Rebuilds a Properties page. Use if you make changes to control program property text in EIKON LogicBuilder.
reload	Reloads a control program. Use if you make changes to control program logic in EIKON LogicBuilder. You must have the Engineer System privilege to run this command.
restartmodule	Restarts the current control module. You must have the Manual Commands/Adv Network privilege to run this command.
rnet here	Overrides the address configuration of the Rnet host control module to allow a subsequent memory or editable property download. Run this command if you experience communication problems with the control module because the control module'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 control module to a CMnet where the address is set higher than any other address on the CMnet - Changed the 3-letter system name - Changed the 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 module 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.
storetrends	Uploads trend data from the control module(s) to the database for all equipment at and below the selected item on the GEO tree. This command stores trend data for points that have Trend Historian enabled.
shutdown	Shuts down WebCTRL Server. 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.

Command	Description
timesync	Synchronizes the time on all control modules at the current location and below to the time on the server. Run this command only from a location in the NET tree. NOTE For CMnet networks, executing a timesync on a control module sends the timesync to its gateway, and all the control modules under that gateway. You must have the Manual Commands/Adv Network privilege to run this command.
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 or set up WebCTRL's autopilot.
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, lvi5 for an Internet browser on a computer), and how long it has been since they have actively interfaced with the WebCTRL system.
zap	Restarts the current control module. You must have the Manual Commands/Adv Network privilege to run this command.

Chapter 20

Running WebCTRL's 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.

To set up WebCTRL's autopilot

- 1 Copy the WebCTRL`##\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.

Leave a blank space between each field

```
<script url="http://someurl" user="admin" password="pwd123" full screen="true" loop="true">
```

NOTES

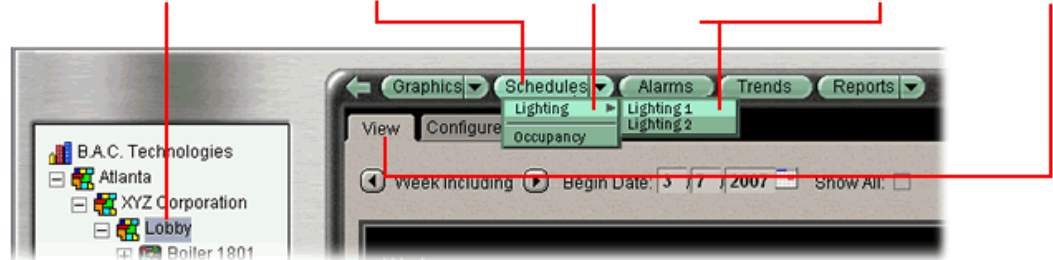
- The **Attribute** list near the top of the file describes each field.
- To prevent exposing someone's password in this file, create a generic user and password in WebCTRL.

- 4 Each pair of rows beginning with **<navigate** and **<delay** define a page in WebCTRL and how many seconds WebCTRL should display the page. In each line, replace the text in quotes with information specific to your system. Add or delete rows as needed.

NOTES

- o **path=** and **action=** are required fields, but you can also specify a particular category, instance, or tab.

```
<navigate path="Lobby" action="schedules" category="lighting" instance="lighting_1" tab="view"/>
```



- o To get the information for each field:
 - a. In WebCTRL, go to the page you want to display.
 - b. Press Ctrl+M.
 - c. Type `whereami`.
 - d. Click **OK**.
 - e. Use the reference name that appears in parentheses.
For example, if `whereami` displays **Action Button: Alarms(events)**, use **events** for the path's **action=** field.
 - o To have the autopilot display a report, define the path to the report's **View** tab. The autopilot will automatically run the report.
- 5 Save the file.

To run WebCTRL's autopilot

NOTE If your computer is running Windows Vista®, see *To run WebCTRL's autopilot with Windows Vista* (page 187) before starting the autopilot.

- 1 Start WebCTRL Server.
- 2 Run the **autopilot.bat** file that you created in step 1 of *To set up WebCTRL's autopilot* (page 185).

NOTES

- To stop the autopilot, do one of the following:
 - Close the browser.
 - Close the Command Prompt window that is running the **autopilot.bat** file to stop the autopilot but leave WebCTRL running in the browser.
- If the autopilot does not start, open **autopilot.log** to see the error.

To run WebCTRL's autopilot with Windows Vista

To run the autopilot with the Windows Vista® operating system, you must add the WebCTRL URL to Internet Explorer's trusted sites.

- 1 In Internet Explorer, select **Tools > 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 WebCTRL's autopilot* (page 185).
- 4 Clear the checkbox beside **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.

Chapter 21

Managing files on a remote WebCTRL server

WebCTRL supports WebDAV, a network protocol designed for managing remote server files through an Internet connection. By using WebDAV, you can access the Internet from anywhere in the world and manage your system files residing on a distant WebCTRL server.

Methods for using WebDAV

- Internet Explorer 5.5 or later—perform remote file management by opening the remote system as a web folder.
- Microsoft Windows Me or later—perform remote file management by adding a network connection in file explorer.
- A third-party WebDAV client application such as WebDrive allows you to open remote files in addition to managing them.

To use WebDAV

PREREQUISITES

On your client computer, you must:

- Be running WebCTRL v2.0 or later on the WebCTRL server.

NOTE Your WebCTRL system must be running on the remote server for WebDAV to work; you can then access the webroot folder for the system. You cannot edit the WebCTRL database when using WebDAV.

- On the WebCTRL **Systems Settings** page **Security** tab, enable **Remote File Management**.
- Have Remote File Management privilege assigned in your privilege set.
- Have a password for the person logging in; the password field cannot be empty.

To use WebDAV from a client computer:

- 1** On the Internet Explorer menu bar, select **File > Open**.
- 2** In the **Open** dialog box, select **Open as Web Folder**.
- 3** In the **Open** field, type the IP address of your WebCTRL server/webdav. For example:
`http://172.16.2.163/webdav`.

NOTE On a Windows XP machine, you may need to include the HTTP port number in your URL. For example: `http://172.16.2.163:80/webdav`.

- 4** Type your WebCTRL user name and your password.

NOTES

- The user name must not end with a space when using WebDAV.
 - The password field must contain a valid password, must not contain a space, and must not be blank.
- 5** Browse to **Web Folders** to remotely view and manage your WebCTRL files.

Chapter 22

Using wireless devices with WebCTRL

WebCTRL supports Wireless Application Protocol (WAP), a communications protocol that allows you to access your system through a wireless device, such as a mobile phone. WebCTRL supports WAP-enabled browsers on 2G and 3G devices on the Sprint PCS network and Pocket Internet Explorer on devices running Windows Mobile for Pocket PC 2003 or later.

Using a WAP device, you can access the Internet and remotely manage certain aspects of your system. WebCTRL currently supports only English alphanumeric characters.

NOTES

- Navigation buttons and how the information is presented varies among WAP devices.
- To use WAP through a Secure Sockets Layer (SSL), you must use a certificate from a trusted Certificate Authority (CA). Ask your phone company which Certificate Authorities they support. See *To set up TLS/SSL using a self-signed certificate* in WebCTRL Help.

Supported WebCTRL features

The WAP interface supports the following features of WebCTRL. You can:

- Navigate through the **GEO** tree.
- View and manage **Alarms** for the current location.
- Receive an e-mail alarm message.
- View and edit abbreviated **Properties** pages for areas and equipment.
- View and edit abbreviated **Properties** pages for microblocks.

You cannot:

- View and manage **Schedules**.
- View and edit items under the **CFG** tree.
- Configure and view **Reports**.
- View **Graphics** pages.
- Send manual commands.

To dial up a System using WAP

Dialing up a WebCTRL system using a WAP device differs from dialing a telephone number. Each service has a slightly different method. The following method for connecting to a WebCTRL server using WAP is similar to the Sprint PCS Wireless mobile phone process.

- 1 Turn on the WAP device.
- 2 Select **Wireless Web**.
- 3 Select **Launch Browser**.
- 4 Select **Menu**.
You can also select **WebCTRL bookmark** if one has been saved.
- 5 Select **Goto**.
- 6 Tap in the WebCTRL IP address; for example, 192.168.168.1.

NOTE If you do not see the WebCTRL login, tap in the IP address again and do the following:

If your WAP device supports...	...append these characters to the end of the address
WML browsers. Applies to most older (pre 3G) WAP devices.	?t=w
XHTMLMP browsers. Applies to most newer (3G) WAP devices.	?t=xmp
XHTML browsers. A text only interface for PC's or PDA's.	?t=X

EXAMPLE 192.168.168.1?t=xmp

- 7 Log in to your WebCTRL system:
 - Tap in your WebCTRL username, then select **OK**
 - Tap in your WebCTRL password, then select **Login**.

To navigate the System

Navigating through the WAP interface is the same as navigating through the WebCTRL **GEO** tree—the WAP screen is similar to the WebCTRL navigation pane.



WebCTRL automatically generates default WAP interface pages. However, you can create custom pages using ViewBuilder for WAP.

After you log in, the first screen shows the system level. The name at the top of the screen is the name of the current level. To navigate deeper into the system, select an item by either pressing its number on the keypad or by scrolling through the list and then selecting OK. To navigate to other areas of the system, see below.

Select	Action	
1...	Navigate up one level.	
Menu	Navigation	Return to the navigation tree (area and equipment level only).
	Alarms	List the alarms at the current level (area and equipment level only).
	Properties	Show properties at the point level and show properties at the area and equipment levels if custom pages have been attached.
	Back	Return to the previous page.
	Go to Root	Return to the top of the GEO tree.
	Logout	Log out of WebCTRL.

To view and edit Alarms

- 1 Navigate to the area you want to view alarms for.
- 2 Select **Menu**.
- 3 Select **Alarms** to view all alarms at this area.
- 4 Select an alarm, then click **OK** to view or edit its details.
- 5 Select **Actions** to view a list of actions for the alarm.
- 6 Select the action to be done, then select **OK**.

Select	Action
1 List	List all alarms at the current area or equipment level.
2 Navigation	Return to the navigation tree.
3 Ack All	Acknowledge all alarms at the current level.
4 Del All Closed	Delete all closed alarms at the current level.
5 Del All	Delete all alarms at the current level.

To view and edit equipment properties

NOTE If WebCTRL requires reasons for changes to equipment (see page 155), you cannot edit equipment properties using WAP.

- 1 Navigate to a point or BACnet object to view.
- 2 Edit any properties in brackets.

NOTE You may need to scroll down the screen to view them all.

For example, from the BACnet analog input point level, you can view the following:

Select	Action
Value	Present value for that point.
Lock	Locked override status for that point; True locks the present value to the At value.
At	Locked override value.
Alarm	Alarm state for that point.

Chapter 23

Running WebCTRL Server as a Windows service

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 non-MS Access database 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 Microsoft's "How to delay loading of specific services" (<http://support.microsoft.com/kb/1933888>).

To install WebCTRL Server service

- 1 Click the Windows **Start** button, then click **Run**.
- 2 Browse to the **WebCTRLx.x** folder, then select **wsinstall.exe** (the service install file).
- 3 Click **OK**.

To start WebCTRL Server as a Windows service

- 1 Click the Windows **Start** button, then select **Control Panel**.
- 2 Double-click **Administrative Tools**, then **Services**.
- 3 In the **Services (Local)** list, double-click **WebCTRL**.
- 4 In the **WebCTRL Properties** dialog box, select **Automatic** in the **Startup type** drop-down list.
- 5 Optional: If you want to be able to access WebCTRL Server on the server computer's desktop, select **Allow service to interact with desktop** on the **Log On** tab.

NOTES

- If you do not select this checkbox, 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 select this checkbox, 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 select this checkbox and WebCTRL is to run email alarm actions, ask your Network Administrator to set up **Local System account** to send emails.

6 Click **Start**.

7 Click **OK**.

NOTES

- To shut down the WebCTRL service, return to the **WebCTRL Properties** dialog box and click **Stop**.
- If WebCTRL Server does not start when you click **Start**, you may have a Windows permissions problem. Follow the procedure below in *To set up the WebCTRL service to print to a network printer* to set up the Windows user name and password.

To set up the WebCTRL service to print to a network printer

If WebCTRL 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** Open the Windows Control Panel.
- 2** Select **Administrative Tools > Services**.
- 3** Double-click WebCTRL (**version number**).
- 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 remove WebCTRL Server service

- 1** Click the Windows **Start** button, then click **Run**.
- 2** Browse to the WebCTRL service install file—**wsinstall.exe**.
- 3** Replace **.exe** with **<space>-remove**. For example:
C:\WebCTRL4.1\wsinstall -remove.
- 4** Click **OK**.

Chapter 24

Setting up your system for non-English languages

English is WebCTRL's 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 WebCTRL in non-English languages.

- 1 Install a language pack (see page 197).
- 2 Prepare your workstation for non-English text (see page 198).
- 3 Create control programs and translation files (see page 199).
- 4 Create graphics (see page 201).
- 5 Create your system in SiteBuilder (see page 204).
- 6 Set an operator's language in WebCTRL (see page 205).

Installing a language pack

A language pack translates the text in the WebCTRL interface. WebCTRL is installed with an English language pack. To download other language packs:

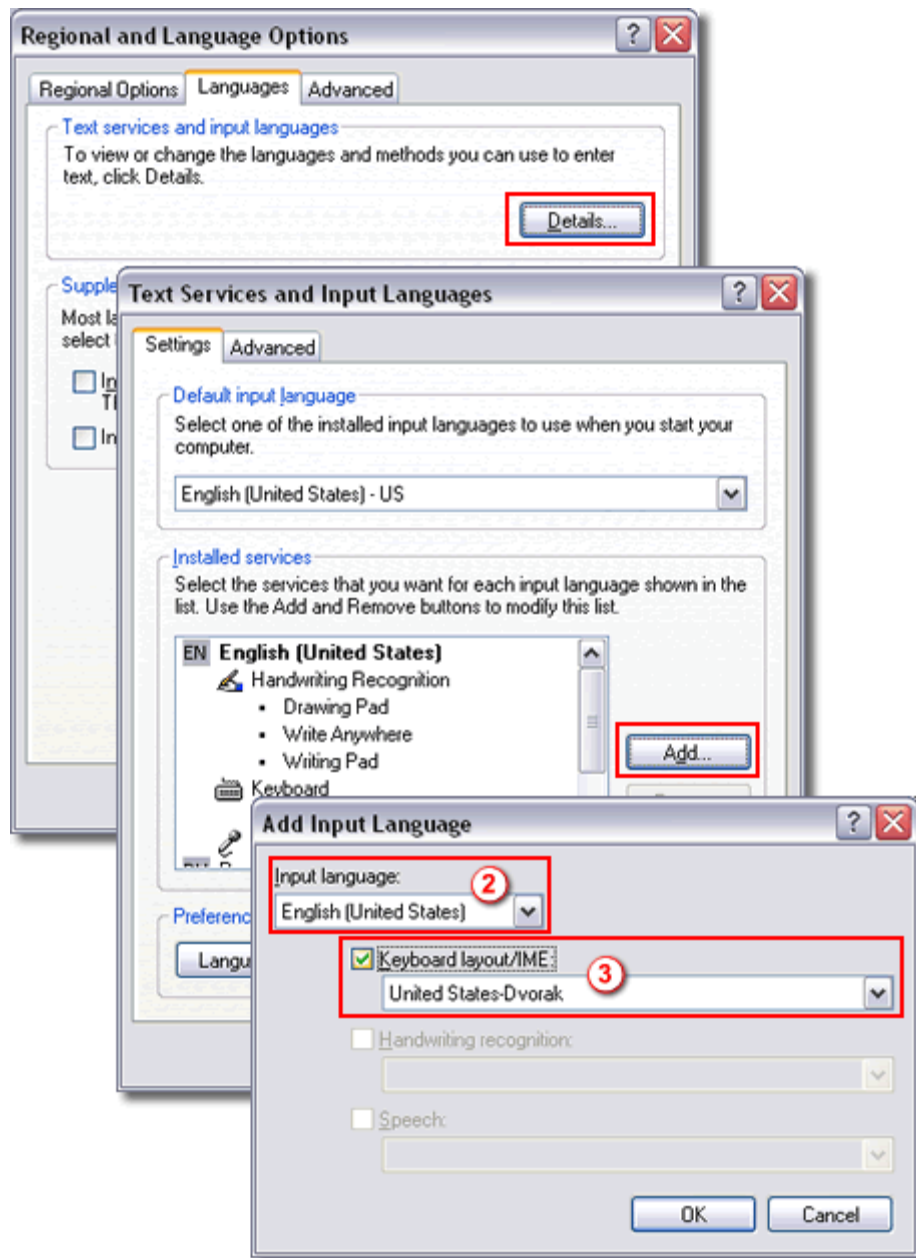
- 1 Go to <http://accounts.automatedlogic.com> (<http://accounts.automatedlogic.com>).
- 2 Select **Support > Download**.
- 3 Under **Software Updates**, select **Language Packs** for the version you need.
- 4 Follow the instructions under **To install this language pack**.

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

Set up your workstation so you can type international fonts from your keyboard.

- 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 WebCTRL 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.

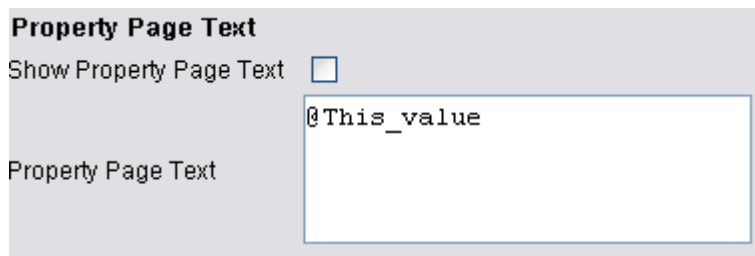
In WebCTRL, the key term is replaced with its equivalent in the translation file for the current operator language. If a WebCTRL Properties page, Logic page, or graphic shows **??key term??**, the key term is missing from the translation file.

NOTES

- You also use key terms and translation files with graphics that you create with WebCTRL extensions for FrontPage (see page 201).
- To edit existing control programs or translation files, see *Editing translation files, control programs, or graphics* (page 205).

To enter a key term in EIKON LogicBuilder

In EIKON LogicBuilder's Property Editor, type @ before each key term.



NOTES

- Type only the key term in EIKON LogicBuilder. 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 and graphics created with WebCTRL extensions for FrontPage (see page 203). 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
- Each graphic created with WebCTRL Extensions for FrontPage
- Key terms used in multiple graphics

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 WebCTRL will be displayed in 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
A single graphic	<graphic_name>_xx.native*	WebCTRL\webroot\ <system_name>\graphics\vl5
Multiple graphics	translations_xx.native*	WebCTRL\webroot\ <system>\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 EIKON LogicBuilder, 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*
German:	_de	ISO-8859-1
Korean:	_ko	EOL-KR
French	_fr_FR	ISO-8859-1
Spanish:	_es	ISO-8859-1
English:	_en	ISO-8859-1
Russian	_ru	KOI8_R
Simplified Chinese:	_zh	GB2312
Traditional Chinese:	_zh_TW	Big5
Thai	_th	TIS620

* Encoding is used when you create the translation file.

Creating graphics for a non-English system

Use ViewBuilder to create graphics for a single language system.

Use WebCTRL extensions for FrontPage to create graphics for a multi-language system.

Creating a non-English graphic in ViewBuilder

NOTES

- The names of your .view file and any inserted image files must contain only ASCII characters.
- Graphics created in ViewBuilder do not use translation files. Type non-English terms directly into the graphic in ViewBuilder.

Before you begin adding objects to a graphic:

- 1 Select **Configure > View Properties**.
- 2 In the **Language** field, select the language you want to use.
- 3 Click **OK**.

To set the default font

ViewBuilder uses the default font for all text in your graphic. ViewBuilder's default font is Arial Unicode MS, if it is installed on your computer. This font supports all languages and is the only font that ensures controls and labels in your graphic will align correctly in WebCTRL. If Arial Unicode MS is not installed, ViewBuilder uses Arial.

To determine the default font:

- 1 Select **Configure > Preferences**.
- 2 Select the **Language Font Assignments** tab.
- 3 If the **Font** column shows Arial, install Arial Unicode MS if possible. If you cannot install Arial Unicode MS, use Arial or select another font.

To install the Arial Unicode MS font

Arial Unicode MS is only supplied with Microsoft® Office. Although Office may be installed on your computer, the font may not be installed.

- 1 Insert your Microsoft Office CD in the computer.
- 2 Select **Start > Control Panel**.
- 3 In the **Control Panel**, select **Add/Remove Programs**.
- 4 Make sure **Change or Remove Programs** in the upper left corner is selected.
- 5 Select **Microsoft Office XP** (or Microsoft Word 2002).
- 6 Click **Change**.
- 7 In the **Setup** window, select **Add or Remove Features**.
- 8 Click **Next**.

- 9 Expand **Office Shared Features**.
- 10 Expand **International Support**.
- 11 Click the icon next to **Universal Font**.
- 12 Select **Run all from My computer**.
- 13 Click **Update**.
- 14 Restart ViewBuilder if it was open.

Creating a graphic for a multi-language system using WebCTRL extensions for FrontPage

When you create a graphic using WebCTRL extensions for FrontPage, you enter a key term instead of text in the graphic. When the graphic is displayed in WebCTRL, the key term is replaced with its equivalent in the translation file for the current operator language. See *Creating control programs and translation files* (page 199).

To enter a key term for an image area label:

- 1 Double-click the image area label.
- 2 Enter a key term in the **Label Text** field.

NOTE Use only alphanumeric characters and underscores (no spaces). Do not start a key term with a number.
- 3 Select **Label Text is resource key**.
- 4 Do one of the following:
 - If the translation file for the graphic is in **WebCTRL\webroot\<system_name>\graphics\lvl5**), leave the **Resource** field blank.
 - If the translation file is in **WebCTRL\webroot\<system_name>\resources**, enter the following in the **Resource** field: **resources\<translation file prefix>**
 For example: resources\translation
- 5 Click **OK**.

To enter a key term for other text:

- 1 Click the International Text button .
- 2 Double-click **[Text]** on the graphic.
- 3 Type the key term in the **Key** field.
- 4 Enter the location of the translation file in the **Resource** field. See step 4 above.
- 5 Click **OK**.

Creating a non-English system in SiteBuilder

To set language preferences

- 1 In SiteBuilder, select **Configure > Preferences**.
- 2 Select the **Language** tab.
- 3 Under **Supported Languages**, select each language that your system will display.
NOTE Each language you select requires a language pack. See *Installing a language pack* (page 197).
- 4 Select the system language under **System**. See *System Language* (page 204).
- 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 Select the **Font** tab.
- 3 To the right of each language that your system will display, click **Default** and select the appropriate font for that language from the drop-down list.
- 4 Click the **Language** tab.
- 5 Select a language in the **Current Session** field.
- 6 Click **OK**.
- 7 Create your system.
- 8 Save your database.
- 9 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 *Setting an operator's language in WebCTRL* (page 205).

* You can change the language shown on WebCTRL's login page by selecting a different language from the list below the **Password** field.

To set an operator's language in WebCTRL

An operator can change their language preference in WebCTRL.

- 1 On the **CFG** tree, select **My Settings**.
- 2 Under **Preferences**, select the **Language** in the drop-down list.
- 3 Click **OK**.

Editing translation files, control programs, or graphics for a non-English system

If you add or edit a key term in a control program or graphic, be sure to make the same change in the translation file. See *Creating control programs and translation files* (page 199).

If you make changes after attaching a control program or graphic 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 in the **Geographic** tree, then select **Rebuild Equipment Pages**.
- If you changed logic in the control program, right-click the control program in the **Geographic** tree, then select **Reload Control Program**.
- If you changed a translation file located in WebCTRL\webroot\<system_name>\resources, right-click each applicable graphic in the **Geographic** tree, then select **Rebuild Graphic Resources**.

To edit a bundled resource

EIKON LogicBuilder 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 200). To edit a bundled translation file:

- 1 Open the control program in EIKON LogicBuilder.
- 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 EIKON LogicBuilder, click  and select the edited file.
- 6 Click **OK** to overwrite the existing file.

Editing an EIKON for WebCTRL control program in EIKON LogicBuilder

To edit a non-English control program that you created in EIKON for WebCTRL:

- 1 In EIKON LogicBuilder, open the .eiw or .equipment file, 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 or graphics.
- 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 206).

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.

Chapter 25

Third-party integration

You can integrate WebCTRL and third-party systems into a single building automation system. The key to any successful integration is the cooperation of the third-party vendor.

See *Integrating a third-party non-BACnet system* (page 209) or *Integrating a third-party BACnet system* (page 210).

WebCTRL allows third-party points provided by either of the following:

- Control modules that provide third-party points (LGR line, ME-LGR line, and the ME812u-LGR)
- Software point packs - 100 points per pack (older ExecB hardware)

Third-party points count toward the 500-point limitation of WebCTRL 500.

To perform integration in an existing system, you may need additional control modules or point packs. First, determine the number of third-party points (see page 207) available in your system.

Determining the number of third-party points used in a system or control module

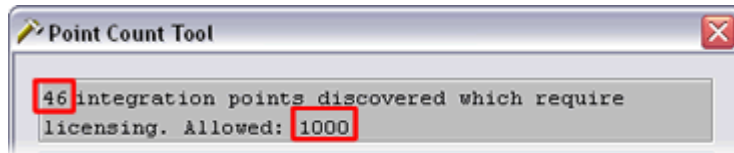
To determine the number of third-party points used in a system

Using SiteBuilder, you can count the third-party (integration) points and total points in a system, and display the number of points allowed by your system.

- 1 Right-click the system level in the **Geographic** tree, then select **Run Global Point Count**.

TIP Select **Run Local Point Count** below the system level to count third-party points at and below the selected item.

- 2 Compare the number of integration points discovered to the number allowed by your system.



NOTE Network I/O microblocks are counted as integration points if they meet both of the following criteria:

- The **Address** field is not blank.
- The **Address** field references a point that does not exist in the WebCTRL database.

If your point count is higher than you expect, you may have incorrect or incomplete BACnet addresses in Network I/O microblocks. SiteBuilder displays the addresses that require licensing, but does not show the location of the point.

To find and correct incorrect BACnet addresses

- 1 After you run the point count in SiteBuilder, open the following text file:

WebCTRL v2.5 and later	IntegrationPointsLog.txt
WebCTRL v2.0	LicensePointsLog.txt

- 2 Move to the section that begins **Found x points in the system that require licensing.**
- 3 Copy the string you want to find, then move to the top of the document.
TIP Use the keyboard shortcut Ctrl+Home.
- 4 Select **Edit > Find**, then paste the address in the **Find** window.
- 5 Click **Find Next**. Make a note of the path (everything before **/address=...**).
- 6 Repeat steps 2 through 5 for each address you want to find.
- 7 Open the system in WebCTRL.
- 8 Run the manual **go** command, followed by the path you want to find.
- 9 Correct the address in the **Address** field on the point Properties page.
- 10 Repeat steps 8 and 9 for each address you need to correct.

NOTE If the third-party point count previously exceeded the amount allowed by your system, run the **Run Global Point Count** action in SiteBuilder again. The warning message in WebCTRL will disappear if the third-party points are now within the allowed limit.

To determine the number of third-party points used in an LGR line, ME-LGR line, or ME812u-LGR control module

- 1 In WebCTRL, on the NET tree, expand the plus sign (+) to the left of the control module.
- 2 Click on **Driver**, then scroll to the bottom of the page.
- 3 **Integration points requested** and **Integration points active** show how many third-party Network I/O microblocks the control module is using. These two counts will differ if you exceed the product's integration point limits. For example, if your ME-LGR25 's control program includes 27 third-party points, your **Integration points requested** will be 27 and your **Integration points active** will be 25.

Integrating a third-party non-BACnet system

You can achieve full interaction between a non-BACnet third-party device and WebCTRL using one of the following control modules. The control module must have the appropriate module driver and control program with Network I/O microblocks.

- ME-LGR25 provides up to 25 third-party points
- ME-LGR200 provides up to 200 third-party points
- LGR25 provides up to 25 third-party points
- LGR250 provides up to 250 third-party points
- LGR1000 provides up to 1000 third-party points
- ME812u-LGR provides up to 200 points
- WebPRTL with point packs (100 points per pack)

Non-BACnet devices may use an industry-standard open protocol, such as Modbus, or a proprietary protocol.

The module driver for a third-party protocol enables Network I/O microblocks to support addresses for third-party non-BACnet points. These points must be configured and information about them supplied by the third-party vendor.

Refer to the control module's Technical Instructions and to the applicable Third-party Integration Guide for details on installation, configuration, and troubleshooting.

To increase the number of third-party non-BACnet points in a system

You can increase the number of third-party non-BACnet points your system supports by purchasing additional control modules that provide third-party points, or if you are using a WebPRTL, by purchasing additional point packs.

NOTE A system can use both control modules that provide third-party points and WebPRTL's with point packs. However, keep the following in mind:

- The point allowance of a control module that provides third-party points applies only to itself. For example, if you purchase an LGR1000 and download control programs that use 500 third-party Network I/O points, you cannot apply the unused 500 points to a different piece of hardware.
- Control modules that provide third-party points do not use point packs. Point packs enable third-party non-BACnet points only in WebPRTL's.

EXAMPLE To add 100 non-BACnet third-party points to a system, you can purchase an ME-LGR200 or a WebPRTL and one point pack (100 points). If the system already has a WebPRTL, you can add 100 points to the WebPRTL by purchasing a point pack.

Integrating a third-party BACnet system

You can use either Display microblocks or Network I/O microblocks to integrate third-party BACnet devices into a WebCTRL system.

To use Display microblocks or Network I/O microblocks, the third-party vendor should supply a list of third-party network types, devices, objects, and their addresses. If this information is not supplied, you can discover BACnet networks, devices, and objects.

Network I/O vs. Display microblocks

Can I...	...with third-party Network I/O microblocks	...with Display microblocks
Integrate with a third-party vendor for free?	No, you must purchase a control module that provides third-party points or a point pack for older hardware.	Yes, except for your time to set it up.
Get free graphics?	No, you may purchase graphics from the ALC Graphics department or create your own.	No, you may purchase graphics from the ALC Graphics department or create your own.
Buy point packs to increase the number of third-party points I can use in my system?	Yes, if you are using a WebPRTL, LGE, LGRM-E, S line, M line, or UNI. Point packs do not increase the number of third-party points you can use in an LGR line, ME-LGR line, or ME812u-LGR control module.	No, point packs are not required. You may use as many Display microblocks as your license allows (Display microblocks count toward the 500 point limitation of WebCTRL_500).
Read values?	Yes	Yes
Write values?	Yes, for objects that are not marked "Read only".	Yes, for BACnet objects that are not marked "Read only".
Use logic?	Yes	No

Can I...	...with third-party Network I/O microblocks	...with Display microblocks
Generate an alarm?	Yes, from a variety of protocols, and utilizing all the functionality of alarm microblocks and WebCTRL reporting actions.	Yes, a BACnet Event Enrollment Display microblock can read an alarm generated by the third-party BACnet object it references.
Use them in any control program?	Yes, except in control programs with Display microblocks.	No, only in control programs with other Display microblocks.
Download a control program?	Yes, into a control module that provides third-party points, or into legacy hardware in a system with point packs.	No, a control program with Display microblocks is attached to modeled equipment in SiteBuilder, and resides only in the database on the WebCTRL server.
Use schedules?	Yes	Yes, except for dated weekly schedules, which are not supported by BACnet. The BACnet Schedule Display microblock can read and write to third-party BACnet schedule objects, but WebCTRL cannot execute logic in the third-party device based on a schedule state.
Make a thermographic floorplan?	Yes	No, a control program with Display microblocks cannot use the logic or microblocks a thermographic floorplan requires.
Get information from a protocol other than BACnet?	Yes, with the appropriate module driver in your control module.	No

Hardware options with Network I/O microblocks

If you use Network I/O microblocks to integrate a third-party BACnet device into a WebCTRL system you can use one of the following control modules to run your control program.

- ME-LGR25 provides up to 25 third-party points
- ME-LGR200 provides up to 200 third-party points
- LGR25 provides up to 25 third-party points
- LGR250 provides up to 250 third-party points
- LGR1000 provides up to 1000 third-party points
- ME812u-LGR provides up to 200 points
- Any of the following using point packs (100 points per pack):
 - LGE
 - LGRM-E
 - S line
 - M line
 - UNI
 - WebPRTL

NOTES

- The LGR line, ME-LGR line, ME812u-LGR, LGE, LGRM-E, and WebPRTL control modules can communicate on any BACnet network type (IP, Ethernet, ARCNET, MS/TP, or PTP). See the control module's Technical Instructions for details.
- S line, M line, and UNI control modules can communicate using BACnet on ARC156 or MS/TP networks. They can reference a third-party BACnet point on any network type if a BACnet route to the point exists.
- A system can use both control modules that provide third-party points and control modules with point packs. However, keep the following in mind:
 - The point allowance of a control module that provides third-party points applies only to itself. For example, if you purchase an LGR1000 and download control programs that use 500 third-party Network I/O points, you cannot apply the unused 500 points to a different piece of hardware.
 - Control modules that provide third-party points do not use point packs. Point packs enable third-party points only in LGE's, LGRM-E's, S line and M line control modules, UNI's and WebPRTL's.

EXAMPLES

For third-party BACnet integration in a system with this hardware...	Use...
LGE S6104 UNI M4106	Point packs. Any of these control modules can have control programs with Network I/O microblocks that reference third-party points.
LGR25 SE6104 UNI M4106	The LGR25 for the first 25 third-party points. You can add third-party points with: • Additional control modules that provide third-party points. • Point packs, if the control programs will be downloaded to the UNI or M4106.
ME-LGR200 SE6104 ZN551	The ME-LGR200 for the first 200 third-party points. You can add third-party points with additional control modules that provide third-party points.
LGR1000 SE6104 ZN551 M8102	The LGR1000 for the first 1000 third-party points. You can add third-party points with: • Additional control modules that provide third-party points. • Point packs, if the control programs will be downloaded to the M8102.

To integrate using Display microblocks

If Display microblocks will provide the functionality you need, you must set up your system to retrieve data from the third-party BACnet points of interest.

To retrieve third-party data using Display microblocks:

- 1 Get network, object, device, and address information from the third-party vendor. If this information is not supplied, you can discover BACnet networks, devices, and objects.
- 2 In EIKON LogicBuilder, create a control program.

NOTES

- A control program with Display microblocks can contain only Display microblocks.
 - Each Display microblock must match the BACnet object type it references. For example, to reference a third-party analog input, use a BACnet Modeled Analog Input microblock.
- 3 In each microblock, set the **Object Instance** to match the BACnet Object ID of the third-party object it references.
 - 4 In SiteBuilder, add the third-party equipment to the **Geographic** tree.
 - 5 In the **Equipment Properties** dialog box, select the control program you created in EIKON LogicBuilder.
 - 6 On the SiteBuilder **Network** tree, add (model) the third-party device.

NOTES

- If the third-party device is on a different BACnet network than your ALC equipment, you must also add the third-party network.
- If the third-party device is under a third-party router, you must add the third-party router and its network before adding the third-party device.

TIP For a third-party device on a different BACnet/IP network than any ALC devices, use BBMDs to communicate across an IP router.

- 7 In each third-party device's **Device Properties** dialog box **General** tab, type the **Address** and **Device Instance** information from the third-party vendor.
- 8 In the **Device Definition** field, select **Third Party Device** or **Third Party Device Router**.
- 9 Attach the third-party equipment on the **Geographic** tree to the third-party device on the **Network** tree.

To integrate using Network I/O microblocks

If Display microblocks do not provide the functionality required, you may use Network I/O microblocks to integrate a third-party device into a WebCTRL system. See *Network I/O vs. Display microblock* (page 210).

To retrieve third-party data using Network I/O microblocks:

- 1 Select and purchase the control module you need to control the third-party device in your system. See *Hardware options with Network I/O microblocks* (page 211).

- 2 Get network, object, device, and address information from the third-party vendor. If this information is not supplied, you can discover BACnet networks, devices, and objects.
- 3 In EIKON LogicBuilder, create a control program.
NOTE Each Network I/O microblock must match the BACnet object type it references. For example, to reference a third-party analog input, use a Network Analog Input or a Network Analog Input 2 microblock.
- 4 In each Network I/O microblock's **Address** field, type the third-party object's BACnet address using the information from the third-party vendor. See *To format a BACnet address* (page 216).
- 5 In SiteBuilder, add the third-party equipment to the **Geographic** tree.
- 6 In the **Equipment Properties** dialog box, select the control program you created in EIKON LogicBuilder.
- 7 Attach the third-party equipment in the **Geographic** tree to the desired ALC control module on the **Network** tree.

TIP If you are integrating to multiple identical third-party devices, you can copy the control program for the first device and then let WebCTRL help you address the Network I/O microblocks in the copies.

- 1 In WebCTRL, go to a copied control program's **Properties** page > **Network Points** tab.
- 2 Click **Search/Replace** at the top of the **Address** column.
- 3 Replace the device identification in the addresses with the identification for the third-party device the control program will communicate with.

To integrate to a third-party MS/TP device on an ALC U-net

Ideally, third-party MS/TP devices should reside under a dedicated BACnet router. However, they can reside on a U-net with existing U-cards. Follow these guidelines for successful integration.

- 1 If the control program that will monitor and control the third-party device meets zone control program requirements, you can download the control program into the UNI. Otherwise, download the control program into a different control module on the BACnet/ARCNET network. See *Hardware options with Network I/O microblocks* (page 211). The UNI provides a route to the third-party information on the MS/TP network whether or not it executes the control program.
- 2 Choose the UNI with the fewest control programs. The UNI prioritizes its local control program execution and management above BACnet packet routing. If the UNI is too busy to service BACnet packet routing needs due to higher priority activities, the third-party MS/TP device communications may be intermittent. A UNI16 is a better choice than a UNI32.
- 3 The UNI communicates BACnet on an MS/TP network at 38.4k baud or 9600 baud. Leave the U-net at the default of 38.4k baud for optimum performance. If the third-party device cannot communicate at 38.4k baud or 9600 baud, then it cannot be used on a U-net.
- 4 The third-party MS/TP device address must not conflict with any of the U-cards on the U-net. A general recommendation would be to use an address of 33 or higher for the third-party device to guarantee that it will never conflict with a U-card.

- 5 In WebCTRL, on the UNI driver properties page, set **MSTP Max Master** to the highest address used on the MS/TP network.
- 6 The MS/TP network number in the third-party device and the U-net MS/TP network number in SiteBuilder must match.

To discover BACnet networks, devices, and objects

WebCTRL's Discovery tool locates all accessible BACnet networks, BACnet devices, and BACnet objects (including devices in your WebCTRL system) on a BACnet network. The information gathered in this process is typically used to incorporate third-party BACnet devices and their BACnet objects into the WebCTRL database.

To use the Discovery tool:

- 1 On the WebCTRL **CFG** tree, select **System Settings**.
- 2 On the **Communications** tab, clear the **Use Static BACnet Bindings** checkbox.
- 3 On the WebCTRL **CFG** tree, select **Connections**.
- 4 On the **Configure** tab, enter or verify the server's **IP Address** and **Subnet Mask** for the BACnet/IP connection.
- 5 Restart the connection or the WebCTRL server.
- 6 On the **NET** tree, select the system level item.
- 7 Click **Discovery**.
- 8 Click **Go** to discover BACnet sites for the system. An item called **Discovered Networks** appears in the tree. When all sites are found, close the status dialog box.
- 9 To discover BACnet networks, select **Discovered Networks**, then click **Go**. A list of all BACnet networks appears in the **NET** tree. When all networks are found, close the status dialog box.

TIP Use the commstat manual command to determine which device routes to each network.
- 10 To discover BACnet devices on a network, select the network on the **NET** tree, then click **Go**. Click the plus sign beside an item to expand the list of devices. When all devices are found, close the status dialog box.
- 11 To discover BACnet objects on a device, select the device in the **NET** tree, then click **Go**. A list of all BACnet objects in this device appears on the **NET** tree. When all objects are found, close the status dialog box.

TIP Make sure you are discovering objects in the correct device. It may take some time to discover objects in devices with more than 100 objects.
- 12 Open SiteBuilder. If SiteBuilder was open during discovery, close, then reopen SiteBuilder to view the discovered items under the **Discovered Site**. Use the information you discovered to establish communication with the desired third-party objects using Network I/O or Display microblocks, then delete **Discovered Site**.
- 13 In WebCTRL, on the **Communications** tab, select the **Use Static BACnet Bindings** checkbox.
- 14 Restart the connection or the WebCTRL server.

NOTES

- Some third-party BACnet devices may not be discovered because they do not support the BACnet methods required for auto discovery.
- If the discovery process returns ambiguous information, such as multiple points with similar names, contact the third-party manufacturer's representative for clarification.
- Device configuration or network load can prevent WebCTRL from showing all BACnet devices. If you do not see a BACnet device that you expect to see, check the system's BBMD configurations. If the configurations are correct, try the discovery process again.

To format a BACnet address

Use the information below to format a valid BACnet address for the microblock you are using to read or write to a third-party or ALC BACnet object.

CAUTION When integrating third-party devices in a WebCTRL system, most communication problems are caused by incorrect data or typing errors in the microblock's Address field.

Address format: **bacnet://device/object/property@priority**



NOTE Numeric values in a BACnet address can be entered using decimal or hexadecimal notation. Type `0x` before a hexadecimal value.



Device - Use one of the following:

EXAMPLES

Device instance number

`bacnet://2010/...`

BACnet device name

`bacnet://MyDevice/...`

Network number: MAC address
(of third-party device)

`bacnet://1234:0x23/...`

The word "this" if a network point requests a value from another control program in the same ALC control module. Avoids network traffic. Requires v2.05 or later control module driver.

`bacnet://this/...`

2 Object - Use one of the following:**EXAMPLES**

Object type: Instance number
(See NOTES below)

bacnet://.../ai:2

BACnet object name

bacnet://.../MyObject

NOTES

- For object type, you may type the abbreviation, the full name, or the object type number. Some standard BACnet object type numbers are listed below. See the BACnet standard for a complete list. For proprietary BACnet objects, see the object's manufacturer.

Use...	Or...	Or...
ai	analog-input	0
ao	analog-output	1
av	analog-value	2
bi	binary-input	3
bo	binary-output	4
bv	binary-value	5
dev	device	8
msi	multistate-input	13
mso	multistate-output	14
msv	multistate-value	19

- Every object in a control module has a unique instance number, regardless of its control program.

3 Property (optional) If you want to read or write a property other than present_value, type one of the following:**EXAMPLES**

BACnet property identifier

bacnet://.../cov_increment

BACnet property identifier #

bacnet://.../22

Property identifier (with index)

bacnet://.../priority-
array(12)

Property identifier # (with index)

bacnet://.../87(12)

TIP For standard BACnet objects, see the BACnet standard for property identifiers and property identifier numbers. For proprietary BACnet objects, see the object's manufacturer.

 **Priority** (optional) If you want to write at a priority other than 16, type @ followed by a priority number. **EXAMPLE**

Number (1–16) `bacnet://.../.../...@9`

NOTE Priority levels 1 and 2 are reserved for manual and automatic life safety commands. For more information on reserved priority levels see the BACnet standard.

Examples of BACnet addresses:

`bacnet://MyDevice/ai:2`

`bacnet://1234:0x23/analog-input:2/priority-array(12)@8`

`bacnet://2499:0x00E0C90047CA/bi:3`

`bacnet://2436:192.168.47.36:47806/0:2`

Glossary

A

absolute path

A route, consisting of reference names, from the system level to a specific tree item. For example, /trees/geographic/atlanta_-_rd_facility/first_floor/zone_1/1stat.

Action pane

The right portion of the WebCTRL interface you use to view information and perform actions.

alarm

A message sent from an alarm source (usually a microblock in a control program) to WebCTRL to notify you that certain conditions exist, such as a piece of equipment has stopped running or a temperature is too high. When WebCTRL receives an alarm, it displays information about the alarm on the Alarms page. WebCTRL 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 action

An action that WebCTRL performs 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.

alarm incident group

All alarms related to a particular incident. For example, an alarm and its return-to-normal form an alarm incident group.

alarm message

The information WebCTRL displays on the Alarms page View tab.

alarm recipient instance

The BACnet instance number for the workstation where alarms are to be sent. **CAUTION** If you change the event recipient instance, you must download to ALL devices.

alarm source

A microblock in a control program that is set up to generate alarms.

APT

Access Port Transceiver. A mini-DIN connector module used to connect a computer to a control module or sensor. This device allows you to communicate with the control module network for troubleshooting or transferring memory.

ARCNET 156 kbps

Attached Resources Computer Network. Also called ARC156. A non-proprietary high-speed peer-to-peer token passing Local Area Network (LAN) protocol operating at 156 kbps. ARCNET can be used on twisted shielded cable networks, coaxial cable, and other physical media.

area

An item on the tree representing a physical location in the system such as a city, building, zone, or floor.

audit log

A record of operator and system activity stored in a text file or database.

B

BACnet

Building Automation and Control network. Data communication protocol designed for building automation to promote interoperability between different system vendors over several transport media.

BACnet device

A device that contains BACnet objects and program objects, and executes BACnet services.

BACnet device routers

(Also device half-router) A combination of a BACnet device and a BACnet router. A device router transfers messages from one network segment to another. It also contains BACnet objects and program objects, and executes BACnet services.

BACnet object

Every point or value in a BACnet system. These objects have both a name and a unique ID.

BACnet/Ethernet

Older BACnet protocol that uses RAW Ethernet frames to pass BACnet messages. Exec 6 gateways were only capable of this protocol since they were developed when BACnet/Ethernet was the standard.

BACnet/IP

Conventional BACnet protocol to use today when speaking BACnet over an Ethernet connection. BACnet/IP uses UDP/IP datagrams to pass BACnet messages. It's possible to run BACnet/Ethernet and BACnet/IP on the same physical wire without either being aware of the other. At the BACnet level, a BACnet/IP and BACnet/Ethernet network are logically separate networks even when they traverse over the same physical Ethernet segment.

BACnet/MSTP

Similar to BACnet/ARCNET, but more widely used low-speed protocol for devices. MSTP stands for Master-Slave/Token-Passing. This protocol is available in 9600, 38.4k, and 76.8kbaud speeds. In order to be BACnet/MSTP compliant, you are required to support 9600 baud. However most BACnet/MSTP vendors will support 38.4k. The 76.8k is not widely supported, but is supported by most (not all) of ALC's ExecB modules.

BBMD

BACnet Broadcast Management Device. A device that allows BACnet/IP (Annex J) communications across IP routers. Only one ALC control module per IP subnet can be defined as a BBMD. A BBMD contains a Broadcast Distribution Table (BDT) which lists the IP addresses of all other BBMDs on other network segments. Whenever a BACnet broadcast is received by a BBMD on its local network segment, it then forwards the message to the other BBMDs on its list using IP Directed Broadcasts. After receiving a Directed Broadcast from the transmitting BBMD, the receiving BBMDs then retransmit the message on their local segment as a BACnet broadcast.

Boolean logic

A form of algebra in which all values are reduced to either TRUE or FALSE.

bridge

Typically, a bridge is a component of local area network that connects two similar networks and may filter communications between those two networks.

broadcast

A network term for communications that are not addressed to any one device, but rather to all devices that can receive the message. Most peer-to-peer networks such as Ethernet, IP, ARCNET, and MSTP all support broadcast communications; each in their own unique way.

C

client

A computer that contacts a server and requests data such as files or web pages.

control

An object on a WebCTRL graphic that reads or writes information to or from your system, such as a status values, the date or time, a trend graph, or a setpoint control.

control module

The physical device (hardware) that controls a piece of equipment based on sensor inputs and the control program in the module's memory.

control program

Software that resides in a control module to monitor and control a piece of equipment in a building. Control programs are created in EIKON LogicBuilder. A control program consists of discrete logical functions (called microblocks) linked together to create logical sequences of operation and control. Editable properties for the control program can be changed in WebCTRL. A control program can generate alarms when defined conditions are met.

COV increment

Change-of-value increment. The smallest change in a microblock's present value that causes the control module to record a trend sample or to send the microblock's new present value to any COV subscribers. The change is measured against the microblock's last recorded trend sample or the last reported present value.

COV threshold

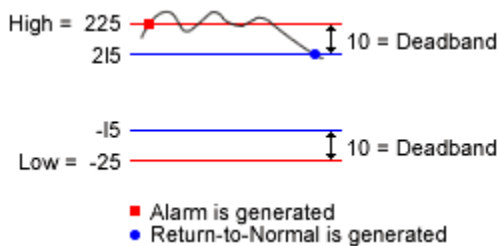
Change-of-value threshold. The smallest change in an analog network output microblock's value that causes the output to write a new value to its target. The change is measured against the last value written to the target.

custom report

Any report created with Report Designer, a tool that is furnished if your system has the advanced reporting package. You can create a custom report to collect specific information for a particular application, such as a summary report that calculates the power consumption for a building.

D**deadband**

The amount inside the normal range by which an alarm condition must return before a return-to-normal notification is generated.

EXAMPLE**default gateway**

The default router for all IP devices on an IP subnet to communicate to devices on other IP subnets. Typically, the router that connects an internal network to the Internet.

Demand Control

A strategy built into certain zone setpoint microblocks that allows the user to conserve energy by relaxing setpoints, rather than shutting down equipment, as the demand level rises in a building. You define the amount the setpoints are adjusted based on the demand level in EIKON LogicBuilder. The amount can be adjusted in WebCTRL.

description

An alphanumeric string that identifies an object to the user.

device

See control module.

DID

Device Id or Device Instance Number. This is a unique number in a BACnet system assigned to a BACnet module.

display name

The name WebCTRL displays for any object in the system (such as a tree location, operator, or microblock).

download

The process of transferring control program changes to the control modules. You can select the equipment to be downloaded and the type of download (memory, parameters, schedules, or BBMD).

duty cycle

A period of time during which equipment is alternately on and off.

dynamic binding

Dynamic binding is used when associating a Device Instance Number or Device Name with that device's network:MAC address using the BACnet "Who-Is" and "I-am" broadcasts.

dynamic IP address

Addresses that can be assigned temporarily from a pool of available addresses. Dynamic addresses can only be used on WebCTRL client computers, not servers or routers.

E**effective setpoint**

The value a control program is currently attempting to maintain (usually zone temperature) taking into account the programmed setpoint, Optimal Start, Demand Control, Timed Local Override, setpoint adjust, and hysteresis.

EIKON for WebCTRL

A Windows-based application used to graphically program, display, and interact with sequences of operation for equipment and systems. It features microblocks (representing discrete logical functions) interconnected on the screen by graphical wires to form logical connections.

EIKON LogicBuilder

A Windows-based application used to graphically program, display, and interact with sequences of operation for equipment and systems. It features microblocks (representing discrete logical functions) interconnected on the screen by graphical wires to form logical connections. EIKON LogicBuilder replaces EIKON for WebCTRL.

Ethernet

A high-speed local area network (LAN) developed by the Digital Equipment Corporation and Xerox Corporation. Ethernet networks transmit data at speeds up to 100 Mbaud.

Ethernet LAN routing

In many situations, a local area network (LAN) cannot cover all the devices in a system. This situation requires multiple LANs that connect to form a wide area network (WAN).

Ethernet is a media type commonly used for LANs. A BACnet system communicating over an Ethernet LAN can have multiple routers that communicate with their own subnets. The local Ethernet messages contain all addressing.

Exec

The software program that resides in a control module's Programmable Read-Only Memory (PROM). The firmware, or Exec, controls the processing of the control programs in the module.

expander module

A module that is added to an existing control module to add more input or output points. One or more expander modules connected to a base device is called a stack. Each expander has a unique address in the stack called the expander number.

expander number

A number that identifies which expander module an input or output point is physically wired to. Expander numbers are assigned by setting the DIP or rotary switches on the expander module, and are associated with the physical point using either the point microblock's dialog or the Properties page.

external IP address

IP address that allows a message to be routed across the Internet.

F

field codes

Text strings inserted into alarm messages, alarm actions, and archived alarm information to retrieve live data.

firewall

A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially intranets. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

firmware

The software program that resides in a control module's Programmable Read-Only Memory (PROM). The firmware controls the processing of the control programs in the module.

foreign device

If the WebCTRL server is on an IP network segment that does not have an ALC control module serving as a BBMD, the WebCTRL server must be set up as a foreign device and registered with a BBMD from which it will receive BACnet/IP broadcasts.

function block (FB)

See also control program.

G

gain

A multiplier that is used with an offset value to convert a raw analog sensor reading to the actual value. The gain property is used with the offset property to calibrate a point: Actual Value = (Raw sensor reading) x (Gain) + Offset

gateway

Provides a communications translation between the control module network and the WebCTRL Server or client.

global path

A path that begins with or entirely consists of a global reference name. For example, #zone_1 or #zone_1/1stat.

global reference name

A reference name that begins with a pound sign (#) and must be unique within the entire system.

graphic function block (GFB)

See also control program.

Graphic page

A page displayed in WebCTRL that graphically shows the current status of an area or piece of equipment. WebCTRL graphics include maps, building perspectives, thermographic floor plans, and equipment drawings.

H**heat and cool source/requests**

Terminal units (VAV boxes, fan terminal units, etc.) are the only pieces of equipment we recommend be scheduled (although the software will allow any equipment to be scheduled). Any other equipment that feeds it (chillers, AHUs, boilers, etc.) typically operates based on requests. Equipment that provides heating or cooling to a terminal unit or any other equipment is considered a heat or cool source.

hierarchy

The parent-child/tree structure of the system.

historic trends

Trend data that is written to the system database for long-term storage.

hotspot

An area or an object on a graphic in ViewBuilder that becomes a link to another page when the graphic is displayed in WebCTRL.

HTML

Hypertext Markup Language Programming language used to define a computer-human interface.

hysteresis

A microblock setting that indicates the amount by which the input value must rise above or fall below the trip point before the microblock's output is turned off. The hysteresis can prevent the microblock from changing its value too frequently when the input oscillates around the trip point. For example, if the trip point is 35 and the hysteresis is 2, the microblock's input must fall to 33 before the output turns off.

I**installed reports**

Reports that are built into WebCTRL.

internal IP address

IP address that allows a message to be routed to a segment on your local-area network.

InterOp

SuperVision v3.x systems.

IP address

An identifier for a computer or device on a TCP/IP network. Networks using the TCP/IP protocol route messages based on the IP address of the destination. The format of an IP address is a 32-bit numeric address written as four numbers separated by periods.

IP router

A device that connects any number of LANs. They communicate with each other to determine where packets go and the best route to get them there.

J**Java**

A cross-platform, open source programming language supported by standard browsers used to generate HTML pages.

JDBC

Java Database Connectivity. Enables any Java application to interact with any SQL-compliant DBMS. Because Java applications run on most platforms and because most relational databases support SQL, JDBC makes it possible to write a single database application that can run on different platforms and interact with different DBMS's. JDBC includes a JDBC-ODBC bridge so that it can also communicate with any ODBC-compliant application.

L

Learning Adaptive Optimal Start

A method used by certain Zone Setpoint microblocks to regulate setpoints so that the ideal temperature range can be achieved when building occupancy begins. The Learning Adaptive Optimal Start routine adjusts setpoints based on the heating or cooling capacity of the equipment, which is adjusted (or learned) over time as the equipment meets or fails to meet the ideal temperature range.

legacy

Previous generation ALC systems.

location-dependent security policy

A type of system security that allows you to assign privileges to an operator only at locations in the system where he needs them. With this type of security, you can also assign him privileges that apply through the entire system.

location-independent security policy

A type of system security that only lets you to assign privileges to an operator for the entire system.

Logic page

A page that displays the control program for a piece of equipment.

M

MAC address

While the IP address is a software address, the MAC address of a computer is the physical hardware address of your Network Interface Card (NIC), usually your Ethernet card. Each NIC on an Ethernet segment must have a unique address. The MAC address is hard-coded into the NIC at the factory.

manual command

A command that you execute in WebCTRL using the Command menu option. A manual command can navigate to another place in WebCTRL or it can execute an action.

microblock

A block of programming code that has a specific purpose and is represented by a graphic symbol. Microblocks are combined in EIKON LogicBuilder with wires and labels to create a control programs.

microblock pop-up

An interactive window used for viewing and modifying a microblock's properties.

microblock properties

User-defined values or settings that together define the characteristics of a microblock. See Microblock Reference Help.

mismatch

The condition that occurs when the values in a control module do not agree with those in the system database.

MS/TP

Master Slave/Token Passing scheme operated over an EIA-485 communications network. Master controllers must be aware of other controllers (both master and slave) on the network and pass a token that allows the recipient to initiate a BACnet message. Slave controllers only respond to master controllers.

N

NAT

Network Address Translation. An Internet standard that enables a local-area network to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. NAT provides a type of firewall by hiding internal IP addresses. NAT enables a company to use more internal IP addresses without conflicting with IP addresses used by other companies and organizations. NAT allows a company to combine multiple ISDN connections into a single Internet connection.

native BACnet

A system where all devices residing on any physical network segment communicate using the BACnet protocol. A non-native BACnet system may offer some access to another BACnet system through a BACnet gateway, but use a proprietary protocol between some system devices.

Navigation pane

The left portion of the WebCTRL interface used to navigate the system. The navigation pane consists of the navigation tree, the view buttons, and the button that shows alarms and schedules in the navigation tree.

navigation tree

The hierarchy of the system where you select the system object you want to view or act upon.

NITNA

A cable used to download default settings from NI485 to Tnet.

node

A basic element in the tree structure of a database, such as areas and equipment on the Geographic tree or routers and control modules on the Network tree. Nodes are arranged in a parent/child structure.

O**Object**

See BACnet object.

ODBC

Open Database Connectivity. Enables any ODBC-compliant software application to communicate with any ODBC-compliant DBMS.

offset

An additive factor that is used with a gain to convert a raw analog sensor reading to the actual value. The offset property is used with the gain property to calibrate a point: Actual Value = (Raw sensor reading) x (Gain) + Offset.

operating system

A set of commands that enables software applications to communicate with the computer system hardware. Software applications allow people to create, manipulate, and receive a variety of complex information such as text, audio, charts, and images. Besides enabling software and hardware to work together, most operating systems do three basic tasks—manage memory, process scheduling such as multi-tasking and time slicing, and control communication between hardware and software. For example, Microsoft Access.

operator

A user of the WebCTRL system, identified by a name and password.

operator group

Multiple operators that require the same privilege set.

Optimal Start

An algorithm used by certain zone setpoint microblocks to achieve desired zone temperature by the time building occupancy begins. The Optimal Start routine adjusts setpoints before occupancy based on the outside air temperature, the heating or cooling capacity of the equipment, and the amount of time remaining prior to occupancy.

P**path**

A route, consisting of reference names, from one item in the system to another.

port

TCP and UDP port numbers are software designations for particular types of network traffic from applications that speak TCP/IP or UDP/IP. Each recognized application that uses TCP or UDP has a different port number.

prime variable

A single number from a control program that best represents the control program's state. Generally, it is the value of some physical variable, such as temperature or airflow. For zone control, you might choose zone temp. For a chiller, it might be discharge water temp.

privilege

Permission to access a certain part of the system or perform a certain function. You assign privileges to a privilege set.

privilege set

A group of one or more privileges. You assign a privilege set to an operator to grant him its privileges.

programmed setpoint

The point at which mechanical cooling or heating equipment is enabled to maintain appropriate temperature in a zone.

Properties page

Pages in WebCTRL that allow you to make changes to the settings you want your system to maintain. They also reflect what the system is actually doing.

protocol

A set of rules and structure that governs how computer devices talk to one another.

R

reference name

A permanent name for a tree item that allows the item to be referenced from graphics, Properties pages, external spreadsheets, etc. A reference name consists of lowercase letters, numbers, hyphens, and underscores (no spaces), and it cannot begin with a number. In the system hierarchy, a reference name must be unique among its siblings, unless it is a global reference name that begins with a # sign.

RefName

See reference name.

relative path

A route, consisting of reference names, from the current tree item to another tree item. For example, first_floor/zone_1/lstat.

request

The method by which control programs communicate their heating and cooling needs to each other. By using requests you can construct a software "chain" mimicking the mechanical chain of equipment in the building. When properly constructed, requests allow you to schedule terminal or zone equipment only, and allow other equipment to respond to the zone requests.

return-to-normal

A message sent from an alarm source to WebCTRL when an alarm condition returns to its normal state.

router

Forwards data packets along networks. A router is connected to at least two networks, commonly two LANs or WANs or a LAN and its ISP's network. A router must have an IP address for each network it routes to. Routers determine the best path for forwarding the packets and configure the best route between any two hosts.

runtime

The amount of time a piece of equipment has been running.

S

schedule group

When scheduling, you can identify groups of equipment or zones that follow the same schedule. Use schedule groups to create schedules for related equipment in different areas or when you want to schedule only some of the equipment in a given area. Schedule groups can include other schedule groups. A schedule group can also include equipment or areas in different sites.

schedule priority and precedence

Priority describes the relative level of importance of a schedule to other schedules and is used in determining which schedule WebCTRL follows at any given time. Precedence describes the relative level of importance of a schedule to other schedules of the same priority.

schedules

A cost-saving WebCTRL feature that allows you to define when a building or zone is in a certain state, such as being occupied. Schedules allow the equipment to cycle on and off as necessary to maintain the programmed setpoints for that state.

segment

A network of up to 32 control modules on the same physical connection. A new segment begins with a REP485. The maximum length of a segment is 2000 feet (609.6 meters).

server

A computer that serves requested information, files, and other services to clients. A web server is a type of server that serves web pages. The WebCTRL server is a web server.

setpoint

A temperature value that is set by the user and maintained by the equipment. Cooling setpoint is the temperature at which cooling is enabled. Heating setpoint is the temperature at which heating is enabled. See also effective setpoint.

site

A separate TCP/IP (Transmission Control Protocol/Internet Protocol) network.

SiteBuilder

A cross-platform application used to generate engineering databases through a graphical and menu-based interface.

SNMP

Simple Network Management Protocol. Alarm action that sends an SNMP trap to a network. Some examples of monitoring software are HP Openview, Novell NMS, IBM NetView, or Sun Net Manager (contact Technical Support for more options).

SSL

Secure Sockets Layer. See *TLS* (page 227).

static binding

Static Binding is used when the network:MAC is already known and no BACnet broadcasts are used. WebCTRL can use static binding because it doesn't need BACnet broadcasts to tell it who it wants to talk to, it has a database with all that information already in it. When static binding is turned on, WebCTRL simply looks in its database for network:MAC information when communicating, foregoing the BACnet "Who-Is" broadcasts.

static IP

A specific IP address assigned to a WebCTRL server or router. A permanent IP addresses which do not change are called static IP addresses. A static IP address is usually obtained from the network administrator. WebCTRL server and BACnet routers must have static addresses.

status flag

Indicates the current state of a point. Valid flags are: 1=alarm, 2=fault, 4=override, and 8=out of service. Valid flag values can also include any sum of any combination of these numbers. For example, a point that goes into alarm and then out of service is assigned a status flag value of 9 (1+8).

subnet

(also known as IP subnet or IP network)

"Subnet" is not the same thing as the "Subnet Mask." In technical terms, a subnet defines the network portion of an IP address. The IP address of a device along with the subnet mask define the subnet. In laymen's terms, only devices on the same subnet can communicate with each other.

Communications with destination devices not on the same subnet must go through the Default Gateway for the subnet.

subnet mask

An IP address contains the network address and the computer (host) address. The subnet mask determines where the network address ends and the host address begins. For systems that use custom IP addressing, the IP address and subnet mask are usually supplied by the site IT administrator.

In laymen's terms, a subnet mask, along with the IP address of the communicating device, tells the communicating device if it can communicate directly with its destination device or if it must send communications to the default gateway IP address.

system

A group of modules accessed from a single database. A system can contain more than one site.

T**TCP**

Transmission Control Protocol. This is a session-based protocol that guarantees delivery of all information traversing across a network. TCP is used when incomplete information is simply not acceptable. There is an overhead with creating TCP sessions due to this guaranteed delivery.

thermographic colors

Colors on a floorplan or equipment graphic that indicate current conditions, such as too warm or too cool.

TLS

Transport Layer Security. A communication protocol that provides client/server authentication and 128-bit encryption of all transmitted data. TLS is a more recent version of SSL (Secure Sockets Layer).

trend graph

A graph that displays equipment status values over a period of time.

trend log

The object in a module containing the trend data (either the Trend microblock or the embedded trend object in I/O microblocks).

trip point

The value of the input that causes the output to change states.

V**value**

An assigned, sensed, or calculated numerical quantity associated with a point, event/alarm, or node.

ViewBuilder

A cross-platform application used to create WebCTRL graphics for WebCTRLv2.5 and forward. See also graphic.

ViewBuilder for WAP

A cross-platform application used to customize WebCTRL pages viewed on WAP-enabled devices.

W**WAN IP addressing**

Internet Protocol (IP) addressing is used on most WANs, including the Internet. Each LAN in the system is addressed as its own IP subnet.

Annex J of the BACnet Specification contains specifications for IP addressing. This is a true UDP/IP addressing model, allowing BACnet messages to be correctly handled by any Ethernet/IP router. By default, 's and 's used in WebCTRL systems are configured to support BACnet/IP addressing. This is also the default addressing protocol used by the WebCTRL server.

WAN routing

A wide area network (WAN) consists of two or more interconnected local area networks (LANs). The WAN may have several routers between the LANs that are not part of either LAN. These routers relay messages from one LAN to the other.

WAP

Wireless Application Protocol. A communications protocol that allows you to access your system through a wireless device, such as a telephone.

WebCTRL

A cross-platform web-based application that provides a graphical interface to a control network for common control modules and complex energy management functions. WebCTRL uses dynamic color graphics to communicate the operational conditions of a building, and accepts adjustments to controlled equipment's editable properties. WebCTRL provides alarm handling flexibility, including several alarm notification options and reporting actions.

WebCTRL client

A web-enabled device capable of browsing to the WebCTRL server.

WebCTRL extensions for FrontPage

Custom add-ons to Microsoft FrontPage® that allow the creation of WebCTRL graphics (v1.0 through v2.0 systems only). See also graphic.

WebCTRL Server

A server application that communicates with system control modules and generates the web pages that allow you to view or edit the system on a WebCTRL client.

WebDAV

Web-based Distributed Authoring and Versioning. A set of extensions to the HTTP protocol designed for managing remote server files through an Internet connection.

Index

A

- A typical WebCTRL system • 16
- absolute path • 219
- Access database • 139
- Access User Category privilege • 112
- action button • 21
- action pane • 21, 219
- Admin privilege set • 114, 115, 116
- advanced password policy • 125, 127, 155
- advanced reporting • 143
- advanced security • 151, 155
- Advanced topics and features • 123
- alarm actions • 69, 74, 93, 97, 107, 219
- alarm categories • 70, 98, 103
- alarm incident group • 219
- alarm messages • 70, 74, 97, 103, 112, 133, 151, 219
- Alarm Popup alarm action • 74, 76, 125, 131
- alarm recipient instance • 219
- alarm source • 219
- alarm templates • 97, 103, 112, 125, 133, 151
- alarms • 69, 219
 - acknowledging • 70
 - archiving deleted alarms • 125, 129
 - changing settings • 69
 - deleting • 70, 129
 - sounds for alarms • 119
 - viewing • 70
- APT • 219
- ARCNET • 210
- ARCNET 156 kbps • 219
- arcnet manual command • 177
- area • 219
- audit log • 70, 107, 112, 125, 151, 155, 219
- automatic logoff • 30, 116, 125, 127
- automatically collapse trees • 119
- autopilot • 185

B

- Back button • 21
- backing up database • 139
- BACnet • 219
- BACnet alarm recipient instance • 125
- BACnet binding conflicts • 125, 128
- BACnet device routers • 219
- BACnet devices • 16, 210, 216, 219
- BACnet object • 219
- BACnet routers • 16, 210
- BACnet/Ethernet • 220
- BACnet/IP • 133, 220
- BACnet/MSTP • 220
- BACview • 16, 19
- BBMD • 43, 177, 210, 220
- bbmd manual commands • 177
- binary schedule category • 54
- Boolean logic • 220
- bridge • 220

- broadcast • 220
- browser • 15, 16, 27

C

- category • 21, 54, 112
 - alarm • 70, 74, 97, 103
 - graphics • 35
 - trend • 64
- category privilege • 111, 112
- changing modes • 27
- Changing multiple microblock properties • 41, 59, 66
- Checkout Report • 107
- checkurls manual command • 177
- client • 220
- clipping • 133
- CMnet equipment • 125
- colors in WebCTRL • 21, 24, 25, 38
- compact the database • 139
- comstat • 177
- Configurable password policy • 7, 111, 127, 155
- control • 220
- control modules • 15, 27, 220
- control programs • 38, 39, 41, 220
- cool source • 107
- copy manual command • 177
- copying a path • 41
- Copying translation files to another system • 206
- cost-saving strategies • 45, 51, 121
- COV increment • 220
- COV threshold • 221
- Creating a custom schedule category • 55
- Creating a graphic for a multi-language system
 - using WebCTRL extensions for FrontPage • 199, 203
- Creating a non-English graphic in ViewBuilder • 202
- Creating a non-English system in SiteBuilder • 197, 204
- Creating control programs and translation files for a non-English system • 197, 199, 203, 205
- Creating graphics for a non-English system • 197, 199, 201
- CSV (Comma Separated Values) • 109
- custom reports • 18, 41, 143, 221
- Customizing alarms • 70, 97, 107
- Customizing graph appearance • 64

D

- database, system • 27
 - back up • 139
 - defragment • 140
 - maintenance • 139
 - minimize size • 141
 - type • 125, 139
- date format • 125
- Daylight Saving Time • 125, 130, 131
- deadband • 221

- default gateway • 221
- defragmenting the database • 140
- demand Control • 45, 48, 121, 221
- Design mode • 27
- Determining the number of third-party points used in a system or control module • 207
- device • 221
- device ID • 128
- dial-up connection • 83
- DID • 221
- disconnect manual command • 177
- display name • 35, 221
- download • 24, 43, 52, 112, 128, 130, 151, 221
- download manual commands • 177
- Downloading system changes to control modules • 43, 53
- driver • 112, 130, 177
- duty cycle • 221
- dynamic binding • 221
- dynamic IP address • 221

E

- editing a graphic • 37
- Editing an EIKON for WebCTRL control program in EIKON LogicBuilder • 206
- Editing the GEO or NET tree • 7, 133
- Editing translation files, control programs, or graphics for a non-English system • 199, 205
- effective setpoint • 221
- EIKON for WebCTRL • 221
- EIKON LogicBuilder • 7, 10, 19, 22, 38, 39, 45, 54, 69, 93, 97, 177, 197, 210, 222
- energy consumption • 45, 121
- Equipment Summary • 143
- Equipment Values • 144
- error indicator • 21, 29
- errors • 24, 29, 187
- Ethernet • 222
- Ethernet LAN routing • 222
- event recipient instance • 125
- Example using Web services to retrieve a WebCTRL report • 162, 173
- Example using Web services to retrieve trend data • 160, 169
- Example using Web services to retrieve values • 159, 166
- Example using Web services to set a value • 159, 163
- Exec • 222
- expander module • 222
- expander number • 222
- extensions for FrontPage • 199, 201
- external IP address • 222

F

- field Codes • 103, 222
- firewall • 222
- firmware • 222
- floorplans • 24
- font • 64, 198, 204
- foreign device • 222

- Format field codes • 102
- function block (FB) • 222

G

- gain • 222
- gateway • 222
- Getting to know the WebCTRL workspace • 21
- global copy • 41, 42, 57, 64, 177
- global modify • 35, 38, 39, 41, 103
- global path • 223
- global reference name • 223
- go manual commands • 177
- graphic function block (GFB) • 223
- graphics • 19, 22, 35, 197, 210
 - attaching graphic files • 36, 133
 - category • 35, 112
 - editing • 37
 - size • 23, 35
- Graphics button • 35
- Graphics pages • 33, 35, 46, 223
- Graphing data for multiple points • 59

H

- Hardware options with Network I/O microblocks • 211, 213, 214
- heat and cool source/requests • 223
- Help button • 21
- hierarchical servers • 51, 53, 116, 125, 151
- hierarchy • 223
- historical trends • 57, 125, 129, 141, 223
- Historical Trends Report • 107
- hotspot • 223
- HTML • 223
- HTTP • 125
- hysteresis • 223

I

- icons • 22
- If an item fails to download • 43, 44
- If you upgraded alarms from v2.0 or earlier • 99
- index • 54
- installed reports • 223
- Installing a language pack • 197, 204
- Integrating a third-party BACnet system • 207, 210
- Integrating a third-party non-BACnet system • 207, 209
- internal IP address • 223
- Internet browser • 15, 16, 27
- InterOp • 223
- IP address • 125, 177, 223
- IP router • 223

J

- Java • 223
- JDBC • 223

K

- keyboard shortcuts • 62, 133

L

- labels • 39
- language pack • 197
- languages • 119, 197
- Learning Adaptive Optimal Start • 224
- legacy • 224
- links • 22, 29, 35
- local privileges • 151, 152, 154
- location-dependent operator access • 18, 111, 115, 125, 127, 133, 151
- location-dependent security policy • 224
- location-independent operator access • 111, 151
- location-independent security policy • 224
- logging in • 27, 111, 116, 119
- logging out • 30, 116, 127, 177
- Logic pages • 33, 34, 39, 45, 112, 224
- login • 27, 74, 116, 125, 157
- login name • 116
- login, failed • 125, 127

M

- MAC address • 224
- maintenance • 139
- Managing files on a remote WebCTRL server • 189
- manual commands • 43, 130, 137, 138, 177, 224
- Manual Commands/Console Operations privilege • 112, 177
- markdownload manual commands • 177
- memory • 43, 57
- memory downloads • 133, 177
- menu button • 21
- menu commands • 21
- Methods for using WebDAV • 189
- microblock paths • 41
- microblock pop-up • 33, 35, 38, 39, 177, 224
- microblock properties • 33, 35, 38, 41, 224
- microblocks • 33, 35, 38, 39, 224
- minimize database size • 141
- mismatch • 43, 107, 125, 128, 177, 224
- modems • 74, 93, 177
- modstat • 177
- modstat manual commands • 177
- module memory • 57
- Module Version Report • 107
- MS/TP • 210, 224
- MSDE database • 127, 139
- multi-state schedule category • 54
- My Settings • 74, 119, 151
- MySQL database • 127, 139

N

- NAT • 76, 224
- native BACnet • 224
- Navigating the system • 8, 22
- navigation pane • 21, 224
- navigation tree • 21, 225
- Navigation tree icons • 7, 22
- navigation, WebCTRL • 21
- Network I/O vs. Display microblocks • 210, 213
- network number • 128, 216

- Network Status Report • 107
- NITNA • 225
- node • 225
- node name • 125
- non-English system • 197
- Normal mode • 27
- Notify all users • 30
- notify manual command • 177

O

- Object • 225
- object instance • 210
- ODBC • 225
- offset • 225
- operating system • 225
- operator access • 111, 151, 155
- operator groups • 111, 116, 225
- operators • 111, 116, 151, 153, 225
- Operators and operator groups • 9, 111, 116, 153
- optimal Start • 45, 46, 51, 121, 225
- Oracle database • 127, 139

P

- parameters • 43
- paramupload manual command • 177
- password • 27, 111, 116, 119, 155
- password policy • 117, 125, 127, 155
- paths • 41, 225
- Point List • 107
- port • 225
- PostgreSQL • 127, 139
- Preparing your workstation for non-English text • 197, 198
- prime variable • 225
- Print alarm action • 74, 195
- priority level • 52
- privilege set • 111, 114, 116, 151, 152, 153, 225
 - assigning to an operator • 117, 118, 153
- privileges • 9, 41, 111, 112, 114, 151, 152, 225
- Privileges and privilege sets • 152
- programmed setpoint • 225
- Propagate To Server alarm action • 74, 80
- properties • 38, 39, 41
- Properties pages • 33, 34, 38, 39, 225
- protocol • 16, 209, 225

R

- rebootserver manual command • 177
- rebuild manual command • 177
- Recording and viewing reasons for changing
 - equipment properties (21 CFR Part 11) • 155, 159, 164, 194
- reference name • 226
- RefName • 226
- relative path • 226
- reload control programs • 177
- reload manual command • 177
- remote data retrieval • 157, 169
- remote file management • 127, 189
- report categories • 143

- reports • 8, 59, 70, 107
 - custom • 143
- request • 226
- reset to defaults • 39
- restartmodule manual command • 177
- Restricting access in the system • 154
- return-to-normal • 226
- right-click menus • 23
- rnet here manual command • 177
- router • 226
- Run External Programs alarm action • 74, 80
- Running WebCTRL Server • 27
- Running WebCTRL Server as a Windows service • 27, 195
- Running WebCTRL's autopilot • 9, 185
- runtime • 226

S

- schedule • 43, 51, 52, 54, 121, 226
 - categories • 54
 - deleting expired schedules • 125, 129, 141
 - occupancy • 52, 54
 - reports • 107
 - setting up • 51, 52
 - viewing • 52
- schedule group • 53, 226
- schedule priority and precedence • 226
- secure socket layer (SSL) • 157, 191
- Security Assignments Report • 151, 154
- Send Alphanumeric Page alarm action • 74, 81
- Send E-mail alarm action • 8, 74, 83, 107
- Send SNMP Trap alarm action • 74, 86
- sequence of control • 33
- Server • 16, 27, 226
- service packs and patches • 115
- setdefault manual command • 177
- setgcm manual command • 177
- setpoint optimization • 45, 50, 121
- Setpoints • 45, 226
- Setting up alarm actions • 8, 18, 70, 74, 96, 97, 98, 107
- Setting up an alarm source in WebCTRL • 70, 93, 98, 107
- Setting up schedules • 52
- Setting up your system for non-English languages • 119, 197
- shortcuts, mouse and keyboard • 62, 133
- Show/Auto-hide button • 21
- showhistory manual command • 177
- shutdown manual command • 27, 177
- site • 226
- site properties • 131
- SiteBuilder • 11, 19, 227
- SNMP • 74, 227
- SOAP • 16, 112, 157
- spreadsheet data retrieval • 157
- SSL • 157, 191, 227
- starting location • 119
- starting the WebCTRL Server • 27
- static BACnet bindings • 125, 128, 215
- static binding • 227
- static IP • 227

- status flag • 227
- status values • 33, 57
- subnet • 227
- subnet mask • 227
- SuperVision support • 13
- Supported WebCTRL features • 191
- synchronize time • 43, 125, 129, 131
- system • 227
- system database • 27, 133
 - back up • 139
 - database type • 125, 139
 - defragment • 140
 - maintenance • 139
 - minimize size • 141
- system language • 204, 125, 205
- system maintenance • 139
- system name • 125
- System Settings • 54, 58, 73, 125, 155
- System-wide alarms button • 21
- system-wide privileges • 151, 152

T

- tab • 21
- TCP • 227
- TCP ports • 76, 83
- TCP/IP • 16
- thermographic colors • 25, 107, 227
- third-party integration • 207
- time format (12-hour or 24-hour) • 125
- time synchronization • 43, 125, 129, 131
- time zones • 129, 131
- timesync manual command • 177
- TLS/SSL • 157, 191, 227
- To access custom reports from WebCTRL v2.5 or earlier • 149
- To acknowledge alarms • 72
- To add a custom schedule category in WebCTRL • 55
- To add a privilege set • 153
- To add or edit a privilege set • 115
- To add or edit an operator • 117
- To add or edit an operator group • 118
- To add, edit, or delete a trend category • 67
- To apply a schedule to a group of equipment • 9, 53, 76, 79, 80, 81, 82, 84, 87, 88, 89, 91, 93
- To apply a schedule to equipment • 52, 54
- To assign alarm actions to alarm sources • 75
- To assign privilege sets to an operator • 153
- To attach a graphic in WebCTRL • 7, 36, 134
- To back up your system • 138, 139
- To change colors, line styles, and marker types • 65
- To change My Settings • 21, 111, 117, 119
- To change programmed setpoints • 45, 46
- To change properties, alarms, or trends in a microblock pop-up • 39
- To collect trend data for a point • 57, 59, 60, 108
- To compact the database and defragment the server's hard drive • 140
- To copy a trend graph's properties • 66
- To create a comparison trend graph • 60
- To create a PDF, Excel spreadsheet, or CSV file • 109, 143, 148

- To create and implement a translation file • 200, 206
 - To create your system • 204
 - To delete a comparison trend graph • 61
 - To delete a local privilege set assignment • 153
 - To delete a privilege set • 115
 - To delete alarms • 73
 - To delete an operator • 118
 - To delete an operator group • 118
 - To determine the number of third-party points used in a system • 207
 - To determine the number of third-party points used in an ME-LGR or LGR • 209
 - To dial up a System using WAP • 192
 - To discover BACnet networks, devices, and objects • 215
 - To edit a bundled resource • 206
 - To edit a comparison trend graph • 60
 - To edit a graphic on a WebCTRL client • 37
 - To edit graph properties • 64
 - To edit or delete a custom report • 148
 - To edit or delete a schedule • 54
 - To enter a key term in EIKON LogicBuilder • 199
 - To format a BACnet address • 214, 216
 - To import a clipping • 133, 134
 - To install an add-on report • 108, 109
 - To install WebCTRL Server service • 195
 - To integrate using Display microblocks • 213
 - To integrate using Network I/O microblocks • 9, 213
 - To locate a microblock, section, or label on a Logic page • 8, 39
 - To log off an operator • 30
 - To minimize the database size • 141
 - To navigate the System • 193
 - To organize custom reports • 143, 144, 146, 148
 - To organize multiple graphics for a single tree item • 35, 37
 - To perform downloads from a Properties page or a microblock pop-up • 44
 - To perform downloads from the Download page • 43
 - To print a trend graph • 63
 - To print the action pane • 24
 - To receive audible notification of alarms • 74
 - To register your WebCTRL software • 115, 137
 - To remove WebCTRL Server service • 196
 - To replace the license when adding features • 138
 - To resolve a mismatch • 44, 45
 - To run a report • 109
 - To run a system • 27
 - To run a system without connecting to the control modules • 29
 - To run WebCTRL's autopilot • 187
 - To run WebCTRL's autopilot with Windows Vista • 187
 - To send a message to logged in operators • 30
 - To set an operator's language in WebCTRL • 197, 205
 - To set language preferences • 204
 - To set up a computer and browser to view WebCTRL • 27, 28
 - To set up site properties • 131
 - To set up the WebCTRL service to print to a network printer • 196
 - To set up WebCTRL's autopilot • 185, 187
 - To set up, edit, or disable alarm sources • 94
 - To show or hide the navigation pane • 23
 - To shut down a system • 31
 - To simulate an alarm • 75, 96
 - To start WebCTRL Server as a Windows service • 195
 - To switch to a different system • 30
 - To switch to location-dependent operator access • 151
 - To transfer trend data to a table format • 63
 - To use WebDAV • 189
 - To view a custom report • 147
 - To view a Logic page • 39
 - To view a trend graph • 61
 - To view alarms in WebCTRL • 71
 - To view all instances of an alarm source • 97
 - To view and edit Alarms • 194
 - To view and edit equipment properties • 194
 - To view or change properties on a Properties page • 8, 38
 - To view schedules • 52
 - To view, edit, or delete a schedule category • 56
 - Tools for viewing trends • 62
 - translation file • 199, 205
 - trend data • 40, 57, 59, 61, 129, 143, 157
 - trend graph • 59, 61, 64, 228
 - trend log • 228
 - Trend Samples • 146
 - trends • 9, 41, 57
 - copying • 59
 - enabling historian • 57
 - historical • 57, 61, 107, 129, 141
 - viewing • 61
 - trip point • 228
 - troubleshooting • 33, 39, 40
- ## U
- uploading • 43, 107, 128
 - Use Global Copy to copy multiple properties to similar control programs • 8, 42, 178
 - Use Global Modify to view and change the same property in multiple microblocks • 8, 35, 38, 40, 41
 - Using field codes • 76, 79, 80, 81, 82, 83, 87, 88, 89, 90, 91, 92, 98, 101
 - Using right-click menus • 23
 - Using schedule categories • 52, 54
 - Using the Logic page as a troubleshooting tool • 40
 - Using trend graphs • 61
 - Using Web services to retrieve or change data • 157
 - Using wireless devices with WebCTRL • 191
- ## V
- value • 228
 - ViewBuilder • 12, 19, 228
 - ViewBuilder for WAP • 19, 228

Viewing, acknowledging, and deleting alarms • 70,
98, 107
Virtual BACview • 13

W

WAN IP addressing • 228
WAN routing • 228
WAP • 191, 228
WAP devices • 191
Web services • 9, 18, 157
WebCTRL client • 16, 28, 228
WebCTRL data access using SOAP • 158
WebCTRL design tools • 19
WebCTRL editions • 17
WebCTRL extensions for FrontPage • 199, 201,
228
WebCTRL navigation • 21
WebCTRL navigation tree • 21
WebCTRL privilege requirements • 158
WebCTRL reports • 107
WebCTRL Server • 16, 27, 228
 changing systems • 27
 restarting • 27
 shutting down • 27
 starting • 27
WebCTRL Server BACnet device instance • 125
WebCTRL tools • 19
WebDAV • 127, 189, 228
WebPRTL • 16, 209, 210
What is WebCTRL? • 15
What's new in v4 • 7
whoson manual command • 177
Windows service • 27, 195
Working with equipment • 33
Write Property alarm action • 74, 87
Write to Database alarm action • 74, 88
Write to File alarm action • 8, 74, 92, 107

Z

zones • 33, 45
Zooming and resizing contents of the action pane •
23