



United Technologies
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i-Vu® Pro v6.0 Owner's Guide



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

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Accessing your system

Your system details

Network Name: To access the system, launch Internet Explorer and type in
http://_____.


- Your Login Name is _____.
- Your Password is _____.
- Your i-Vu®'s IP address is _____.

To change your password

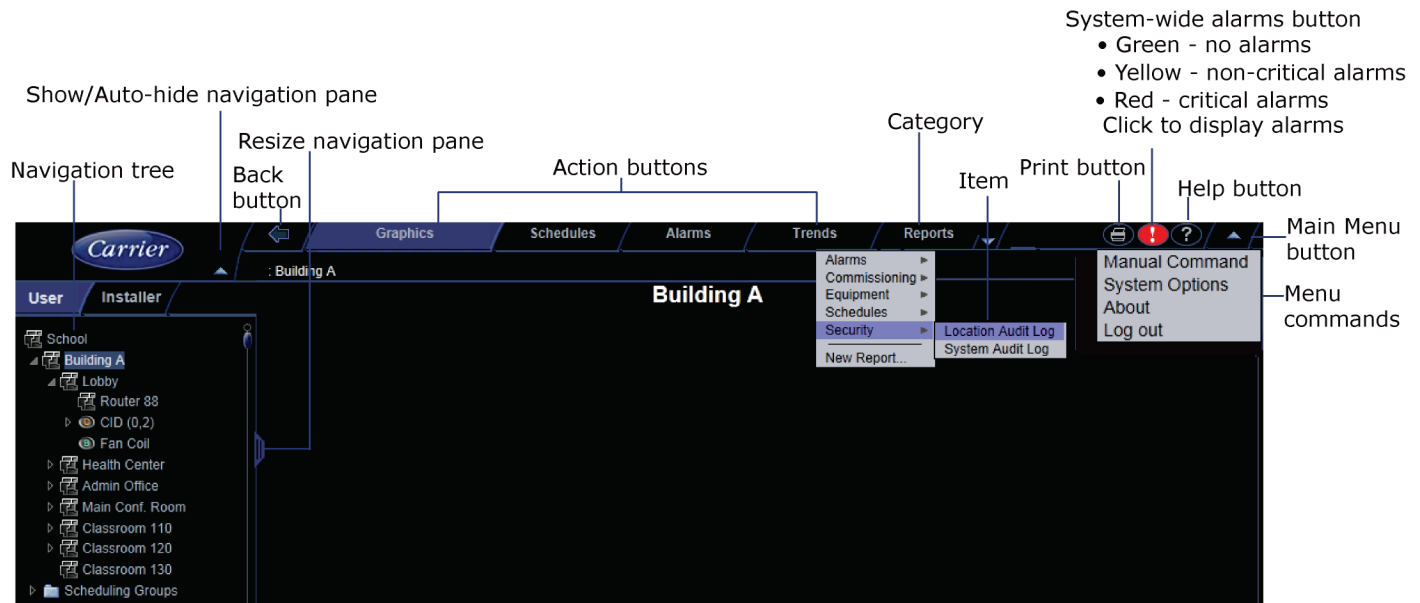
- 1 Click the **Main Menu** button , select **System Options > My Settings** tab.
- 2 Click **Change password**.
- 3 Enter any combination of characters. Limit of 40 characters.
- 4 Click **Apply** or **OK**.

Add an additional operator

To keep track of your Operators, use the space provided in the back of your Owner's Manual.

- 1 Click the **Main Menu** button , select **System Options > Operators** tab.
- 2 Add additional operators with appropriate access roles.
- 3 Keep a record of your additions and changes.
- 4 Click **OK** or **Apply**.

Getting to know the interface



NOTES

- After you log in, you will see the page defined as your starting location on the **My Settings** page. To change your opening page, see *To change My Settings* (page 61).
- Use only the i-Vu® interface to navigate; do not use the web browser's navigation buttons.
- Disable all popup blockers. **IE > Tools > Turn Off Popup Blocker.**
- Click on any tab to refresh the page.
- Roles and privileges control what an operator can see or do in the i-Vu® system. If you cannot see or do something that you read about in Help, ask your System Administrator to check your role and privileges.

Navigation trees

User tree

This tree lets you navigate through the i-Vu® interface using the system's geographic layout. You set this up on the Installer tab under **Arrange User View**.

Installer Tree

This tree lets users with the appropriate privileges navigate through the i-Vu® interface using the system's network layout.

Schedule Groups tree

On this tree, you can create groups that can consist of areas, equipment, or other groups. You can then assign a schedule to the entire group instead of the individual items. See *To apply a schedule to a group of items* (page 22).

System Options tree

Click **Main Menu** ▼ > **System Options** (page 61) for the setup and maintenance of your system. Most of the items on this tree are used for the setup and maintenance of your system.

My Settings	Lets you change settings that are specific to you such as your password, viewing preferences and contact information. See <i>To change My Settings</i> (page 61).
System Settings	Contains the system-wide settings that control the way the i-Vu® system runs. See <i>System Settings</i> (page 62).
Operators Privilege Sets Operator Groups	Lets your system administrator define operators and what they can see and do in the i-Vu® interface. See <i>Operator access</i> (page 7).
Categories	Lets you define categories for <i>schedules</i> (page 25), <i>alarms</i> , <i>graphics</i> (page 32), <i>properties</i> , <i>trends</i> , and <i>reports</i> . Categories allow you to view or control groups of similar items.
Connections	Lets you set up, start/stop, and troubleshoot your network connections. See <i>Setting up networks</i> .
Services	Shows internal processes of the i-Vu® application for troubleshooting.
License Administration	Lets you update your i-Vu® license. See <i>To register your i-Vu® software</i> (page 70).
Update	Click Update to select and apply patch, service packs, drivers, language packs, graphics libraries, and Help updates.
Client Installs	Lets you install applications that are to run on client computers.


Navigating the system

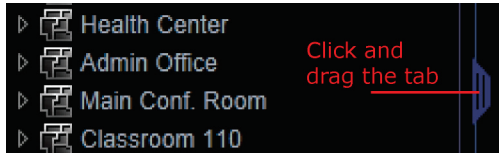
To navigate in the i-Vu® interface:

- 1 Select the item you want in the navigation tree.
 - 2 Select the action buttons and their drop-down menus.
 - 3 Use the tabs to filter the information further.
 - 4 Click links on **Graphics** and **Properties** pages to jump to related pages and open microblock popups.
- NOTE** Use only the i-Vu® interface to navigate; do not use the browser's navigation buttons.
- 5 Click on any tab to refresh the page.

To show, hide, or resize the navigation tree



- Click  at the top of the navigation tree to hide or show the tree.
- Click and drag the tab on the right side of the tree to adjust its width.



- In the **Installer** view, click and drag the tab at the top of **Arrange User View** to adjust the height of the window.

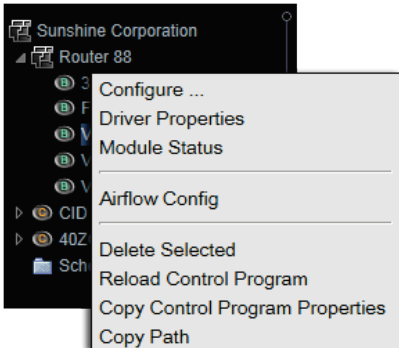
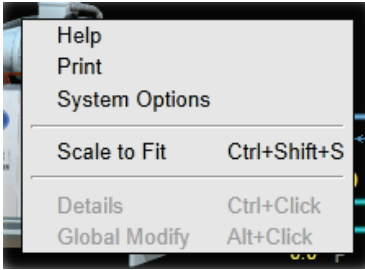
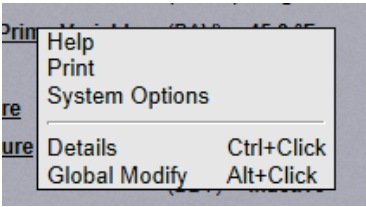
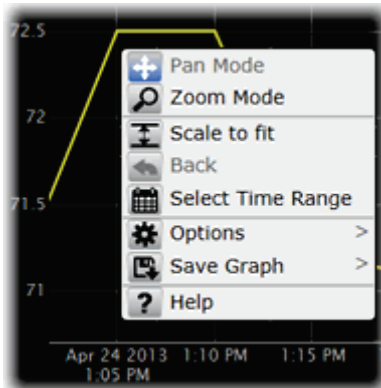


Zooming in and out


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

Using right-click menus

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

A tree item	The action pane
	
A property	A trend
	

To print the action pane













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

TIPS

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

The following colors indicate equipment status the i-Vu® interface. These colors are visible on graphic pages and in the setpoint graphs.

Color	Color Name	Status Code	Condition Indicated
	Purple	0 or 15	No communications
	Charcoal	14	In equipment—a device has stopped
	Coral	13	Control program error
	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
	Grey	1	Unoccupied/inactive
	White	10	Occupied/active
	Light green	6	Free cooling
	Green	5	In a controller—operational or operational read only In equipment—No heating or cooling







Colors and setpoints

The color of the equipment color control indicates how much a zone's actual temperature differs from its setpoints.

Three conditions may affect a zone's color:

- Setpoint adjust
- Local override
- Deadband

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

If you normally see...	when the zone temp is...	but...	then you will see...
green 	72.5°	someone adjusts the setpoints (for example, with a setpoint adjust of two degrees, the new setpoints would be 68 and 72°)	yellow 
gray 	73° (unoccupied)	someone presses the Override button on a zone sensor to use the occupied setpoints	green 
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 

Operator access

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

To set up operator access to your system:

- 1 Log in to the i-Vu® application as the Administrator. See *Operators and operator groups* (page 11).
- 2 Define privilege sets by job function. See *Privilege sets* (page 8).
- 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 11).

An operator can change many of his operator settings on the *My Settings page* (page 61).

NOTE A Guest operator can only change their contact information, not their password.

To access the i-Vu® interface, an operator must enter his user name and password. You can increase password security by setting rules for passwords in the *advanced password policy* (page 17).

Restricting operator access

To restrict access to your system, you can:

- Restrict an operator's privileges
- Use *location-dependent operator access* (page 15)
- Change a microblock's **Editing Privilege** from **Preset** to a specific privilege. The microblock's properties will be editable only by an operator that has that privilege.

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

Privilege sets

A privilege set is a group of one or more *privileges* (page 8). The Administrator creates privilege sets and assigns them to operators and operator groups.

Privileges

This privilege...	allows an operator to...
System Administration Privilege	<ul style="list-style-type: none"> Add, edit, and delete operators, operator groups, and privilege sets. Update the i-Vu® system with service packs and patches. Register the i-Vu® software. See <i>To register your i-Vu® software</i> (page 70). Enable and set up advanced security features such as <i>location-dependent operator access</i> (page 15) and the <i>advanced password policy</i> (page 17). Add and remove i-Vu® add-ons such as EnergyReports.

This Access privilege...	allows an operator to access (but not edit)...
Access System Tree	the Installer view pages.
Access Control Program Items	tables in the navigation tree or Properties pages.
Access Scheduling Groups	pages in the User view navigation tree for Schedule Groups.
Access System Options Items	under Main Menu ▼ > System Options .
Access Alarms	alarms.

This Parameter privilege...	allows an operator to edit properties such as...
Edit Setpoint Parameters	occupied and unoccupied heating and cooling setpoints.
Edit Setpoint Tuning Parameters	demand level setpoint offsets, color band offsets, heating and cooling capacities and design temperatures, color hysteresis, and learning adaptive optimal start capacity adjustment values.
Edit Tuning 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.

This Parameter privilege...	allows an operator to edit properties such as...
Edit Trend Parameters	enable trend logging, log intervals, and log start/stop times.
Edit Calibration Parameters	point calibration offsets.
Edit Hardware Controller Parameters	module driver properties.
Edit Critical Configuration	critical properties the installer protected with this privilege.
Edit Area Name	area display names.
Edit Control Program Name	equipment display names.
Edit Alarm Configuration	enabling/disabling alarms and editing alarm messages, actions, categories, and templates.
Edit Status Display Tables	tables available under Status.
Edit Maintenance Tables	tables available under Maintenance.
Edit User Config Tables	tables available under User Config.
Edit Service Config Tables	tables available under Service Config.
Edit Setpoint Tables	tables available under Setpoint.
Edit Time Schedule data Tables	tables available under Time Schedule.

This Functional privilege...	allows an operator to...
Manage Alarm Messages and Actions	add, edit, and delete alarm messages and actions.
Maintain System Parameters	edit all properties on the System Options pages.
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.
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 Location Audit Log and System Audit Log reports.
Download Controllers	mark equipment for download and initiate a download.
System Shutdown	issue the Shutdown manual command that shuts down i-Vu® Server.
Engineer System	<ul style="list-style-type: none"> • log in and make database changes in SiteBuilder. • use the copy, notify, reload, and revert manual commands. • access the navigation tree right-click menus in i-Vu®. • Add text in the Notes field on an equipment's Properties page.

This Functional privilege...	allows an operator to...
Access Commissioning Tools	access: <ul style="list-style-type: none"> • 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 i-Vu® data through an Enterprise Data Exchange (SOAP) application.
Do not audit changes made using SOAP (Web services)	not have his SOAP (Web services) changes recorded in the Audit Log.
Manual Commands/Console Operations	access the manual command dialog box and issue basic manual commands.
Manual Commands/File IO	execute manual commands that access the server's file system.
Manual Commands/Adv Network	execute manual commands that directly access network communications.
Manual Commands/Unrestricted	execute manual commands that bypass all safeguards and may cause unpredictable results if used incorrectly.
Change My Settings	edit preferences on operator's My Settings page.

To create a custom privilege

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

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


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

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

To add or edit a privilege set

- 1 On the **System Options** tree, select **Privilege Sets**.
- 2 Click **Add** to create a new privilege set, or select a privilege set to edit.
- 3 Type the **Name** and **Reference Name** for the privilege set.
- 4 Check each *privilege* (page 8) that you want to include in the privilege set.
- 5 Click **Accept**.

 **CAUTION** Include all required access privileges in a privilege set. For example, if you add **Acknowledge Non-Critical Alarms** to a privilege set, also add **Access Alarms** to that privilege set.

 **TIP** (Location-independent security only) To create a privilege set that is similar to an existing set, select the existing set, then click **Add**. The privileges that are initially selected are identical to those of the existing set.

To delete a privilege set

- 1 On the **System Options** tree, select **Privilege Sets**.
- 2 Select the privilege set to be deleted.
- 3 Click **Delete**.
- 4 Click **OK**.
- 5 Click **Accept**.

Operators and operator groups

The Administrator (see "Default operators" below) sets up each operator in the i-Vu® interface by entering the necessary settings and assigning one or more *privilege sets* (page 8) 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.


Default operators

A i-Vu® system has the following default operators:

Operator...	Has ...	To log in...
Administrator	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 i-Vu® administrative functions, assign the Admin privilege set to at least 2 operators.

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

To add or edit an operator

- 1 On the **System Options** tree, select **Operators**.
- 2 Click **Add** to enter a new operator, or select an operator to edit his settings.
- 3 Enter information on this page as needed. See table below.
- 4 Click **Accept**.

Field	Notes
Login Name	The name the operator must type to log in to the system. This name must be unique within the system.
Change password	Enable this field, then type the current and new passwords. NOTE An operator can change his password on the <i>My Settings page</i> (page 61), unless they have the Guest System-wide Privilege Set.
Force User to Change Password at login?	Forces the operator to change his password immediately after his next login. NOTE Use this field with the Change Password field to create a temporary password that the operator must change after his next login.
Exempt From Password Policy	If Use advanced password policy is enabled on the System Settings > Security tab (page 65), select this option if you do not want the policy to apply to this operator.
Logoff options	If Log off operators after ___ of inactivity is enabled on the System Settings > Security tab (page 65), 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 <i>My Settings page</i> (page 61).

Field	Notes
Starting Location and Starting Page	The i-Vu® location and page that will be displayed after the operator logs in.
System-wide Privilege Sets	<p>Select the privilege set(s) that you want to assign to the operator. The Effective System-wide Privileges list show which privileges the operator will have.</p> <p>NOTES</p> <ul style="list-style-type: none"> Click Show current privileges only to see only the selected privilege sets and privileges. A grayed out privilege set with a group name beside it indicates the operator is inheriting that privilege set from the group.



TIP To test the settings and privileges that you gave to an operator, you can open a second browser session on your computer and log in as the operator. For instructions on opening a second session in the browser you are using, see *Setting up i-Vu® client devices and web browsers* (page 55).

To delete an operator

- 1 On the **System Options** tree, select **Operators**.
- 2 Select the operator.
- 3 Click **Delete**.
- 4 Click **Accept**.

To add or edit an operator group

- 1 On the **System Options** tree, select **Operator Groups**.
- 2 Click **Add** to create a new operator group, or select an operator group to edit it.
- 3 Type the **Display Name** and **Reference Name** for the operator group.
- 4 Under **Members**, select the operators and/or groups that you want to add to the new group.
- 5 Under **Privilege Sets**, select the *privilege sets* (page 8) that you want to assign to the new group.


NOTE To see what privileges are included in a privilege set, go to the **Privilege Sets** page and then select the privilege set in the table.
- 6 Click **Accept**.



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

To delete an operator group

- 1 On the **System Options** tree, select **Operator Groups**.
- 2 Select the operator group.
- 3 Click **Delete**.
- 4 Click **Accept**.

 **CAUTION** When you delete an operator group, its individual members lose the privilege sets that were assigned to the group.

Advanced security

Location-dependent operator access

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.

i-Vu® 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 7) for more information on location-independent operator access.

To switch to location-dependent access



CAUTIONS

- Create a backup of your system before you begin. Switching to location-dependent operator access changes the configuration of operators and privilege sets. If you need to revert to location-independent operator access, your previous configuration cannot be automatically restored.
- If you change the policy after you create and assign privilege sets to operators, you may need to reconfigure your operators' privileges.

To switch to location-dependent operator access:

- 1 On the **System Options** tree, select **System Settings**.
- 2 On the **Security** tab under **Security Policy**, click **Change Policy**.
- 3 Follow the on-screen instructions.

Privileges and privilege sets

When using location-dependent operator access, privileges are either system-wide or local.

System-wide privileges allow an operator to perform functions throughout the entire system, such as performing a system shutdown.

Local privileges allow an operator to perform functions in a specific area of the system, such as editing setpoints or viewing alarms. Assigning any local privilege to an operator also allows him to change his password and set preferences on his *My Settings* (page 61) page.

You assign system-wide privileges to system-wide privilege sets and local privileges to local privilege sets. Use the following table in planning which privileges to assign to a privilege set. For a description of each privilege, see *Privileges* (page 8).

System-wide privileges	Local privileges
Access Scheduling Groups	Access System Tree
Access System Options Items	Access Control Program Items
Maintain System Parameters	Access Alarms
Maintain Schedule Group Members	Edit Setpoint Parameters
Maintain Categories	Edit Setpoint Tuning Parameters
Acknowledge Non-Critical Alarms	Edit Tuning Parameters
Acknowledge Critical Alarms	Edit Manual Override Parameters
Force Normal Non-Critical Alarms	Edit Point Setup Parameters
Force Normal Critical Alarms	Edit Restricted Parameters
Delete Non-Critical Alarms	Edit Category Assignments
Delete Critical Alarms	Edit History Value Reset
Execute Audit Log Report	Edit Trend Parameters
Download Controllers	Edit Calibration Parameters
System Shutdown	Edit Hardware Controller Parameters
Engineer System	Edit Critical Configuration
Access Commissioning Tools	Edit Area Name
Maintain Graphs and Reports	Edit Control Program Name
Maintain Connections	Edit Alarm Configuration
Remote File Management	Edit Status Display Tables
Remote Data Access-SOAP	Edit Maintenance Tables
Do not audit changes made using SOAP (Web services)	Edit User Config Tables
Manual Commands/Console Operations	Edit Service Config Tables
Manual Commands/File IO	Edit Setpoint Tables
Manual Commands/Adv Network	Edit Time Schedule Data Tables
Manual Commands/Unrestricted	Manage Alarm Messages and Actions
Change My Settings	Maintain Schedules

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 System Tree and Maintain Schedules at each location that is a member of the schedule group.
- If you switch to location-dependent operator access in a system that has operators and privileges set up, the i-Vu® application splits any existing privilege set containing local and system-wide privileges into 2 separate privilege sets - one local and one system-wide. Operators' system-wide privilege sets still apply throughout the system. The operators' local privilege sets are automatically assigned at the system level. You can then reassign the local privilege sets to the operators at the locations where they need them.

To add a privilege set

Adding a privilege set using location-dependent operator access is the same as using location-independent operator access except that you must select whether you are adding a system-wide or local privilege set. See *Privilege sets* (page 8).

Recording reasons for edits (21 CFR Part 11)

The i-Vu® application can require an operator to record a reason for changing an equipment property before it accepts the change. The i-Vu® 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 up equipment to require reasons for changes

- 1 On the navigation tree, right-click the equipment, then select **Configure**.
- 2 Check **Require operator to record any changes to control program. Audit logging must be enabled**.
NOTE You can enable audit logging on the **System Options** tree > **System Settings** > **Security** tab.
- 3 Click **Accept**.

To view reasons for changing equipment properties

- 1 On the i-Vu® tree, select a piece of equipment that requires reasons for change.
- 2 Click the **Reports** button drop-down arrow, select **Security** > **Location Audit Log** or **System Audit Log**.
- 3 On the **Options** tab under **Display the following columns**, select the **Reason** checkbox.
- 4 Click **Run**.

Advanced password policy

You can set up a i-Vu® password policy to meet your security needs.

- 1 On the **System Options** tree, select **System Settings**.
- 2 On the **Security** tab under **Operators**, enter information in the fields described below.

NOTE See *System Settings* (page 62) for information on all the other fields.

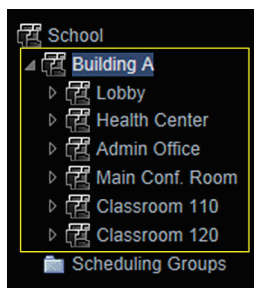
Field	Notes
Use advanced password policy	<p>Enable this field to put restrictions on passwords.</p> <p>An operator's login name and password must be different when this policy is enabled.</p> <p>After you change the password policy, any operator whose password doesn't meet the new requirements will not be locked out of the system, but will be prompted to create a new password.</p>
Passwords must contain	<p>You can specify how many characters and which of the following types of characters a password must contain:</p> <ul style="list-style-type: none"> • Numbers • Special characters—any keyboard character that is not a number or letter. • Letters—uppercase, lowercase, or both.
Cannot be changed more than once every __ days.	<p>Enter a number to limit how often users can change their passwords. When set to 0, users can change them as often as they want.</p>
May not be reused until __ different passwords are used.	<p>Enter a number between 1 and 20. Enter 0 to reuse passwords without a delay.</p>
Expire after __ days	<p>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.</p>

Field	Notes
Force expiration	Click this button to force every user's password to expire. Each user will be prompted to change their password when they next attempt to log in to the i-Vu® interface.

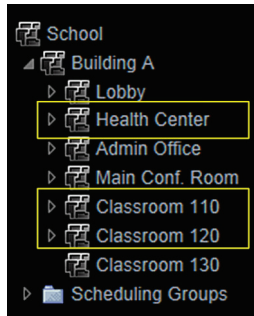
Schedules

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

In the **User** view, you can apply a schedule to a single tree item or to a group of tree items.



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



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

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

NOTES

- When multiple schedules affect a tree item, the net result is the *Effective schedule* (page 23).
- Do not include preheating or precooling time in your schedules. *Optimal Start* (page 46), another cost-saving strategy, automatically calculates and controls precise preheating and precooling routines.

To view schedules

- 1 Select a navigation tree item (site, area, or equipment).
- 2 Click **Schedules > View** tab.
- 3 Optional: Click a white **Effective** bar to view all the schedules that contribute to the resulting schedule. If the item has multiple schedules, the schedule closest to the **Effective** bar has the highest priority. You set a schedule's priority when you create the schedule.


NOTES

- When multiple schedules affect a single area or controller, the i-Vu® application sorts the schedules by priority - the higher the priority, the closer the schedule is to the bar. You set a schedule's priority when you add a schedule.

- You can also view schedules on the following detailed, printable schedule reports. These reports are accessible from the **Schedules** page > **Reports** tab or from the **Reports** button drop-down menu.

This report...	allows you to...
Schedule Instances	Find every schedule with its location that is entered at and below a selected tree item. This report can help you discover newly added and conflicting schedules.
Effective Schedules	View all equipment that may be scheduled and the net result of all schedules in effect for a selected date and time. See <i>Effective schedules</i> (page 23).

To print schedules

- Select a navigation tree item and click the **Reports** .
- Click **Schedules** > **Schedule Instances** or **Effective Schedules**.
- Click **Run**, then click **PDF**.

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.

Creating and modifying schedules

To apply a schedule to equipment

Schedules in the i-Vu® application are typically based on zone occupancy.

- In the User navigation tree, select the area or equipment you want to schedule .

NOTES

- To schedule all equipment in a specified area, select the area you want.
- You can schedule individual controllers from the Installer view, but you must be in the User view to schedule areas and routers

- Click **Schedules**, then **Configure** tab.
- Click **Add**.

- 4 Select a **Priority**. A schedule's priority determines whether affected zones will use occupied or unoccupied setpoints.

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

- 5 Select a **Type**. See table below.
- 6 Type a schedule name in the **Description** field (50 character maximum).
- 7 Enter desired values in the fields below **Description**.
- 8 On the graph, change a time segment's **Start** and **End** times by doing one of the following:
- Click the segment, then type the times in the **Start** and **End** fields.
 - Click and drag either end of the segment or the entire segment.
- 9 Optional: Click **Add Time Period** to add one or more segments to the schedule. Or, select a segment and click **Delete Time Period** to delete that segment.
- 10 Click **Accept**.

Select this Type...	To use the schedule...
Weekly	Every week on the specified days
Date	On a single, specified date
Date Range	Between 2 specified dates
Date List	On multiple, specified dates
Wildcard	According to a repeating pattern (For example, the second Tuesday of every month)
Continuous	Continuously between specified times on 2 separate dates
Dated Weekly	Weekly between a start date and an end date (For example, the summer break in the school year)

NOTES

- To automatically download all schedules that you create or change, go to **Main Menu** ▼ > **System Options** > **My Settings** and, under **Preferences**, select **Automatically download schedules on each change**. If you want to manually download schedules, clear the **Automatically download...** field and then see Downloading system changes to controllers.
- When you apply a schedule to an item on the navigation 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, select **Ignore Schedules above this level** on the **Schedules** > **Configure** tab.

To apply a schedule to a group of items

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

- 1 On the **User** navigation tree, select **Scheduling Groups**.

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

- 2 Click **Add Group**.
- 3 Type a name for the new schedule group in the **Name** field.
- 4 Optional: Change the default **Reference name**. A group's reference name must be unique throughout the system.
- 5 Click **Accept**.
- 6 Click **Add Members to Group**.
- 7 On the **Members** page, select the areas, equipment, or other groups that you want to add to the group from the tree on the right. Use **Ctrl+click**, **Shift+click**, or both to select multiple items.
- 8 Click **Add**.



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

- 9 Click **Accept**.
- 10 You will see the question **Execute download now?**. Click **OK**.
- 11 Click the **Schedules** button, then **Configure**.
- 12 Add a schedule to the group. See *To apply a schedule to equipment* (page 20).

To organize groups using folders

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

To create folders and add groups to them:

- 1 On the **User** tree, select **Scheduling Groups**.
- 2 Click **Add Folder**.
- 3 Type a name for the new folder in the **Name** field.
- 4 Optional: Change the default **Reference name**.
- 5 Click **Accept**.
- 6 Repeat steps 1–4 for each folder that you want to add.
- 7 Do one of the following to add a group to a folder:
 - If you have already created the group, drag and drop it into the appropriate folder in the tree on the **Scheduling Groups** page, then click **Accept**.
 - Select the folder in the tree on the **Scheduling Groups** page, then click **Add Group** to add a new group inside the folder.

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

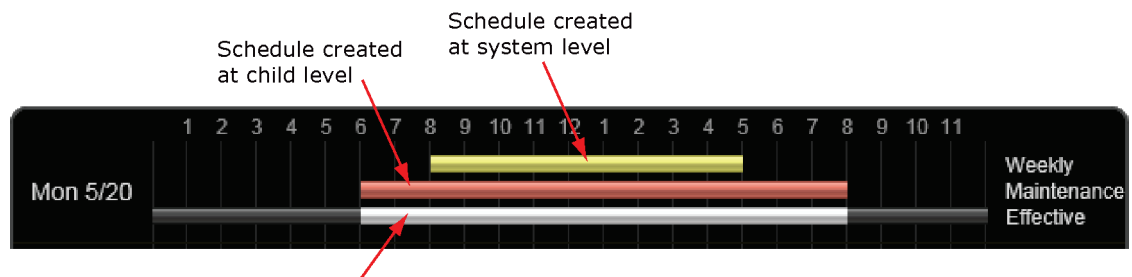
To edit or delete a schedule

- 1 Do one of the following:
 - On the navigation tree, select the tree item where the schedule was defined, then select **Schedules > Configure** tab.
 - In the **User** tree, click **Scheduling Groups**, then select the group that has the schedule you want to edit or delete.
- 2 Select the schedule you want to edit or delete.
- 3 Edit the fields you want to change or click **Delete**.
- 4 Click **Accept**.

NOTE Expired dated schedules are automatically deleted from the database at 3:30 AM every day. But expired schedules remain in the controller until the next time schedules are downloaded to the controller.

Effective schedules

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



Effective schedule — Click the white bar to see the schedules that result in the effective schedule.

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

Feature	Description
Hierarchy	<p>A schedule applied to an item on the i-Vu® tree affects that item and all of its children. A child item's combined schedule could be the result of multiple schedules applied at different levels above it. To change a child item's combined schedule:</p> <ul style="list-style-type: none"> • Add a schedule at the child that overrides the current schedule. See the <i>Priority</i> feature below. • Set the child to ignore the parent schedules. To do this, select the child item on the tree, then go to Schedules > Configure. Select the schedule, then click Ignore Schedules above this level. You can then add a different schedule for the child. <p>Any schedule change that you make to an item affects it and all of its children.</p>

Feature	Description								
Priority	You must assign one of the following priorities to every schedule.								
	<table border="1"> <thead> <tr> <th>Use...</th> <th>For...</th> </tr> </thead> <tbody> <tr> <td>Normal</td> <td>A typical occupied period</td> </tr> <tr> <td>Holiday</td> <td>An unoccupied period that overrides a Normal schedule</td> </tr> <tr> <td>Override</td> <td>An occupied period that overrides a Holiday time</td> </tr> </tbody> </table>	Use...	For...	Normal	A typical occupied period	Holiday	An unoccupied period that overrides a Normal schedule	Override	An occupied period that overrides a Holiday time
Use...	For...								
Normal	A typical occupied period								
Holiday	An unoccupied period that overrides a Normal schedule								
Override	An occupied period that overrides a Holiday time								
	<p>EXAMPLE For a school, you define:</p> <ul style="list-style-type: none"> • A Normal schedule that has it occupied every Monday–Friday, 6 am–5 pm • A Holiday (unoccupied) schedule for the week of Spring Break • An Override schedule on the first day of Spring Break from 9 am–1 pm for the cafeteria only where a teacher’s meeting will be held. 								
Type	You must assign one of the following types to every schedule.*								
	<table border="1"> <thead> <tr> <th>Weekly Date Date Range Date List</th> <th>Wildcard Continuous Dated Weekly</th> </tr> </thead> </table> <p>See <i>To apply a schedule to equipment</i> (page 20) for a description of each type.</p> <p>EXAMPLE For a school, you define the following 3 schedules:</p> <ul style="list-style-type: none"> • Full calendar year: Normal, Weekly, Monday–Friday, 6am–5pm • Summer months: Holiday, Continuous, 12am June 1st –11:59pm August 31st • Work days in summer months: Override, Dated Weekly, Monday–Thursday, 9am–2pm 	Weekly Date Date Range Date List	Wildcard Continuous Dated Weekly						
Weekly Date Date Range Date List	Wildcard Continuous Dated Weekly								

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

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

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

i-Vu® CCN schedules

There are 2 types of CCN schedules:

- 1 – 64 are local schedules that reside within the equipment
- 65 – 99 are network or global schedules, which are sent over a CCN network and received by controllers that contain network schedules

The i-Vu® application supports both local and global schedules.

Most CCN equipment is shipped with the default schedule of **64**. See exceptions below.

Equipment	i-Vu®'s default schedule number
Comfort Controller/UC/Expansion Controllers	0
Any controllers using a custom equipment file (*.equip) created with EquipmentBuilder	0
Gen III VVT, 48/50EJ (Conquest), FSM, CSM	1
All PICs	64

CAUTION! Confirm the actual schedule numbers that are used in the controller, as they may have been changed from their programmed default settings.

In order to use i-Vu® schedules, the i-Vu® schedule number must match the CCN schedule number at the controller. This can be set in the i-Vu® interface by selecting the equipment in the navigation tree and clicking **Schedules > CCN** tab. It is also accessible at the area or site level.

NOTE To reduce start-up labor on a retrofit project, existing network schedules can be used by the i-Vu® application. However, switching to local schedules allows for schedule retention after a power failure and local schedule maintenance tables.

If a controller uses a different schedule number, complete the following steps.

CAUTION! Failure to follow these steps may result in unexpected equipment operation.

- 1 On the navigation tree, select the controller.
- 2 Click the **Schedules** page, then **CCN** tab.
- 3 Adjust the following fields:
 - **Schedule number** - enter the CCN schedule number in use at the controller.
 - **Override time (optional)** - enter the number of minutes of the desired override and verify that the controller override time is greater than or equal to this number
 - **Override group** - enter the number of the group, if you have established one

Using schedule categories


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


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

To add a custom schedule category in the i-Vu® interface




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

- 1 On the **System Options** tree, click  to the left of the **Categories** folder, then click **Schedule**.
- 2 Click **Add**.
- 3 Enter values or add items for the fields in each section of the page. See table below.
NOTE The fields that you see depend on selections you made in previous sections.
- 4 Click **Accept**.

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

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

To view, edit, or delete a schedule category

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

Working with equipment in the interface

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

Devices pages

Select the system level on the navigation tree to view the Devices page, where you can:

- Upload source files or just parameters
- Download source files, schedules, parameters, or BBMD tables
- Check status and error messages
- View model, IP address, drivers, device ID
- Edit device names



Name	Status	Address	Model	Version	Views included in download
30 HXA Chiller	✓	22	UPC Open	1.20130402	chiller_30hxa_v02-20130402
30 RAP Aquasnap Chiller	✓	23	UPC Open	1.20130402	chiller_30rap_v04-20130402
Bypass RTU-2	✓	49	VVT Bypass	1.20130401	vvT_bypass-20130401
Cafeteria	✓	37	VAV Single Duct	1.20130402	vavb1_zone-20130402
Chilled Water Pumps	✓	5	MPC Open XP	1.20130403	chilled_water_pumps-20130403
Chiller Manager 4 Stage	✓	5	MPC Open XP	1.20130426	chiller_manager-20130426
Conference Room	✓	48	VVT Zone	2.20130401	vvT_zone-2_20130401
Cooling Tower	✓	5	MPC Open XP	1.20130403	cooling_tower_open-20130403
Engineering	✓	39	VAV Fan Terminal	1.20130402	vavb3_zone-20130402
Entrance	✓	21	AppController	1.20130402	water_source_hp_app-20130402
Human Resources	✓	45	VVT Zone	2.20130401	vvT_zone-2_20130401
Marketing	✓	36	VAV Single Duct	1.20130402	vavb1_zone-20130402
OAT/IRH Swing	✓	0	i-Vu Open Link	1.20130402	outdoor_lighting-20130403
Parking Lot Lights	✓	61	UC XP	1.20130403	outdoor_lighting-20130403

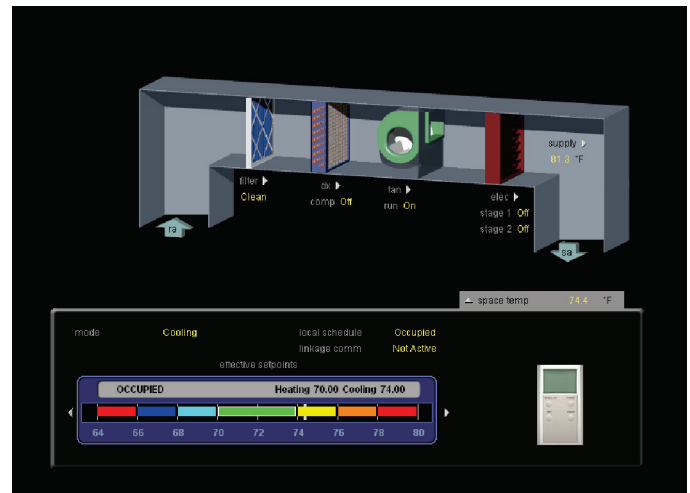
Graphics pages (page 29)

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

Equipment drawings show the current status of mechanical equipment.

Adjust **setpoints** (page 42) on a Graphics page.

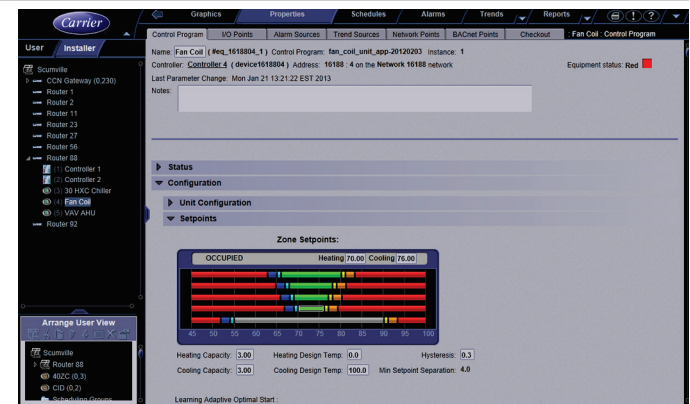
To upload a graphic from ViewBuilder, double-click the controller in the navigation tree or right-click and select **Configure**.



Properties pages (page 33)

You can monitor and control point sources.

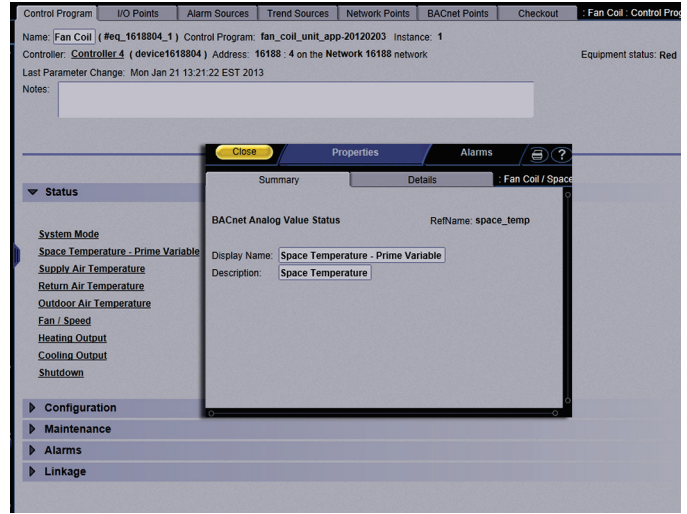
- 1 Select the equipment in the navigation tree.
- 2 Click **Properties** page > **Control Program** tab.
- 3 Expand the plus sign next to the desired table.



The figure shows the Properties page for a Fan Coil unit. The 'Control Program' tab is selected. The 'Status' section shows 'Equipment status: Rev'. The 'Configuration' section is expanded to show 'Unit Configuration' and 'Setpoints'. The 'Zone Setpoints' section is expanded to show a table of setpoints for 'OCCUPIED' mode, with 'Heating (70.00)' and 'Cooling (75.00)' setpoints. Below the table, there are fields for 'Heating Capacity: 1.00', 'Heating Design Temp: 0.0', 'Hysteresis: 0.3', 'Cooling Capacity: 3.00', 'Cooling Design Temp: 100.0', and 'Min Setpoint Separation: 4.0'. The 'Learning Adaptive Optimal Start' checkbox is also visible.

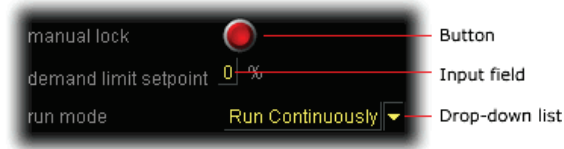
Properties/Microblock popups

Click a property or point to open the microblock popup to view and change details, including forcing or locking values.



Graphics pages

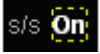
You can view and adjust your system from Graphics pages, which include navigation maps, floor plans, and equipment.



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

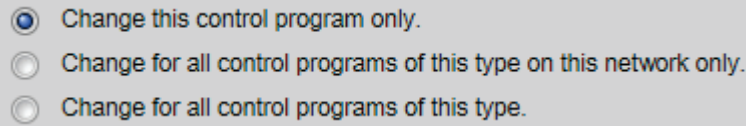
- Button or switch to turn equipment on or off
- Input field to set a property value
- Drop-down list to select a state
- Interactive zone sensor to override an unoccupied schedule
- Setpoint graph to adjust setpoints
- Trend graph to view trend information
- Link to jump to another i-Vu® page or to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

NOTES

- Right-click a value, then select **Details** to view and change properties in the microblock pop-up.
- Right-click a value, then select **Global Modify** (page 35) to view and change the property in other control programs.
- A yellow dashed box around a value indicates the value is locked or forced. 
- If a graphic does not fit in the action pane, right-click it and select **Scale to Fit** to make it fit the action pane. Select **Scale to Fit** again to return the graphic to its original size.

To attach a graphic in the i-Vu® interface

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



NOTES

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


If the graphic is...

In the Views Available list	<ol style="list-style-type: none"> a. Select the graphic, then click Attach. b. Click Accept.
Not in the Views Available list	<ol style="list-style-type: none"> a. Click Add New. b. Browse to select the view file. c. Click Open. d. Click Continue. e. Click Close. f. Click Close again.

NOTES

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

NOTE Changes to **Display Name** or **Category** apply only in the i-Vu® interface and are not retained if you export source files.
 - **Reference Name**—The name that is used to create links to the graphic in ViewBuilder
 - **Default View**—Sets the selected graphic as the default view if the tree item has multiple graphics. The default graphic is bolded in the **Attached** list.

NOTE The default graphic is initially set in SiteBuilder.
 - **Included in download**—Equipment graphics only. Select to have the .view file included in an **All Content** download so that it can be uploaded by Field Assistant. The graphic will have  beside it in the **Attached** list. Requires 4.x or later drivers.
- You can click **Delete Unused** at the bottom of the **Views** section to delete all unattached graphic files from your system.

To edit a graphic from the i-Vu® application in ViewBuilder

- 1 In the i-Vu® interface, double-click the controller in the navigation tree or right-click and select **Configure**.
- 2 Select appropriate options.
- 3 Click **Edit Existing** button under **Views**.
- 4 Click **Save** and place the file in an appropriate folder.
- 5 Open ViewBuilder.
- 6 Select **File > Open**. Browse to your saved graphic and click to open.
- 7 Edit and save with a new name - the original system name is locked and cannot be used for an edited graphic.

NOTE Names are case sensitive and should not have spaces and/or special characters.

To edit a graphic on an i-Vu® client

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

To get the graphic

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


To put the edited graphic back on the server

- 1 On the i-Vu® navigation tree, right-click the item that the graphic is attached to, then select **Configure**.
- 2 At the bottom of the **Views** section, click **Add New**.
- 3 Browse to select the .view file.
- 4 Click **Open**.
- 5 Click **Continue**.
- 6 Click **Close**.
- 7 Click **Close** again.

To organize multiple graphics for a tree item

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

To add a Graphics category in the i-Vu® interface

- 1 On the **System Options** tree, click  to the left of the **Categories** folder, then select **Graphic**.
- 2 Click **Add**.
- 3 Type the **Category Name** and **Reference Name**.
- 4 Optional: Select a privilege so that only operators with that privilege can access graphics in the category.
- 5 Click **Accept**.

NOTES






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

To assign a graphic to a category in the i-Vu® interface

- 1 On the navigation tree, right-click the item that the graphic is attached to, then select **Configure**.
- 2 Under **Views**, select the graphic in the **Attached** list.
- 3 Select the category in the **Category** field.
- 4 Click **Accept**.

To control equipment using an interactive zone sensor

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

If the sensor is a...	You can...
<p>ZS</p> 	<ul style="list-style-type: none">• Click  to raise the setpoint or  to lower the setpoint.• Click  to override the schedule and put the zone in an occupied state. To cancel an override, continue clicking  until the display shows 0.• See that the zone is in an occupied state when the green LED is lit.

If the sensor is a...**You can...****SPT Standard, Plus, or Pro**

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

SPT Pro-Plus

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

Properties pages

Properties pages are automatically generated from control programs. **Properties** pages show the status of a piece of equipment and the points/properties currently stored in it. See Checkout input and output, alarms, trends, and network points for details.

Use **Properties** pages to:


- View the status of a piece of equipment. See *Colors and status in the i-Vu® interface* (page 6).
- View or change the equipment point/properties currently stored in the controller.
- Commission equipment
- Set up Linkage.

Refer to your individual controller's *Installation and Start-up Guide* for detailed explanations of the points/properties.

To view or edit properties on a Properties page

- 1 Select a controller on the navigation tree, click **Properties**, and then select the appropriate tab.

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

- 2 Click  to show property details.

Space Temperature Alarm

<u>Occupied Alarm Hysteresis</u> (BAV) 5 °F	Default Value:	<input type="text" value="5.00"/>	<input type="checkbox"/> Lock at value:	<input type="text" value="0"/>
<u>Alarm Delay (min / deg)</u> (BAV) 10	Default Value:	<input type="text" value="10.00"/>	<input type="checkbox"/> Lock at value:	<input type="text" value="0"/>
<u>Unoccupied Low SPT Alarm Limit</u> (BAV) 45 °F	Default Value:	<input type="text" value="45.00"/>	<input type="checkbox"/> Lock at value:	<input type="text" value="0"/>
<u>Unoccupied High SPT Alarm Limit</u> (BAV) 95 °F	Default Value:	<input type="text" value="95.00"/>	<input type="checkbox"/> Lock at value:	<input type="text" value="0"/>

- 3 Do one of the following to change a property:

- Select or clear a checkbox
- Select an item on a drop-down list
- Change text in a text field

- 4 Click **Accept**.

NOTES

- Click the bold, underlined point name to open the editable microblock pop-up
- Right-click a value, then select **Details** to view and change properties in the microblock pop-up.
- Right-click a value, then select **Global Modify** (page 35) to view and change the property in other control programs.
- Use **Search/Replace** on the **Network Points** tab to replace a term in the point address with another address.
- For the legend of status colors, see *Colors and status in the i-Vu® interface* (page 6).
- A yellow dashed box around a value indicates the value is locked or forced.


Changing multiple microblock properties

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



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



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

To use Global Modify

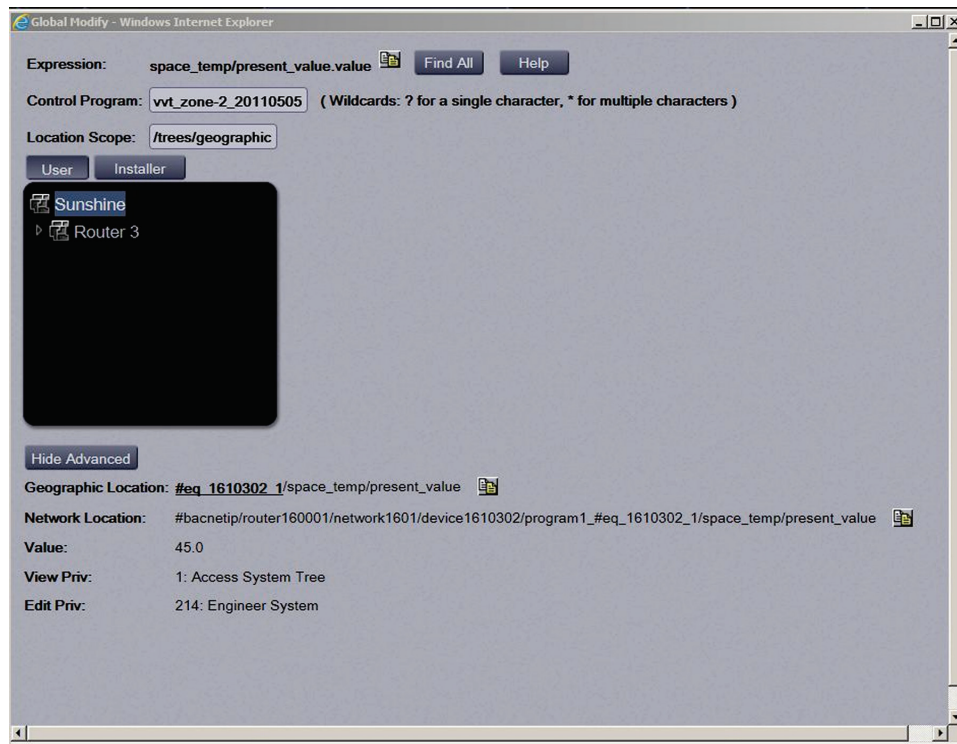
Use the Global Modify feature to:

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

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

NOTES

- Use wildcards in the **Control Program** field to broaden the search.
For example:
 - vav* matches vav, vav**1**, vav**x**, vav**12345**
 - vav*z matches vavz, vav**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 that you want to search under for every occurrence of that microblock in other control programs.
- 5 Click **Find All**.
- 6 Select the properties in the list that you want to change.
- 7 Do one of the following:
 - a) Type a **New Value** to the right of each selected item.
 - b) Select **Enable All**, type a new value in **b**, then click **Set All To**.

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

Enable	Equipment	Current Value	New Value
<input checked="" type="checkbox"/>	Router 3 / VVT Zone	1.00	1.00 a
<input checked="" type="checkbox"/>	Router 3 / VVT Zone	1.00	1.00 a
<input checked="" type="checkbox"/>	Enable All		b 1.00 a

c **a** **b**

Set All To

Change All By

Apply Changes

- 8 Click **Apply Changes**.

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

To use Global Copy

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




- Embedded trend graph settings
 - Custom trend graphs
 - Custom reports
 - Other editable properties to other pieces of equipment using the same control program.
- 1 On the navigation tree, right-click the piece of equipment that has the properties you want to copy, then select **Copy Control Program Properties**.
 - 2 In the **Global Copy** dialog box, select the items 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 instances at that level and below are listed in the expanded lower window.
 - 4 Check or uncheck items as needed.
 - 5 Do one of the following:
 - Check **Skip bad values** to copy all values except a bad value (it cannot be copied because you do not have the necessary privilege, the property to be copied is undefined, etc.).
 - Uncheck this field to prevent any values from being copied if a bad value is found.
 - 6 Click **Apply Changes**, then close the **Global Copy** dialog box.







Checking controller status


On the i-Vu® navigation tree, you can select a router, site, or the system, and then click the **Devices** button to:

- View the status of controllers (page 38)
- View controller information such as address, model, driver, and .view files included in download
- Download or upload to resolve a mismatch (page 41)
- Troubleshoot network communication
- Download or upload files for Field Assistant

NOTES

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

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

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

Status messages

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



If multiple conditions exist, the i-Vu® interface displays the message with the highest priority.

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

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

i-Vu® Open routers/controllers

Status column message	Hover text message	Notes
Black messages:		
Downloading	The controller is downloading, communications may be disabled	
Uploading	The controller is uploading, communications may be disabled	
Pending	This controller is waiting to be processed.	
Processing Clipping	Clipping operation in progress. Do not make changes during this operation, as they may corrupt your system.	
Red messages:		
Communications Error	Cannot communicate with this controller.	
Connection Disabled	The connection for this controller has been disabled.	Occurs if someone stopped the connection.
Connection Error	The connection for this controller failed to start.	Occurs if the connection is misconstrues or failed to start.
Controller offline	The controller is offline.	This only appears for equipment controlling slave devices that it is unable to communicate with.
Download Failed	(Message depends on the cause of the failure.)	
Download Not Permitted	This controller is not permitted to download.	
Error	An unknown error has occurred.	
Missing Files	Upload failed. Server is missing the source files.	
Not Uploadable	This controller is not configured for content upload.	Occurs if you attempt to upload a controller with a pre-4.x driver.
Out of Service	This controller is out of service.	
Unsupported Controller	This controller does not support content upload.	
Upload Not Permitted	This controller is not permitted to upload.	
USB Unplugged	Cannot communicate with the controller because the USB cable is unplugged.	Applies only to the i-Vu® Standard and Plus applications.

Status column message	Hover text message	Notes
Blue messages:		
Controller Replaced	This controller has been replaced by another controller of the same type in the field.	4.x driver only
Download All Content	Please download all content to the controller.	
Download Parameters	To download parameters, highlight row and select Parameters from the Download Action menu and click Download .	
Download Schedule	To download schedules, highlight row and select Schedules from the Download Action menu and click Download .	
Driver Parameter Mismatch	Driver parameter differences detected. Upload parameters from the controller or download parameters to the controller.	
Network Ready for Upload	To upload this network, select the router in the tree and Find Devices .	
Parameter Mismatch	Control program parameter differences detected. Upload parameters from the controller or download parameters to the controller.	
Program Mismatch	Content differences detected. Upload all content from the controller or download all content to the controller.	4.x driver only
Unprogrammed Controller	Applies only to a programmable controller that does not have any control programs in it.	To add control programs, click Add Control Program .
Upload All Content	Please upload all content from the controller.	
General messages:		
	This controller is ok.	
Cancelled	The last operation on this controller was cancelled	
CCN controllers/equipment		
Status column message	Hover text message	Notes
<blank>	This is a known control program from a previous discovery, but communications with it has not been attempted since the user logged in.	
	Successful rescan.	

Downloading	Downloading changes. Communications will resume shortly.	
New Control Program	A new controller was found at the scanned address and added to the system.	
New Version Applied	This controller's program or views have been updated with a newer version.	
Red messages:		
Communications Error	Cannot communicate with this controller.	
Download Failed	<The message is specific to the failure.>	
USB Unplugged	Cannot communicate with the controller because the USB cable is unplugged.	Applies only to the i-Vu® Standard and Plus applications.
Blue messages		
Classification Mismatch	The controller at this address was previously a Bridge routing to other controllers.	
Download All Content	Please download all content to the controller.	
Model Mismatch	The controller at this address is the wrong model.	
Rescan Required	A configuration change was made to this control program therefore a rescan is required to get the correct graphic and control logic components.	

To resolve a mismatch

A mismatch occurs when a value in a controller does not match the value in the i-Vu® database. Use either of the following methods to handle mismatches in your system.

- Check **Always upload properties from controllers to I-Vu database on mismatch** on the **System Settings > Communications** tab to have the i-Vu® application upload automatically.
- Uncheck **Always upload properties from controllers to I-Vu database on mismatch** so that you can evaluate every mismatch to determine the correct value. When a mismatch occurs:
 1. On the navigation tree, select the controller's network.
 2. Click **Devices**.
 3. On the **Manage** tab, select a controller with a mismatch.

4. Do one of the following:

- Click **Upload** to upload parameters from the controller to i-Vu® Server.
- Click **Download** to download parameters from i-Vu® Server to the controller.

NOTE Click the mismatch message in the **Status** column to view details.

Managing setpoints

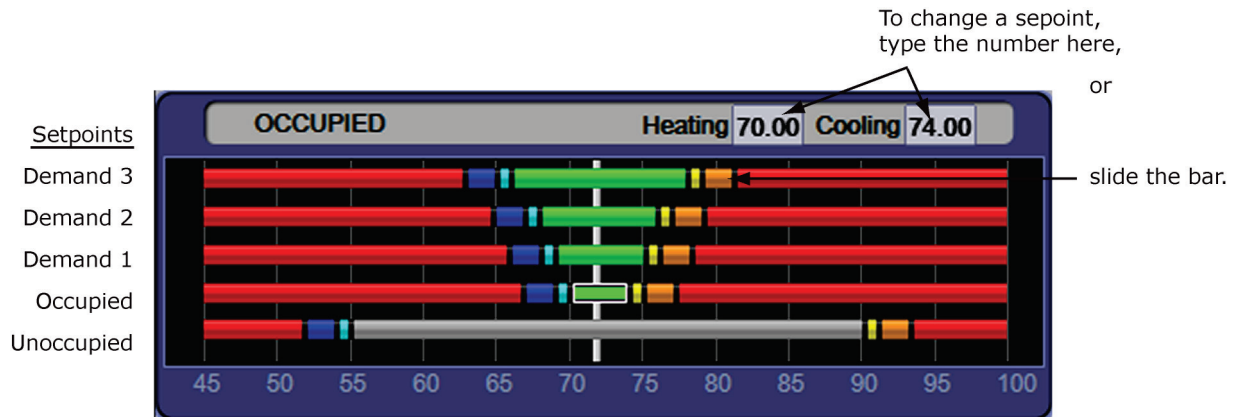
The **Setpoint** graphic shown on a standard equipment graphic indicates the base setpoint values (Occupied High/Low, Unoccupied High/Low). The i-Vu® application reads these values back periodically, typically within 10 seconds. The timing can vary based on network traffic, the number of controllers in the database, and several other variables. Setpoints that are changed in the field via another user interface are displayed in the i-Vu® interface as soon as they are detected.




You can, at any time, change the setpoints from i-Vu® graphics by using the slider or by entering numeric values directly. Updated setpoints are transmitted to the controller when you **Accept** the changes. Setpoints can also be changed on the **Properties** page > **Control Program** tab > **Space Temperature and Setpoints**. or **Configuration** > **Setpoints**.





NOTE Power and Standard operators may only edit **Occupied/Unoccupied** and **Heating/Cooling** setpoints. They cannot edit **Demand** levels or more detailed setpoint parameters.

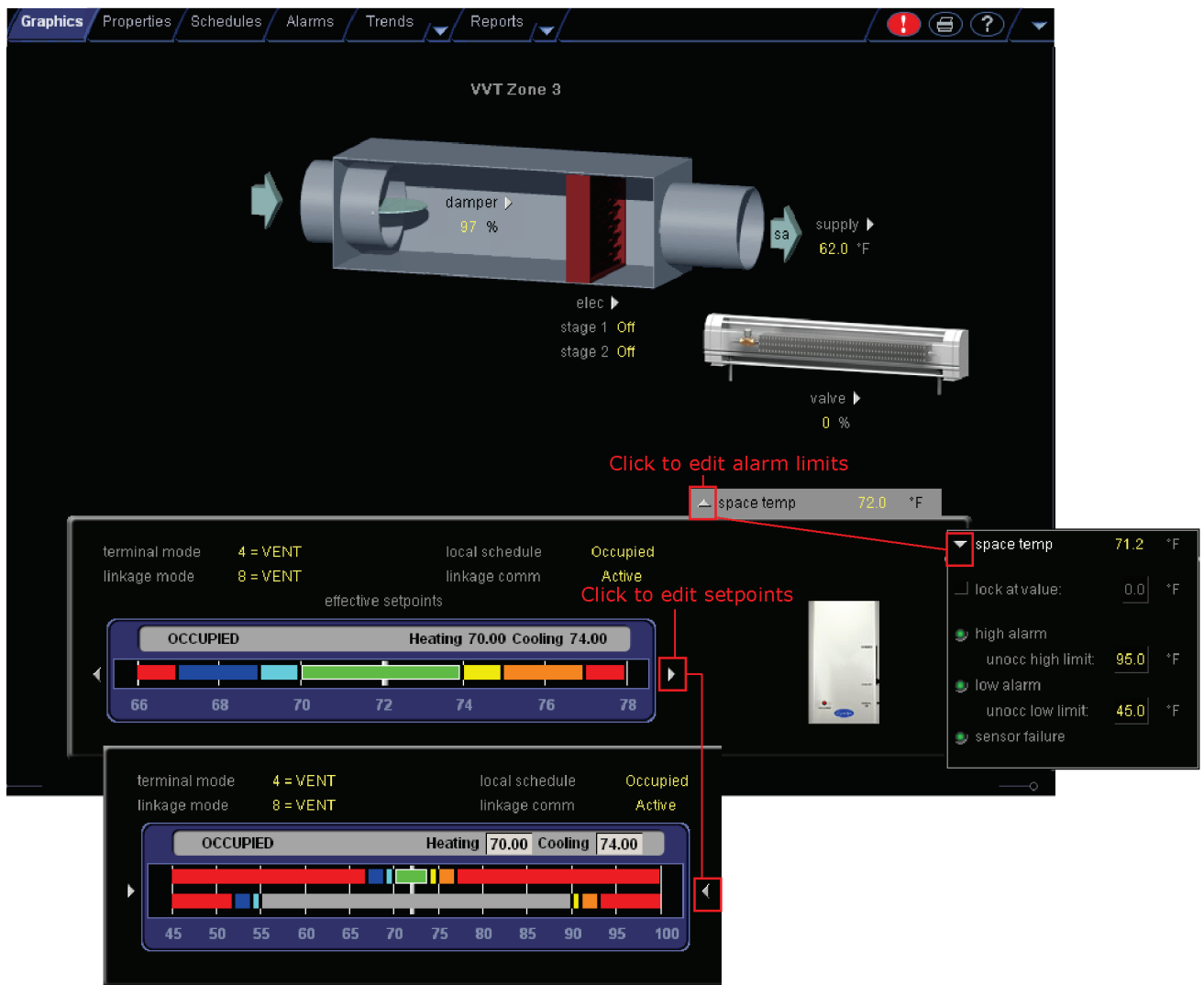
The various color bars indicate adherence to or deviation from the setpoint. You can change the current default settings for setpoint deviation. Select a color band on the setpoint graph to see the current setpoints in the **Heating** and **Cooling** fields. The values in this graphic are Fahrenheit. See setpoint descriptions below.

NOTE This graphic is an example only. Your setpoints may differ.



Color	Condition
	Green Temperature is within the Occupied Low and High Setpoint
	Grey Temperature is within the Unoccupied Low and High Setpoint
	Light Blue Temperature is less than 2°F below the Occupied Low Setpoint

Color	Condition
	Dark Blue Temperature is more than 2°F below the effective Low Setpoint but less than 4°F below the effective Low Setpoint
	Yellow Temperature is less than 2°F above the effective High Setpoint
	Orange Temperature is more than 2°F above the effective High Setpoint but less than 4°F above the effective High Setpoint
	Red Temperature is more than 4°F above or below the effective setpoints



The screenshot displays the i-Vu interface for VVT Zone 3. At the top, a navigation bar includes 'Graphics', 'Properties', 'Schedules', 'Alarms', 'Trends', and 'Reports'. The main area shows a 3D cutaway of a damper at 97% and a furnace with two stages (stage 1 and stage 2) both set to 'Off'. A supply air temperature of 62.0 °F is shown. A red arrow points to a 'space temp' field with a value of 72.0 °F, labeled 'Click to edit alarm limits'. Below this, a detailed setpoint control panel is shown, featuring a color-coded temperature scale from 66 to 78 °F. The scale is currently set to 'OCCUPIED' with Heating at 70.00 and Cooling at 74.00. A red arrow points to the 'Heating' and 'Cooling' values, labeled 'Click to edit setpoints'. To the right, a secondary control panel shows 'space temp' at 71.2 °F, with 'lock at value' at 0.0 °F, and alarm limits: unocc high limit at 95.0 °F, unocc low limit at 45.0 °F, and sensor failure.

Adjust setpoints

- **Programmed setpoints** are set and changed by operators.
- **Effective setpoints** reflect the impact of other system conditions on the programmed setpoints, such as setpoint adjustments, and hysteresis. Effective setpoints control the equipment.

To change programmed setpoints:

- 1 Navigate to a setpoint control in one of the following places:
 - **Properties** page > **Control Program** tab > **Configuration** > **Setpoints**
 - A **Graphics** page
- 2 Make changes on a programmed setpoint bar by:
 - Clicking and dragging the segment or the gap between segments
 - Typing new values in the **Heating** and **Cooling** fields
- 3 Click **Accept**.

Demand Control

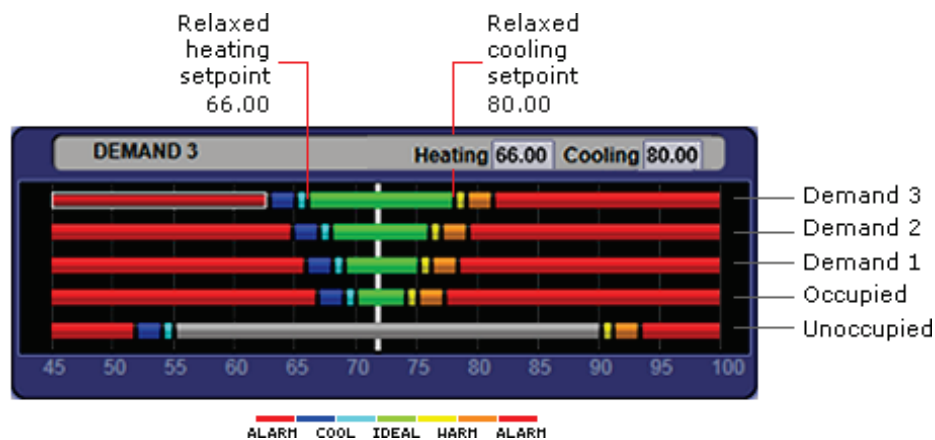
Demand Control is a cost-saving strategy that saves energy while maintaining comfort in the following ways:

- 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.



To define Demand Control properties

- 1 On the navigation tree, select the electric meter.
- 2 Select **Properties > Control Program** and expand the **Demand Level Parameters** section.
- 3 Type the **Start** and **End** time to define the time period that you want demand control to be in effect for this zone.
- 4 Type kilowatts per hour (kW/hr) in the **Level** columns to define the amount of power that the demand must exceed before the i-Vu® system calls for a higher demand level.

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

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

Period	Start (hh:mm)	End (hh:mm)	Level 1 (kW)	Level 2 (kW)	Level 3 (kW)
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	1450
6	20:00	24:00	1000	1550	1800

Configuring Optimal Start

Enable and configure Optimal Start on the **Properties** page > **Control Program** tab > **Configuration** > **Setpoints**. Your control program could be configured for **Optimal Start** or for both **Optimal Start** and **Optimal Start Type**.

NOTES

- The **Optimal Start** options depend on the revision date of the control program in your controller.
- Optimal Start is automatically disabled when **Properties > Control Program > Maintenance > Occupancy > BAS On/Off** is set to either **Unoccupied** or **Occupied**.

Optimal Start

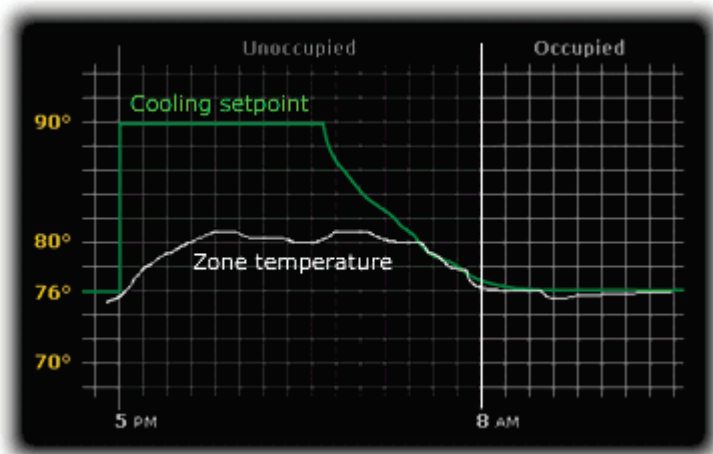
Optimal Start adjusts the effective setpoints to achieve the occupied setpoints by the time scheduled occupancy begins. The Optimal Start recovery period may begin as early as 4 hours prior to occupancy. The algorithm works by moving the unoccupied setpoints toward the occupied setpoints. The rate at which the setpoints move is based on the outside air temperature, design temperatures, and capacities.

The following conditions must be true for optimal start to operate:

- On the **Properties** page > **Control Program** tab > **Configuration** > **Setpoints** > **Optimal Start**, the **Default Value** must be set greater than **0** and less than or equal to **4** (**0.00** disables **Optimal Start**).
- The system is unoccupied

NOTE If the Open controller does not have a valid outside air temperature, then a constant of 65° F is used. This value is not adjustable.

The actual equation that the controller uses to calculate **Optimal Start** is nonlinear. An approximation of the result is shown below.



To change **Optimal Start** settings:

- 1 In the navigation tree, select the equipment that you want to change.
- 2 Select **Properties** page > **Control Program** tab > **Configuration** > **Setpoints**.

Optimal Start Type

If you have **Optimal Start Type**, you must choose from the following:

- **None**
- **Temperature Compensated Optimal Start**
- **Learned Adaptive Optimal Start**

To select the method used to change from unoccupied to occupied setpoints:

- 1 In the navigation tree, select the equipment that you want to change.
- 2 Click **Properties** page > **Control Program** tab > **Configuration** > **Setpoints**.
- 3 Select option from the **Optimal Start Type** drop-down list.
- 4 See below to make further adjustments.

None – The unit will not start to control to the occupied setpoints until the unit goes into an occupied mode. Setpoints do not ramp, but change immediately from unoccupied to occupied values. When you select **None**, you must set all Learning Adaptive Optimal Start transition factors, identified by their thermographic color, to 0. These are located directly above the **Effective Set Points** graph.

Temperature Compensated – The unit changes to occupied setpoints at some time prior to the occupied time, not to exceed the hours you set for **Optimal Start**. The start time is determined by the current error between space temperature and the appropriate heating or cooling setpoint. At that time, the setpoints do not ramp, but change immediately from unoccupied to occupied values. When selecting **Temperature Compensated**, you must set all Learning Adaptive Optimal Start transition factors, identified by their thermographic color to 0. These are located directly above the **Effective Set Points** graph.

When selecting **Temp Compensated**, you can adjust the following:

- **Heat Start K factor (min/deg)** – If **Optimal Start Type** is **Temp Compensated**, this is the time in minutes per degree that the equipment starts before the occupied period when the space temperature is below the occupied heating setpoint (including any setpoint offset).
- **Cool Start K factor (min/deg)** – If **Optimal Start Type** is **Temp Compensated**, this is the time in minutes per degree that the equipment starts before the occupied period when the space temperature is above the occupied cooling setpoint (including any setpoint offset).

NOTE The default value for the above is 15.00 and the range is 0 to 99.

Learning Adaptive Optimal Start – This function gradually adjusts the unoccupied setpoints over a specified period of time to achieve the occupied setpoint by the time scheduled occupancy begins. This learning adaptive algorithm uses the **learned heating capacity** and **learned cooling capacity** values to calculate the effective setpoints prior to the occupied start time. The algorithm calculates a learned cooling and heating capacity during the previous unoccupied time. Set the **Learning Adaptive Optimal Start** recovery period from 1 to 4 hours in **Optimal Start**. When the **Learning Adaptive Optimal Start** routine runs, adjustments are based on the color that is achieved when occupancy begins. Adjustment amounts are defined in the thermographic color fields located directly above the **Effective Setpoints** graph under **Setpoints**.

EXAMPLE The heating capacity for a zone is 5° per hour (default). 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 is decreased by the value entered in the **LtBlue** thermographic color field (0.0600 default). As a result, the learned heating capacity is adjusted to 4.94° for the next optimal start period. Since the algorithm has calculated that the equipment has less capacity to bring the temperature to setpoint within the configured recovery period, the setpoint adjustment begins sooner in the next unoccupied period.

To change the adjustment values in the **Learning Adaptive Optimal Start** routine:

- 1 In the navigation tree, select the equipment that you want to change.
- 2 Click **Properties** page > **Control Program** tab > **Configuration** > **Setpoints**.
- 3 Adjust the color fields between the Zone Setpoints graph and the the **Effective Setpoints** graph.

When you determine that no further start time optimization is required, you can disable **Heating** and **Cooling Capacity** adjustments by setting the color field values to 0.0.

You can reset the learned heating and cooling capacities by entering a value into either the **Heating Capacity** or **Cooling Capacity**, located beneath the **Zone Setpoints** graph.

The screenshot shows the 'Setpoints' configuration page for a zone. At the top, there are tabs for 'Control Program', 'I/O Points', 'Alarm Sources', 'Trend Sources', 'Network Points', and 'BACnet Points'. Below these is a 'Status' section, followed by a 'Configuration' section containing 'Unit Configuration' and 'Setpoints'. The 'Zone Setpoints' section features a horizontal bar chart with temperature markers from 45 to 100. Below the chart are input fields for 'Heating Capacity: 3.00', 'Cooling Capacity: 3.00', 'Heating Design Temp: 0.0', 'Cooling Design Temp: 100.0', 'Hysteresis: 0.3', and 'Min Setpoint Separation: 4.0'. The 'Learning Adaptive Optimal Start' section includes a text description and a row of color-coded input fields: Red (0.1900), DkBlue (0.1300), LtBlue (0.0600), Green or SpGrn (0.0600), Yellow (0.0600), Orange (0.1300), and Red (0.1900). Below this is the 'Effective Setpoints' section with another horizontal bar chart and text indicating learned capacities: 'The learned cooling capacity is 3.00 ;' and 'The learned heating capacity is 3.24 ;'. At the bottom, there are several parameters: 'Optimal Start' (BAV, 1 hr, Default Value: 1.00), 'Optimal Start Type' (BMSV, Temp Compensated, Default Value: Temp Compensated), 'Heat Start K factor (min/deg)' (BAV, 15, Default Value: 15.00), and 'Cool Start K factor (min/deg)' (BAV, 15, Default Value: 15.00).

Allows learned cooling and heating capacities to reset.

Thermographic color fields determine the adjustment factors for Learning Adaptive Optimal Start.

Sets the maximum allowable recovery period. Selects the type of Optimal Start algorithm.

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

Monitoring and controlling equipment

You can monitor and control your equipment from:

- The Open controller's **Properties (page 33)** pages
- The CCN controller's **Properties (page 33)** pages and the tables that are available when you expand the categories under the controller in the navigation tree
- *The equipment graphic* (page 29) (if applicable)

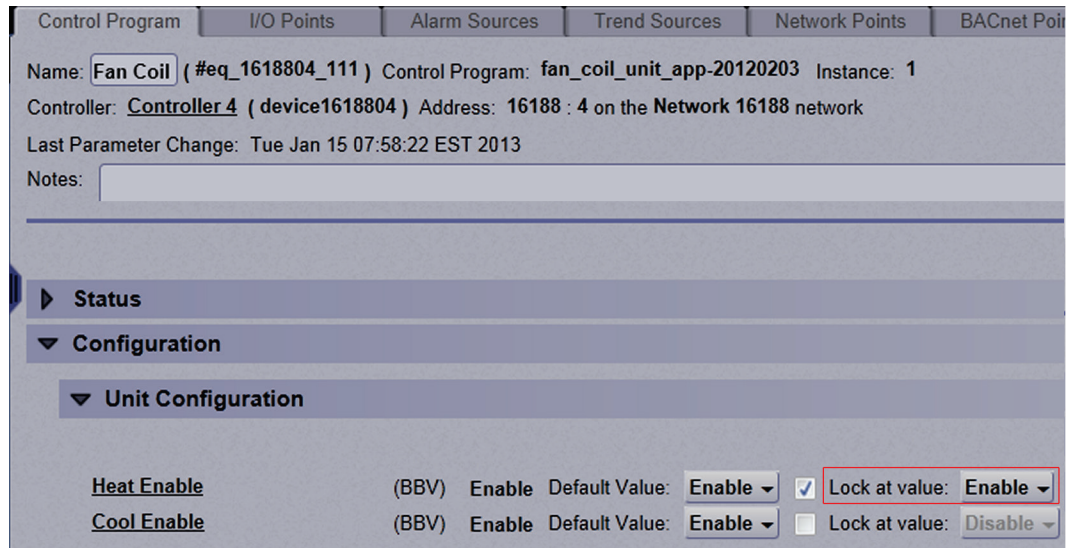
To lock a BACnet point or value

You can lock certain editable parameters to a specified setting from the **Properties** page or microblock popup.

- 1 Select the **Lock** checkbox.
- 2 Type the value you want to send to the controller.
- 3 Click **Accept**.

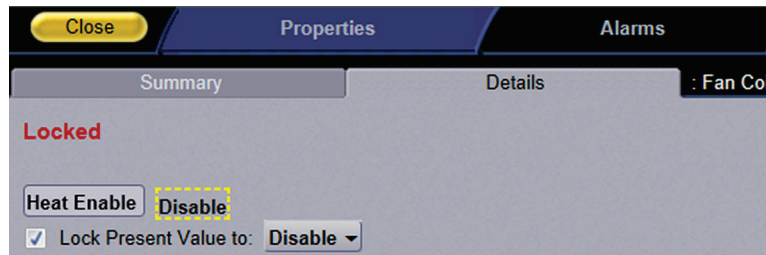
NOTE Locked values are indicated by a dashed yellow line on graphics.

On **Properties** page > **Control Program** tab, click ▶ to locate the point you wish to lock.



On the microblock popup:

1. Click on the underlined **Name** or **Reference Name** of the point on any of the **Properties** tabs to open the point/properties details popup.
2. Click **Properties** page > **Details** tab to lock a value.

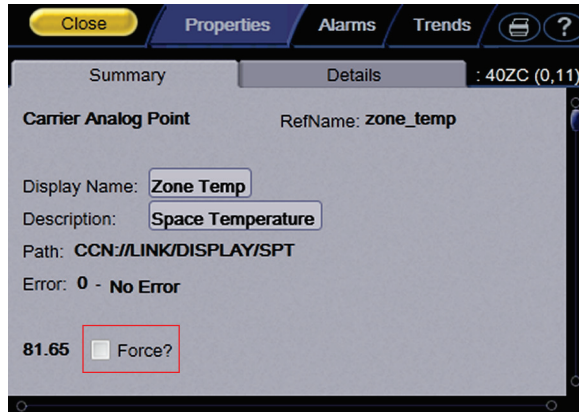


To force a CCN point value

You can force certain editable point values to a specified setting from:

- Equipment tables - click ► next to the equipment to expand tables
- A graphic - hold down Ctrl and, using your mouse, click on the point value on the graphic. A microblock popup appears.
- Properties pages

Forced values are indicated by a dashed yellow line on graphics.



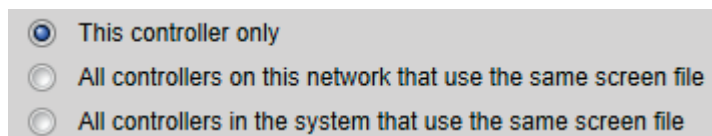
- 1 Select the **Force** checkbox.
- 2 Type the value you want to send to the device.
- 3 Click **Accept** or **Apply**.

Working with touchscreen or BACview® files in the i-Vu® interface

To use a touchscreen device or BACview® to view or edit a controller's property values, you must download a screen file (.touch, .bacview, .S37, or .kpd) to the controller. The screen file is typically defined in SiteBuilder and downloaded with the initial download to the controller, but you can select a different file in the i-Vu® interface.

To select a different screen file

- 1 On the i-Vu® navigation tree, right-click the controller, then select **Driver Properties > Update** tab.
- 2 If other controllers in the system use the current screen file, select which controllers you want to change.



- 3 Do one of the following:

If the screen file is...

In the Screen file drop-down list	<ol style="list-style-type: none"> Select the file. Click Accept.
Not in the Screen file drop-down list	<ol style="list-style-type: none"> Click Add. Browse to select the screen file. Click Open. Click Continue. Click Close. Click Close again.

- 4 Download All Content to the controller.

NOTE You can click **Delete Unused** in the **Screen File** section to delete all unused screen files in:

- **I-Vu.x\webroot\<system_name>\views**
- **I-Vu.x\webroot\<system_name>\programs**

To edit a screen file on an i-Vu® client

On an i-Vu® client, you can get a copy of a screen file from the server, edit it, then put it back on the server.

To get the screen file

- 1 On the i-Vu® navigation tree, right-click the controller that uses the screen file, then select **Driver Properties > Update** tab.
- 2 Under **Screen File**, click **Edit**.
- 3 Click **Save as**.
- 4 Browse to the folder you want to put the file in.
- 5 Click **Save**.
- 6 Click **Close**.


To put the edited file back on the server

- 1 On the i-Vu® navigation tree, right-click the controller that uses the screen file, then select **Driver Properties > Update** tab.
- 2 Under **Screen File**, click **Add**.
- 3 Browse to select the file.
- 4 Click **Open**.
- 5 Click **Continue**.
- 6 Click **Close**.
- 7 Click **Close** again.

Setting up i-Vu® client devices and web browsers

The i-Vu® system can be viewed on the following client devices and web browsers.

A computer¹ with this operating system...	Supports these web browsers...	
Windows®	Google™ Chrome™ v23.0 or later ² Internet Explorer® v8, v9, v10, or v11 Desktop Mozilla® Firefox® v21.0 or later	
Mac® OS X® (Apple® Mac only)	Safari® v6 or later ³ Google Chrome v23.0 or later Mozilla Firefox v21.0 or later	
A tablet with this operating system	Web browser	Tested tablets
iOS	Safari v6 or later	Apple® iPad® ^{4, 5}
Windows® RT	Internet Explorer® 10/11 or Metro-style Internet Explorer® 10/11	Microsoft® Surface ^{4, 5}
Windows® 8 or 8.1 Pro	Internet Explorer® 10/11 or Metro-style Internet Explorer® 10/11	Microsoft® Surface™ Pro ^{4, 5}
Android™	Google™ Chrome™ v23.0 or later	Google™ Nexus™ 7 and 10 ^{4, 5}

- 1 The client computer should have at least:
 - Dual core processor
 - 1.5 GB RAM
 - Communications link of 10 Mbps or higher
 The i-Vu® application will work with slower computers and slower links, but the results may not be satisfactory.
- 2 Best performance
- 3 Best performance unless browser is running on a Mac® Mini or a MacBook:
 -  **WARNING** If machine is running Mountain Lion 10.8x with an integrated Intel HD 400 graphics card, it will experience display issues. Use one of these workarounds for better performance:
 - If an additional NVIDIA graphics card is available, manually switch the graphic card setting in MAC® OS X® to use that card.
 - If not, use Google™ Chrome™ v23.0 or later.
- 4 Most of the tablets listed do not support plug-ins (Java Runtime Environment, Flash, PDF reader, etc.) so some i-Vu® add-on applications and other features may not work. The Surface Pro with IE 10 Desktop does support plug-ins.
- 5 Touch functionality on tablets not tested by Carrier may or may not work with the i-Vu® application. Use at your own risk.

Setting up and using a computer with an i-Vu® system

- Set the monitor's screen resolution to a minimum of 1024 x 768 with 24- or 32-bit color quality
- You may want to disable the computer's navigation sounds.

Mac only

NOTE The instructions below are for a Mac OS X 10.8. Other versions may vary slightly. See your computer's Help if necessary.

Computer settings	To change setting...
Enable right-clicking to see right-click menus:	
On a Mac	<ol style="list-style-type: none"> 1 Select System Preferences > Mouse. 2 Click the drop-down list that points to the mouse's right-click button, then select Secondary Button.
On a MacBook	<ol style="list-style-type: none"> 1 Select System Preferences > Trackpad. 2 Enable Secondary click.

The instructions in Help are for a Windows computer. For instructions that include the **Ctrl** key, replace **Ctrl** with **Command**. For example, replace **Ctrl+click** with **Command+click**.

Using a tablet with the i-Vu® system

You can view your i-Vu® system on tablets that have the following operating systems and web browsers, but some functionality may be changed or limited. Issues with each tablet are discussed below.

Tablet operating system	Web browser	Tested tablet*
iOS	Safari® v6 or later	Apple® iPad®
Windows® RT	Internet Explorer® 10/11 or Metro-style Internet Explorer® 10/11	Microsoft® Surface
Windows® 8 or 8.1 Pro	Internet Explorer® 10/11 or Metro-style Internet Explorer® 10/11	Microsoft® Surface™ Pro
Android™	Google™ Chrome™ v23.0 or later	Google™ Nexus™ 7 and 10

* Touch functionality of tablets not tested by Carrier may or may not work with i-Vu®. Use at your own risk.

All tablets

- To access the right-click menu for:
 - The action pane–Touch and hold the item for several seconds.
 - A tree item–Select the item first, then touch and hold the item for several seconds.
- Audible alarms do not generate a sound.
- Firefox currently has many problems supporting touch gestures on tablets.
- To clear the browser's cache, see *Setting up and using a web browser to view the i-Vu® interface* (page 55).

iPad

- Double-tap to zoom in/out.
- The **Jump To** feature on a **Logic** page does not work in Safari® on an iPad® due to way Safari handles JavaScript on secondary tabs.
- A i-Vu® feature that opens a pop-up window on a computer (for example, Global Modify) will open in a new tab in Safari.
NOTE Some of these features will present the message **This site is attempting to open a pop-up window**. Select **Allow** to continue.
- iOS restricts access to a file system so i-Vu® features that upload or download files on a computer client are disabled on an iPad. This applies to the following configuration features:
 - **Configure > Edit Existing or Add New** (views, control programs, screen files, drivers)
 - **Import clipping**
 - **System Settings > General > Source Files > Export or Import**
 - **System Settings > General > Logs > Download**
 - **System Settings > Security > Permissions > Add**
 - **System Settings > Daylight Saving > Import**
 - **System Settings > Add-ons > Install Add-on**
 - **License Administration > Browse**
 - **Update** (patches, service packs, drivers, language packs, graphics libraries, help)
 - Reports saved as XLS
- iOS does not support plug-ins (Java Runtime Environment, Flash, etc.) so some i-Vu® add-on applications will not work on an iPad.
Microsoft Surface and Surface Pro
- Pinch-zoom works on individual frames, instead of the whole screen. This means you can zoom and scroll the navigation pane and action pane separately.
- The Surface RT and IE 10 or 11 Metro do not support plug-ins (Java Runtime Environment, Flash, PDF reader, etc.) so the following features will not work.
 - Some i-Vu® add-on applications
 - The **Reports** page **PDF** buttonYou can use the Surface Pro with IE 10 or 11 Desktop if you need these features.
- If browser text is too small, use **Ctrl +** to increase Internet Explorer's zoom level, then reload the page.

Google Nexus

- The Nexus does not support plug-ins (Java Runtime Environment, Flash, PDF reader, etc.) so the following features will not work.
 - Some i-Vu® add-on applications
 - The **Reports** page **PDF** button

Setting up and using a web browser to view the i-Vu® interface

To set up and use Internet Explorer

NOTES


- The instructions below are for Internet Explorer 9. Other versions may vary slightly. See your web browser's Help if necessary.
- If the menu bar is not visible, right-click on the window's header, and then select **Menu bar**.

Web browser settings	To set in Internet Explorer...
Accept First-party and Third-party cookies	Tools > Internet Options > Privacy > Advanced button
Automatically check for newer versions of stored pages	Tools > Internet Options > General > Browsing history > Settings button
Load ActiveX Control	Tools > Internet Options > Security > Custom Level button. Under ActiveX controls and plug-ins , set the following: <ul style="list-style-type: none"> • Download signed ActiveX controls > Prompt • Download unsigned ActiveX controls > Disable • Run ActiveX controls and plug-ins > Enable • Script ActiveX controls marked safe for scripting > Enable
Select Play animations in web pages	Tools > Internet Options > Advanced > under Multimedia
Disable all the options on the Explorer Bar	View > Explorer Bars
Disable web browser's pop-up blockers	Tools > Pop-up Blocker > Turn Off Pop-Up Blocker
Disable external toolbar pop-up blockers	Varies
Hide the web browser's toolbars	View > Toolbars

To...	Do the following...
Maximize the web browser window	Press F11 to turn full-screen mode on/off, or use the minimize/maximize button in the top right corner of the browser window.
Have 2 different users logged in to the i-Vu® system on the same computer	Start a new web browser session. Select File > New Session .
Clear browser cache	<ol style="list-style-type: none"> 1 Select Tools > Internet Options. 2 Click Delete. 3 If you had the i-Vu® system saved as a Favorite, uncheck Preserve Favorites website data. 4 Click Delete again.

To set up and use Mozilla Firefox

NOTES

- The instructions below are for Mozilla® Firefox® v21.0 on a Windows operating system. Other versions may vary slightly. See your web browser's Help if necessary.
- If the menu bar is not visible, click  in the top left corner, and then select **Options > Menu bar**.
- If a message appears in the i-Vu® interface that includes the checkbox **Prevent this page from creating additional dialogs**, DO NOT check this box.

Web browser settings	To set in Firefox...
Enable pop-up windows	<ol style="list-style-type: none"> 1 Select Tools > Options > Content. 2 Uncheck Block pop-up windows.
Enable JavaScript	<ol style="list-style-type: none"> 1 Select Tools > Options > Content. 2 Check Enable JavaScript. 3 Click the Advanced button to the right of Enable JavaScript, then verify the following options are checked: <ul style="list-style-type: none"> • Move or resize popup windows • Raise or lower windows • Disable or replace context menus
Add-ons Manager	<p>Select Tools > Add-ons. On this page, you can enable/disable installed add-ons such as:</p> <ul style="list-style-type: none"> • Adobe® Acrobat® Reader (to view PDF's) • QuickTime Plug-in (to play audible alarms) <p>Only installed Firefox add-ons will show up in the list.</p>


To...	Do the following...
Maximize the web browser window	Press F11 to turn full-screen mode on/off.
Clear browser cache	Tools > Options > Advanced > Network > Cached Web Content > Clear Now
Have 2 different users logged in to the i-Vu® system on the same computer	Start a new web browser session. Select File > New Private Window .


To set up and use Google Chrome


NOTES

- The instructions below are for Google™ Chrome™ v23.0. Other versions may vary slightly. See your web browser's Help if necessary.
- If a message appears in the i-Vu® interface that includes the checkbox **Prevent this page from creating additional dialogs**, DO NOT check this box.

On a computer

Web browser settings	To set in Chrome...
Enable pop-ups	<ol style="list-style-type: none"> Click  on the browser toolbar. Select Settings. Click Show advanced settings. Under Privacy, click Content settings. Under Pop-ups, do one of the following: <ul style="list-style-type: none"> Select Allow all sites to show pop-ups. Click Manage exceptions. Type your system's IP address or server name in the Hostname pattern field, then set Behavior to Allow.

To...	Do the following...
Clear browser cache	<ol style="list-style-type: none"> Click  on the browser toolbar. Select Tools > Clear browsing data. Check the types of information that you want to remove. Select a time range in the drop-down list. Click Clear browsing data.
Maximize the web browser window	Press F11 on your keyboard to turn full-screen mode on/off.

To...	Do the following...
Have 2 different users logged in to the i-Vu® system on the same computer	Start a new web browser session. Click  , then select New incognito window .

On a Google Nexus

Web browser settings	In the Chrome menu...
Turn off desktop mode	Uncheck Request desktop site .
Disable pop-up blocker	Settings > Advanced > Content Settings > uncheck Block pop-ups
Enable JavaScript	Settings > Advanced > Content Settings > check Enable JavaScript
Enable Cookies	Settings > Advanced > Content Settings > check Accept Cookies

To...	In the Chrome menu...
Clear browser cache	Settings > Advanced > Privacy > CLEAR BROWSING DATA

To set up and use Safari

NOTES

- The instructions below are for Safari® v6. Other versions may vary slightly. See your web browser's Help if necessary.
- We recommend that you do not run Safari in full-screen mode. If you do, i-Vu® pop-ups will open full-screen, covering the main application window.

On an Apple® computer (Mac®)

Web browser settings	To set in Safari...
Disable pop-up blocker	Preferences > Security > uncheck Block pop-up windows.
Enable JavaScript	Preferences > Security > check Enable JavaScript.
Enable Plug-ins	Preferences > Security > check Enable plug-ins.
Prevent pop-ups from opening in a new browser tab	Preferences > Tabs > uncheck Command-click opens a link in a new tab.
Prevent Safari from automatically opening zip files exported from the i-Vu® application	Preferences > General > uncheck Open "safe" files after downloading.

To...	Do the following...
Clear browser cache	History > Clear History.
Have 2 different users logged in to the i-Vu® system on the same computer	Start a new web browser session. Select Safari > Private Browsing. Then select File > New window.

On an Apple® iPad

Web browser settings	To set on the iPad...
Disable pop-up blocker	<ol style="list-style-type: none"> 1 In the Settings app, select Safari. 2 Set Block pop-ups to Off.
Enable JavaScript	<ol style="list-style-type: none"> 1 In the Settings app, select Safari. 2 Set JavaScript to On.

To...	Do the following...
Clear browser cache	In the Settings app, select Safari > Clear History.

Using Alarms, Trends, and Reports

See i-Vu® Help for detailed information on:

- Setting up and using **Alarms**
- Viewing and customizing **Trends**
- Running standard reports and creating custom **Reports**

Using System Options

System Options provides administrative access for the following functions:

- *My Settings* (page 61) - user's login, navigation tree preferences and personal contact information
- *System Settings* (page 62)
 - *General* (page 62)
 - *Security* (page 65)
 - *Communications* (page 67)
 - *Scheduled Tasks* (page 67)
 - *Daylight Saving* (page 68)
 - *Add-ons* (page 69)
- *Operators* (page 7) - operator passwords, levels of access (roles), menu starting location
- *Privilege Sets* (page 8)
- *Operator Groups* (page 11)
- *Categories* (page 25) - Schedule, Alarm, Graphic, Property, Trend, Report
- *Connections* - To set up a BACnet/IP connection in the i-Vu® interface
- *Services* (page 2)
- *License Administration* (page 70)
- *Update* (page 71)
- Client Installs - download Sun's Java VM. See *Setting up a computer* (page 53) and Alarm Popup Application in the i-Vu® Help.

My Settings

On the **My Settings** page, you can change settings, such as your:

- Password
- Viewing preferences
- Contact information

NOTE The System Administrator can also change these settings on the **Operators** page.

To change your settings:

- 1 On the **System Options** tree, select **My Settings**.
- 2 Make changes on the **Settings** or **Contact Info** tab. See table below.
- 3 Click **Accept**.

Field	Notes
Change password	Enable this field, then type your current and new passwords.
Starting Location and Starting Page	The i-Vu® view, location, and page that will be displayed after you log in.
Automatically collapse trees	Expands only one tree branch at a time.
Automatically download schedules on each change	Select to automatically download all new schedules that you create and schedules that you change.
Play sound at browser when server receives	<p>Check Non-critical alarms or Critical alarms if you want the system to audibly notify you when that type of alarm is received.</p> <p>You can specify a different sound file.</p> <ul style="list-style-type: none"> • Internet Explorer, Firefox, and Safari support .wav, .mp3, or .au files. • Google Chrome supports .wav or .mp3 files. <ol style="list-style-type: none"> 1 Put your file in the webroot_common\lv15\sounds folder. 2 In the Sound File field, replace normal_alarm.wav or critical_alarm.wav with the name of your sound file. <p>NOTE You can put your sound file anywhere under the I-Vu.x folder, but you must change the path in the Sound File field.</p>

System Settings

The **System Settings** page contains information that you must enter before the i-Vu® application can run properly.


- 1 On the **System Options** tree, select **System Settings**.
- 2 Click each tab, then enter the necessary information. Tab details are described below.

General tab

The **General** tab presents the following **System Information**:

- **System Directory Name**
- Path to the **Webroot Directory**
- **Database Type**

You can edit or use the following fields and buttons.

Field	Notes
System Information	
System Statistics button	Click to see the number of controllers and trends in the system.
Logs	
Select a week of logs to review	For troubleshooting, you can download a zip file that contains logs of system activity.
Time	
Time Format	Select one of the following for the system's time: <ul style="list-style-type: none"> • 12-hour clock (Example: 4:34 pm) • 24-hour clock (Example: 16:34)
Date Format	Select the format you want the system to use.
Time Sync	<p>Click to immediately synchronize the time on all IP network controllers in the system database to the i-Vu® server's time.</p> <p>Check Enable time synchronization of controllers daily at ____ to set daily time synchronization occurs daily if the field on the <i>Scheduled Tasks tab</i> (page 67) is enabled. (Click this link for more information on time synchronization.)</p> <p>Automatically synchronizes the time on all equipment to the time on the server, adjusting for different time zones and Daylight Saving Time. We recommend that you check this field.</p> <p>The i-Vu® application will send a daily time sync message to each IP network device that is in the system database. IP devices not in the database will not be synchronized. For all MS/TP networks in the database, the i-Vu® application will send a broadcast time sync message. All devices on these networks will be synchronized, regardless of whether or not the devices are in the database.</p> <p> CAUTIONS</p> <ul style="list-style-type: none"> • Make sure that your server's time and time zone setting are correct. • To prevent time sync problems when the transition to and from Daylight Saving Time occurs, set the time sync to occur at least 1 hour after the last controller in the system is adjusted for DST. For example, your server and part of your system is in the Eastern Standard Time zone, but you also have controllers in the Pacific Time zone. Your server is adjusted for DST at 2:00 a.m. Eastern Standard Time, but the controllers in the Pacific Time zone are not adjusted until 3 hours later. So you would set the time sync to occur daily at 6:00 a.m. or later. <p>NOTES</p> <ul style="list-style-type: none"> • You can perform system-wide time synchronizations using the Time Sync button. • Between time sync broadcasts, Carrier routers include time sync information in each color request to the devices below the router. This ensures devices without a battery-backed clock will get the time shortly after powering up.

Field	Notes
Alarms	
Enable support for Alarm Notification Clients to connect to this server	Check to use the Alarm Notification Client application. See Alarm Popup alarm action.
Trends	
Keep trends for ___ days	Stores trend data in the i-Vu® database for the time you specify. This is a default setting that you can change when you set up trends for an individual point.
Source Files	
All Source Files	<p>Use to export source files to a .zip file that can be imported into another i-Vu® or Field Assistant system. Source files include:</p> <ul style="list-style-type: none"> • Control programs (.equipment files only) • Drivers • Graphics (.view files only) • Touchscreen files • BACview® files • Report design files for Equipment Values or Trend Sample reports <p>NOTE If import detects a difference between a database file and an import file with the same name, import does not overwrite the database file. A message lists any file differences so that you can resolve them.</p> <p>See Commissioning equipment using Field Assistant.</p>
Download	
Optimize download for Open PIC controllers	Check to increase download speed. The full source files are not downloaded into the PIC controllers when this is checked.
Include graphics in Open programmable controller download	Uncheck to increase download speed. If you are not changing the graphics, you may not want to include them in every download.
Clippings	

Field	Notes
Import	<p>Click button to import clipping files, which include:</p> <ul style="list-style-type: none"> • Navigation tree items including attached control programs, graphics, drivers, and screen files • Trend data • Reports • Alarm categories • Schedules and schedule group membership (including the entire schedule group and schedules, if it does not exist in the target system) • Alarm actions <p>NOTE A Clipping containing CCN controllers does not include the CCN tables. When importing a clipping containing CCN devices, you must re-scan the table.</p>

Security tab

Field	Notes
Logging	
Log audit data to file	<p>Records operator activities and some system activities (such as opening and closing the database or automatic deletions) in a text file.</p> <p>The default file is auditlog.txt stored in I-Vu\webroot\<system_name>. You can change the file name and include a different path.</p> <p>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.</p> <p>NOTE If you do not archive the log file contents, you should manually delete the oldest entries.</p>
Log audit data to database	<p>Records audit data in a database named audit.mdb that can be accessed by third-party software.</p> <p>NOTE For Access, MSDE, and Derby, the database is automatically created. An Access database is named audit.mdb; a MSDE database is named audit.mdf. The Derby database consists of multiple files in a folder called audit. For MySQL, SQL Server, PostgreSQL, or Oracle, you must create the database manually.</p>
Delete database entries older than ____ days	<p>Automatically deletes entries in the database that are older than the number of days you specify.</p>

Field	Notes
Log errors for invalid URLs	Check this field to write to the core.txt log any time an external source sends a request to the i-Vu® Server application. NOTE Regular maintenance scans by external software can cause the log files to grow large.
Security Policy	
Change Policy	See <i>Location-dependent operator access</i> (page 15) for information on Change Policy .
Remote Access	
Allow remote file management	Lets you access the system using WebDAV.
Operators	
Return operators to previous locations when server reconnects	Returns operators to current tree locations when the server reconnects.
Log off operators after __ (HH:MM) of inactivity	The system automatically logs off an operator who has had no activity in the system for the time period specified. This is a default setting for the system. The System Administrator can change this setting for an individual operator on the Operators page.
Lock out operators for __ minutes after __ failed login attempts	Clear Lockouts removes lockouts for all users. NOTE Restarting the i-Vu® Server application will remove lockouts.
Use advanced password policy	You can place specific requirements on passwords to increase security. See <i>Advanced password policy</i> (page 17).
Permissions	
Permissions	When control programs, views, touchscreen, and BACview® files are created by an original equipment manufacturer (OEM), they cannot be used in a i-Vu® system without the creator's permission. However, the creator can produce a key for a system with a different license that will grant permission to the key's recipient. If you receive a key, put it in the I-Vu X.X\resources\keys folder. The table in the Permissions section of the Security page shows all keys in the that folder. To activate a key, click Add , then browse to the key. To delete a key from your system, select the key in the table, then click Delete . Red text in the table indicates the key has a problem such as it does not apply or has expired. See the Notes column for an explanation.


Communications tab

The fields on this tab let you define controller communication with the i-Vu® Server application and BACnet network communication.

Field	Notes
i-Vu Server BACnet Controller Instance and BACnet Alarm Recipient Instance	The BACnet identifier for the system's server and the alarm recipient. You enter these system properties in SiteBuilder.
Always upload properties from controllers to i-Vu database on mismatch	Automatic uploads are listed in the Audit Log. If you do not check this field, properties must be manually uploaded or downloaded by the operator when a mismatch occurs. NOTE If an automatic upload fails and the operator chooses to do nothing at that time, the upload will be attempted again when he returns to the page where he encountered the mismatch.
Ignore incoming alarms from sources not in this database	The i-Vu® application will ignore alarms from third-party devices not in the database or devices from other i-Vu® systems on the same network.
BACnet Settings	Native i-Vu® system only
Log BACnet Binding Conflicts	The i-Vu® application uses BACnet (dynamic) binding for communication between devices unless your system uses NAT routing. If using NAT, the i-Vu® application uses information in its database to bind to BACnet devices. When checked, the i-Vu® application logs binding conflicts that result from duplicate network numbers or device IDs.

Scheduled Tasks tab

Field	Notes
Automatically delete alarm incident groups which have been closed for more than ___ days	An incident group is all alarms related to a particular incident, such as Off Normal, Fault, and Return to Normal. You can edit this on the Devices > Advanced tab. 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.
Automatically delete expired schedules daily at ___	To ensure there are no time zone conflicts, the i-Vu® application waits 2 days after a schedule expires to delete it.
Remove expired historical trends daily at ___	Deletes trend data that has been in the database longer than then time you specified in the previous field.

Field	Notes
Enable time synchronization of controllers daily at _____	<p>Automatically synchronizes the time on all equipment to the time on the server, adjusting for different time zones and Daylight Saving Time. We recommend that you check this field.</p> <p>The i-Vu® application will send a daily time sync message to each IP network device that is in the system database. IP devices not in the database will not be synchronized. For all MS/TP networks in the database, the i-Vu® application will send a broadcast time sync message. All devices on these networks will be synchronized, regardless of whether or not the devices are in the database.</p> <p> CAUTIONS</p> <ul style="list-style-type: none"> • Make sure that your server's time and time zone setting are correct. • Make sure that each site's time zone setting in SiteBuilder is correct. • To prevent time sync problems when the transition to and from Daylight Saving Time occurs, set the time sync to occur at least 1 hour after the last controller in the system is adjusted for DST. For example, your server and part of your system is in the Eastern Standard Time zone, but you also have controllers in the Pacific Time zone. Your server is adjusted for DST at 2:00 a.m. Eastern Standard Time, but the controllers in the Pacific Time zone are not adjusted until 3 hours later. So you would set the time sync to occur daily at 6:00 a.m. or later. <p>NOTES</p> <ul style="list-style-type: none"> • You can perform system-wide time synchronizations using the Time Sync button on the <i>General tab</i> (page 62). • Between time sync broadcasts, Carrier routers include time sync information in each color request to the devices below the router. This ensures devices without a battery-backed clock will get the time shortly after powering up.

Daylight Saving tab

On this tab, you can adjust the Daylight Saving Time settings for i-Vu Server.

Click **Update** to automatically set the table's **Begin** and **End** dates for the next 10 years based on the system's timezone. This marks all controllers with ExecB drivers for a Parameters download.

If the updated dates are incorrect

If you clicked **Update** but the dates are incorrect, your system's Java timezone data may be out-of-date. Do the following:

- 1 Go to the *Oracle Java SE Download site* (<http://java.sun.com/javase/downloads>).
- 2 Download the **JDK DST Timezone Update Tool (tzupdater-v6.0.zip)**.
- 3 In the i-Vu® interface, go to **System Settings > Daylight Saving**, then click **Import**.
- 4 Browse to the **tzupdater.zip** file, select it, then click **Open**.
- 5 Click **Continue**.

- 6 Restart the i-Vu Server application.
- 7 On the **System Settings > Daylight Saving** tab, click **Update**.

NOTE If you have sites in different time zones that use Daylight Saving Time, you can click **View DST Dates** on the site's **Properties** page to see DST information and time change dates.

Add-ons tab

A i-Vu® system supports add-ons, such as Tenant Billing, that retrieve and use the i-Vu® data.

To install an add-on

- 1 Save the add-on's file (.addon or .war) to your computer.
- 2 On the **System Options > System Settings > Add-ons** tab, click **Browse**, and then open the file.
- 3 Click **Install Add-on**. After a few seconds, the add-on will appear in the **Installed** table, and will be enabled. The table below gives a description of each column.

Column	Notes
Name	The add-on's name.
Path	To open the add-on in a web browser, append this path to your i-Vu® system's address. For example, to start Tenant Billing, enter <code>http://<system_name>/override</code> , or <code>http://<system_IP_address>/override</code>
Version	The version is shown if the author provided the information in the add-on.
Status	If this column shows: <ul style="list-style-type: none"> ○ Running, you can open the add-on in a web browser. ○ Disabled, click Enable to run the add-on. ○ Startup error, select the table row to see an explanation of the error under Details.

- 1 Select an add-on in the **Installed** table to disable or enable it, or to see the following **Details**.

Add-on main page	Click the main page link to open the add-on, if the author provided a main page.
Description	A description of the add-on, if the author provided one
Vendor Name	The add-on's author
Public Data Directory	This public directory contains data generated by the add-on. This data is visible in a web browser.
Private Data Directory	This private directory contains information such as configuration data.

To back up the add-on's private and public data directories

NOTE This procedure will not back up data stored in an external database.

- 1 Select the add-on in the table.
- 2 Click **Save Data**.
- 3 Click **OK**.
- 4 Click **Save**.
- 5 Select the location where you want to save the data, then click **Save**.

To update an add-on

NOTE Add-ons for i-Vu® v6.0 or later systems have a different folder structure than previous versions.

- 1 Select the add-on in the table.
- 2 Click **Remove Add-on and Keep Data**
- 3 Follow the procedure above to install the new version of the add-on.

To uninstall an add-on

- 1 Select the add-on in the table.
- 2 Click **Remove Add-on and Data**.

To register and download your i-Vu® license

To register your software, you must obtain a license from Carrier and then apply it in the i-Vu® interface.

- 1 Login to *ivusystems.com* <http://www.ivusystems.com>, using your email and password.
NOTE If you need a password, email mary.fleiger@carrier.utc.com to request one.
- 2 Select **Request/Download i-Vu Software Licenses**. All your Sites Names/Project Names are listed.
- 3 Select the site/project to register it.
- 4 In the **License Registration Area**., fill in the **Owner Information** and the **Site Information**.
- 5 Click **Register License**.
- 6 Check **I agree to the terms of use**.
- 7 Click **Download License**, then save the license.properties file to a convenient location.

To apply the license to the i-Vu® Pro application

- 1 During the i-Vu® installation, in the **Setup Wizard**, on the **Product License** screen, check **Browse to a different license**, and select the site license you obtained.

NOTES

- Selecting the default license results in a prompt appearing every few minutes in the i-Vu® interface to remind you to apply your site license.
- 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 apply the site license after the installation:

- 1 In the i-Vu® interface, select the **System Options** tree > **License Administration**.
- 2 Browse to the license file.
- 3 Click **Apply**.
- 4 Restart i-Vu® Server using the rebootserver manual command.

Update

In **System Options** on the **Update** tab, click the **Update** button to install .update files (patches, service packs, drivers, language packs, graphics libraries, and help updates).

See below for details on updating the SAL library and applying it to your system.

Update the equipment library

The i-Vu® SAL files update your i-Vu® controllers. The SAL libraries contain control programs, graphics, drivers, screen files, and other important controller data.

Carrier periodically provides updates, which include enhancements and bug fixes.

NOTES

- The library update only changes **default** graphics. If you have edited your graphic in ViewBuilder, it is not updated.
- The last digits in the SAL library name are the release date of the library.
- All of the SAL files will not necessarily have the same <date> revision.
- To ensure that your installation is running the latest software, we recommend that you check *Control Systems Support* <http://www.hvacpartners.com/> for updates. Download the latest SAL files and apply them to all new installations.
- If you are changing to an older SAL file than the current one being used, a warning asks you if you are sure you want to apply an older version.

There are currently 6 SAL files used by the i-Vu® v6.0 application:

- ivu-6.0-factory-<date>.sal (for PIC-based controllers)
- ivu-6.0-upc-open-<date>.sal (for Universal Protocol Converter-based equipment)
- ahub-6.0-<date>.sal (for 39m AHU applications)
- ivu-6.0-universal-controller-<date>.sal (for UC Open and AppController-based applications)
- ivu-4.2-applicationbuilder-<date>.sal (for CCN applications)
- ivu-4.2-discovery-<date>.sal (for CCN PIC applications)

NOTE Keep copies of the latest libraries in a safe place. In the event of a system restore, the updated .sal file must be reapplied.

To check current SAL library version

- 1 Login to the i-Vu® application using the **Installer** role.
- 2 Click **Main Menu** ▼, then select **System Options > Update** tab.
- 3 Click **Current Libraries (.sal)** to view the current SAL libraries and their revision date.

Step 1: Update library

- 1 Save the updated library (.sal file) to your computer.
- 2 Click **Main Menu** ▼, then select **System Options > Update** tab.

NOTE Expand **Current Libraries (.sal)** to see the current SAL libraries and their revision. Compare them to what you downloaded from the *Carrier support website* (<http://www.hvacpartners.com>) to determine if any of them have been updated.

- 3 Click **Update Library** and browse to the updated .sal file that you have saved on your computer, select the file, and click **Open**.
- 4 Click **Continue**.
- 5 When process is complete, the message appears **File added successfully**.
- 6 Click **Close**.

NOTE These changes are not applied to the controllers until you have updated routers and controllers.

Follow these steps to implement the new equipment library:

Step 2: Update the files for the routers

- 1 Select the router that you wish to update in the navigation tree.
- 2 Right-click and select **Driver Properties**.
- 3 Select **Properties** page > **Update** tab.
- 4 If the database contains 2 or more routers, you must check **Change for all control programs of this type** in the **Controller** section.
- 5 Click **Update**. A message appears **Changes the driver and screen file to use the current library version. Continue?**

NOTE If more than one router exists, the additional routers are listed below the **Update** button.
- 6 Click **OK**.
- 7 Click **Accept**.

Step 3: Update the files for the controllers

- 1 Double-click the controller in the navigation tree or right-click and select **Configure** .
- 2 If you have multiple controllers of the same type, enable **Change for all control programs of this type?**.
- 3 Click **Update** under **Controller**. A message appears **Changes the control program, view, driver and screen file to use the current library version. Continue?**
- 4 Click **OK**. When the message **Updated to the library version xx.** appears, click **Close**.
- 5 Repeat steps 1 - 4 for any additional types of controllers.
- 6 Click **Close** again.

Step 4: Update the files for CCN controllers

- 1 In the navigation tree, select the CCN device manager associated with the controllers that are to be updated.
- 2 Select the **Devices** tab and re-scan any controllers that need to be updated by checking **Rescan Controllers Selected Below for Configuration Changes** and clicking **Start Scan**.

Step 5: Apply the update to the routers and controllers

- 1 Select the site level in the navigation tree and then select the **Downloads** page.
- 2 If you wish to apply the new SAL file to your entire system, you can use this page to compare to your navigation tree and verify that you have selected all of your routers and controllers for download.
NOTE Only the CCN Gateway and device managers require download, so the CCN controllers/equipment will not be listed.
- 3 A network's controllers download in the order shown. To change the order, select a controller(s), then drag and drop or click **Move to Top** or **Move to Bottom**.
EXCEPTION If a controller's router requires a download, it will download first regardless of its position on the Download page. Click the **Start** button.

NOTES

- Use **Ctrl+click**, **Shift+click**, or the **Select All** checkbox to select multiple controllers.
 - Up to 5 routers can download simultaneously.
- 4 See To download from the Downloads page in Help for more details.

Appendix: Operator Record

Name _____
Login Name _____
Assigned Role _____
Password _____

Name _____
Login Name _____
Assigned Role _____
Password _____

Name _____
Login Name _____
Assigned Role _____
Password _____

Name _____
Login Name _____
Assigned Role _____
Password _____

Name _____
Login Name _____
Assigned Role _____
Password _____

Name _____
Login Name _____
Assigned Role _____
Password _____

Document revision history

Important changes to this document are listed below. Minor changes such as typographical or formatting errors are not listed.

Date	Topic	Change description	Code*
10/30/18	Operators and operator groups	Removed note about hierarchical servers.	C-O-CY-F
1/13/16	To apply a schedule to equipment.	Added note for 50 character maximum when entering a schedule name.	A-TS-RD-E-BK

* For internal use only



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