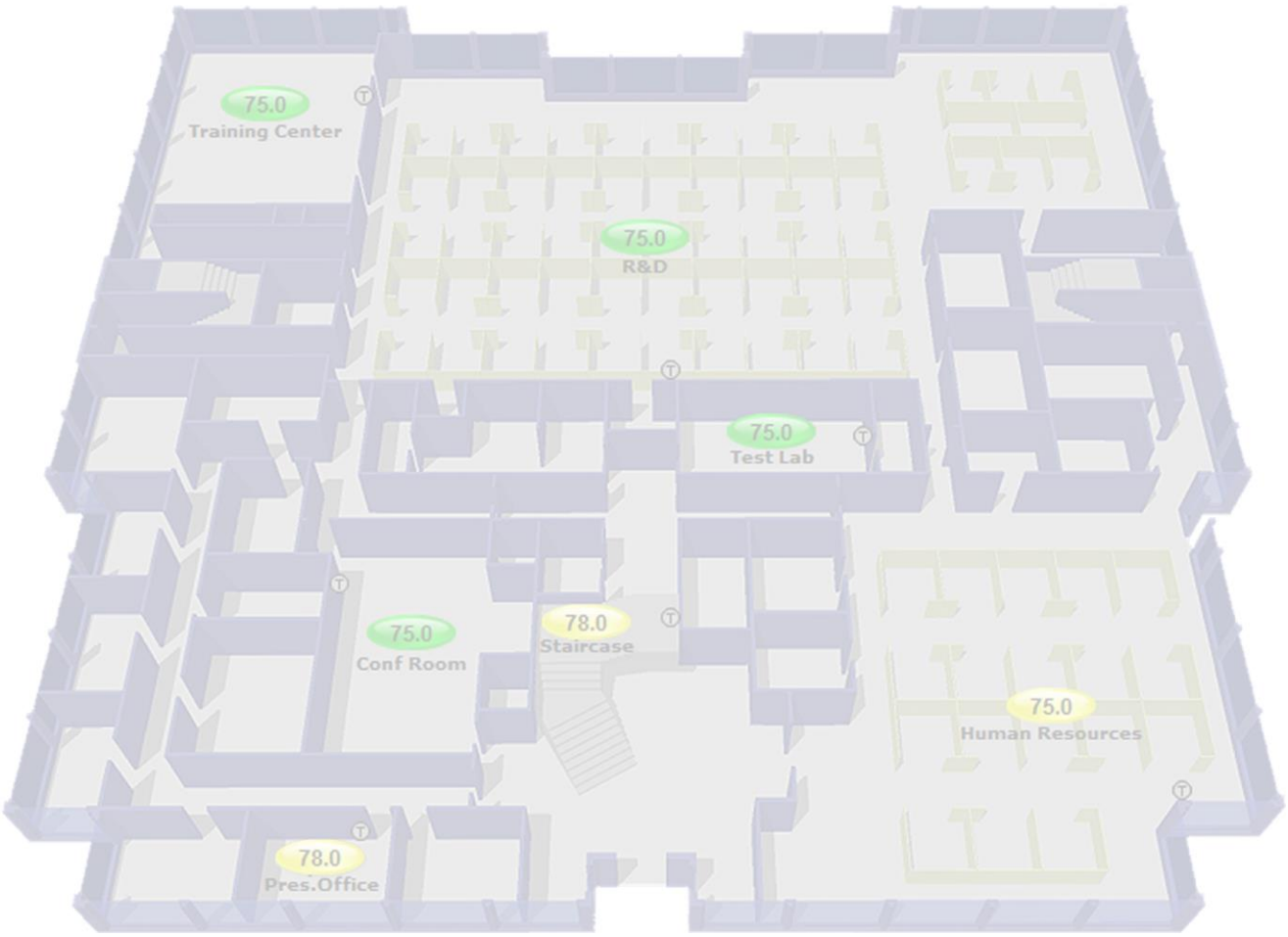
i-Vu® Pro v9.0

Owner's Guide



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 Verify that you have the most current version of this document from **www.hvacpartners.com**, the **Carrier Partner Community** website, or your local Carrier office.

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

Contents

Accessing your system

Your system details

Network Name: To access the system, launch a web browser and type in http://_____.

- Your Login Name is _____.
- Your Password is

  NOTE Keep this in a secure location.
- Your i-Vu®'s IP address is

  _____.

To change your password

1 Click  , then select **System Options** > **My Settings** tab.

2 Click **Change password**. Enable this field, then type your current and new passwords.

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  , then select, select **System Options** > **Operators** tab.

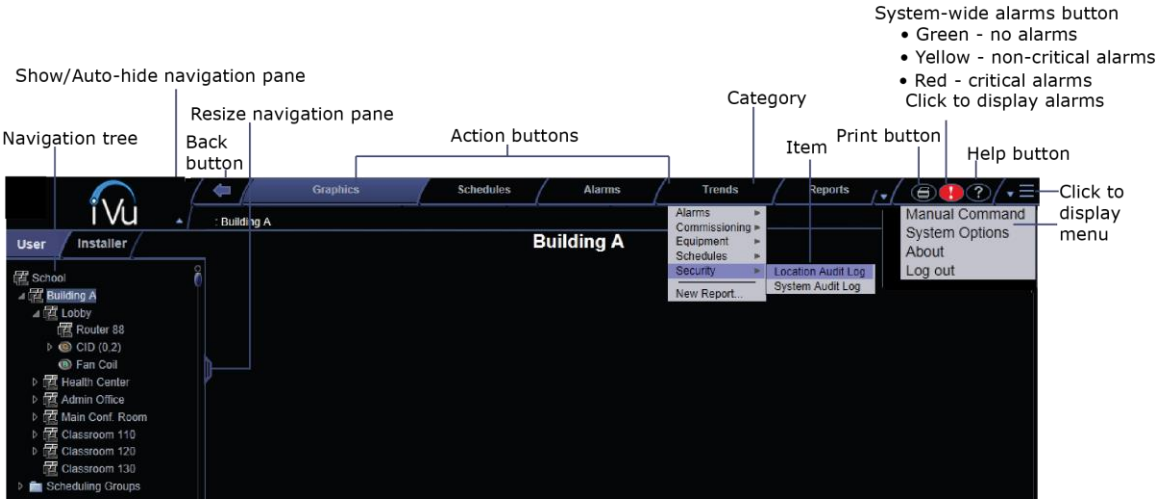
2 Add additional operators with appropriate access roles.

3 Keep a record of your additions and changes.

4 Click **OK** or **Apply**.

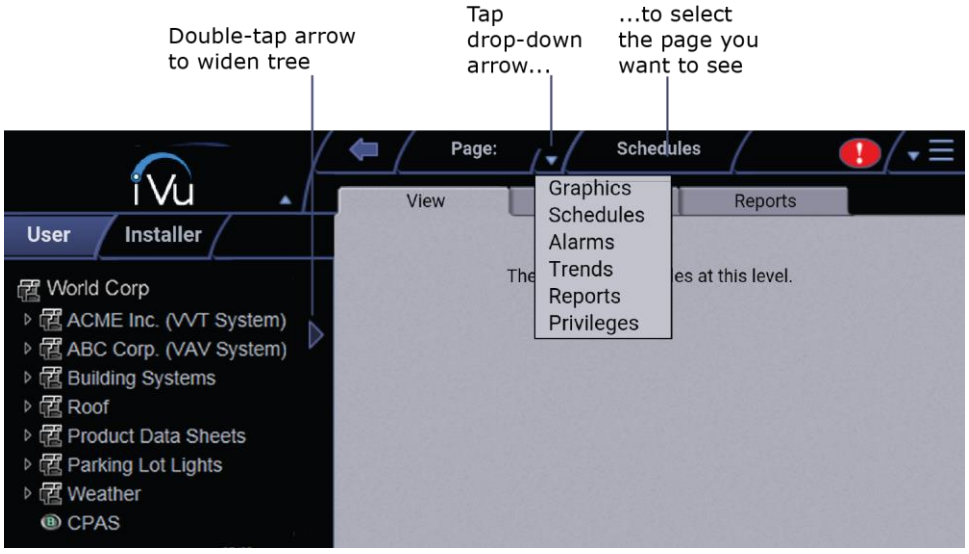
Getting to know the interface

Computer and large-screen mobile interface



Small-screen mobile interface

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



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

NOTES

- After you log in, you will see the page defined as your starting location on the **My Settings** page. To change your opening page, see *To change My Settings* (page 17).
- Roles/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/privileges.
- Use only the i-Vu® interface to navigate; do not use the web browser's navigation buttons.
- Click on any tab to refresh the page.

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 27).

System Options tree

Click  > **System Options** (page 68) for the setup and maintenance of your system.

My Settings	Lets you change settings that are specific to you such as your password and viewing preferences. See *To change My Settings* (page 17).
System Settings	Contains the system-wide settings that control the way the i-Vu® system runs. See *System Settings* (page 70).
Operators **Privilege Sets** **Operator Groups**	Lets your system administrator define operators and what they can see and do in the i-Vu® interface. See *Operator access* (page 10).
Categories	Lets you define categories for *schedules* (page 30), alarms, *graphics* (page 37), properties, trends, and reports. Categories allow you to view or control groups of similar items.
ACxelerate	Lets you verify and report the status of VAV dampers and reheat valves in VAV boxes. See ACxelerate automated commissioning.

Scheduled Reports	Shows any report that was scheduled on the report's page. See To manage scheduled reports for details.
Semantics	Lets you apply semantic meaning to locations in the system. See Semantic tagging.
Connections	Lets you set up, start/stop, and troubleshoot your network connections.
Services	Shows internal processes of the i-Vu® application for troubleshooting.
Licenses & Add-ons	Lets you update your i-Vu® license, licenses for controllers and add-ons. See Registering and downloading your i-Vu® license, To determine the number of third-party points required for a controller, and *Add-ons* (page 81).
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.
API Keys	Lets you create an API key to use with a REST API. See To create and use an API key.
Resource Management	Lets you store and manage files through the system directory. See Managing system files.

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.

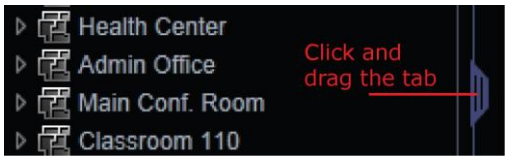
   NOTE Use only the i-Vu® interface to navigate; do not use the browser's navigation buttons.
5. Click on any tab to refresh the page.

To show, hide, or resize the navigation tree

On a computer or large screen mobile device

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

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



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

On a small-screen mobile device

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

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

Viewing vector graphics

When viewing a vector graphic of a floorplan or site map in the i-Vu® interface, you can manipulate the views using buttons on the **Graphics** page.

The buttons are only present if, in ViewBuilder, when editing the **SVG Floorplan** Control Properties > **General** tab, you select them to display.

Select in ViewBuilder...	to see this button on the i-Vu® Graphics page	Click button to...
Add 3D Toggle		See 3D walls in your floorplan.
Add Ducting Toggle		See ducting, if it was integrated into the floorplan graphic. **NOTE** When the ducting is visible, click on a solid rectangle (representing equipment) to open the corresponding equipment graphic.
Allow Zoom		Switch from a summary graphic to individual areas.
N/A	 	Scroll through areas one at a time.

Zooming in and out

On a computer

- 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.

On a mobile device

Apple® iPad and iPhone

Double-tap to zoom in/out.

Microsoft® Surface™

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

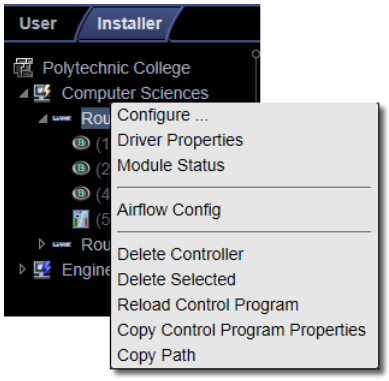
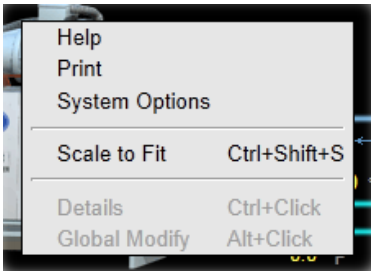
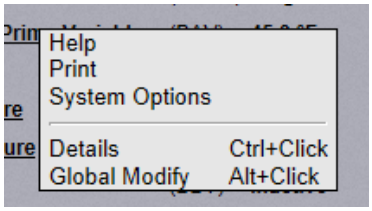
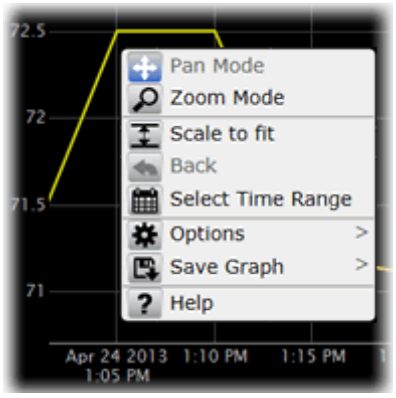
Google™ Nexus™ and Nexus Lumia

Pinch-zoom to zoom in/out.

Using right-click menus

On a computer

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

A tree item	The action pane
	
A property	**A trend**
	

On a mobile device

To access the right-click menu for:

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

To print the action pane

On a computer

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

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

On a mobile device

Touch  and then select **Print**.

Colors and status in the 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
	Mustard	none	In equipment when running i-Vu Pro Design Server
	Purple	0 or 15	In a controller—non-operational or no communications In equipment—a hardware or software error
	Charcoal	14	In a controller—a download is required or is already in progress In equipment—a controller has stopped
	Coral	13	Control program error
	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

Color	Color Name	Status Code	Condition Indicated
	Gray	1	Unoccupied/inactive
	White	10	Occupied/active
	Light green	6	Free cooling
	Green	5	In a controller—operational or operational read only In equipment—No heating or cooling

The colors below are from the Classic SVG Floorplan Color palette. You can change the color scheme in all vector floorplans to either Modern or Color Sensitive here:

1 Browse to http://<system_name>/_svgfloorplan.

2 Click the desired color palette and close the folder.

NOTE Your selection takes affect immediately for all vector floorplans in your system and will not affect any floorplans that were not created as vector (.svg) graphics.

Colors and setpoints

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

Five conditions may affect a zone's thermographic color:

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

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

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

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 15).

2 Define privilege sets by job function. See *Privilege sets* (page 10).

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 15).

See *My Settings page* (page 17) to change the operator's settings .

To access the i-Vu® interface, an operator must enter his user name and password. See the *advanced password policy* (page 23) to change the rules for passwords.

Restricting operator access

To restrict access to your system, you can:

- Restrict an operator's privileges
- Use *location-dependent operator access* (page 19)
- 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 11). The Administrator creates privilege sets and assigns them to operators and operator groups.

Privileges

This privilege...	allows an operator to...
Installer	• 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. • Enable and set up advanced security features such as *location-dependent operator access* (page 19) and the *advanced password policy* (page 23). • Add and remove i-Vu® add-ons.

This Access privilege...	allows an operator to access (but not edit)...
Trees	
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  > **System Options**.
Action Buttons	
Access Alarms	alarms.
Access Logic Pages	**Logic** pages.
Custom Categories	
Access User Category 1-5	anything in a category that has the same privilege assigned to it. See "To create a custom privilege" below.

This Edit privilege...	allows an operator to edit properties such as...
Setpoints	
Edit Setpoint Parameters	occupied and unoccupied heating and cooling setpoints.
Edit Setpoint Tuning Parameters	demand level setpoint offsets, thermographic color band offsets, heating and cooling capacities and design temperatures, color hysteresis, and learning adaptive optimal start capacity adjustment values.
System Display Properties	
Edit Area Name	area display names.
Edit Notes	note entries.
Edit Control Program Name	control program display names.
Edit Category Assignments	Alarm, Graphic, Trend, and Report category assignments.
Control Program Properties	
Edit Alarm Configuration	enabling/disabling alarms and editing alarm messages, actions, categories, and templates.

This Edit privilege...	allows an operator to edit properties such as...
Edit Calibration Parameters	point calibration offsets.
Edit History Value Reset	elapsed active time and history resets, and runtime hours.
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 Trend Parameters	enable trend logging, log intervals, and log start/stop times.
Edit Tuning and Logic Parameters	gains, limits, trip points, hysteresis, color bandwidths, design temperatures, and optimal start/stop.
Controller Driver Properties	
Edit Hardware Controller Parameters	driver properties.
Protected Parameters	
Edit Restricted Parameters	properties the installer restricted with this privilege.
Edit Critical Configuration	critical properties the installer protected with this privilege.

This Functional privilege...	allows an operator to...
My Settings	
Change My Settings	edit his preferences on the **My Settings** page.
Manage Alarms	
Acknowledge Non-Critical Alarms	acknowledge all non-critical alarms.
Force Normal Non-Critical Alarms	force non-critical alarms to return to normal.
Delete Non-Critical Alarms	delete non-critical alarms.
Acknowledge Critical Alarms	acknowledge all critical alarms.
Force Normal Critical Alarms	force critical alarms to return to normal.
Delete Critical Alarms	delete critical alarms.
Manage Alarm Messages and Actions	add, edit, and delete alarm messages and actions.
Manage Schedules	
Maintain Schedules	add, edit, delete, and download schedules.
Maintain Schedule Group Members	add, edit, and delete schedule groups.
Manage Reports	
Maintain Graphs and Reports	add, edit, and delete trend graphs and reports. Also required for Time-lapse.
Execute Audit Log Report	run the **Location Audit Log** and **System Audit Log** reports.
Manage Display Options	
Maintain Alarm Templates	edit Alarm Template and Reporting Action Templates.
Maintain Categories	add, edit, and delete categories.
Maintain Semantics	add, edit, and delete semantic tags and rules.

This Functional privilege...	allows an operator to...
System Support	
Access Commissioning Tools	access: • Equipment Checkout • Airflow Configuration • Trend, Report, and Graphic categories that require this privilege • Discovery tool
Program Operations	reload a control program, revert to definition defaults, and copy control program properties
Remote File Management	Lets you access the system directory through **Resource Management** in > **System Options**. Enable this feature in > **System Options** > **System Settings** > **Security** > **Remote Access**.
System Modification	
Maintain System Parameters	edit all properties on the **System Settings** page.
Maintain Connections	edit **Connections** page properties.
Download Controllers	mark equipment for download and initiate a download.
System Shutdown	issue the Shutdown manual command that shuts down the i-Vu® Server application.
Engineer System	• log in and make database changes in SiteBuilder • use the notify manual command • access the **Configure** and **Set up Tree** right-click menus in the i-Vu® interface • add text in the **Notes** field on an equipment's Properties page • set Device Passwords in SiteBuilder, or the i-Vu® interface, to restrict access to the controller setup pages through the Service Port (applies only to routers with the drv_gen5 driver)
Run Manual Commands	
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.
SOAP Access	
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.
Use Digital Signatures	
Checked By	Add their e-signature to a scheduled report PDF verifying that they checked the report.
Approved By	Add their e-signature to a scheduled report PDF verifying that they approved the report.
Delete Signature	Delete all e-signatures from a scheduled report PDF.

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 11) 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

When you create a new system in SiteBuilder, you assign a login name and password to the administrator operator. This administrator operator, with the Installer privilege set, sets up each operator in the i-Vu® interface by entering the necessary settings and assigning one or more *privilege sets* (page 10) to the operator.

NOTES

- The **Installer** privilege set has more privileges than the **Administrator** privilege set and is necessary for commissioning equipment.
- For security purposes, do not use `Administrator` or `Installer` as the actual **Login Name**.

You can generate an Operator Information report to view login information, assigned privilege sets, and other information pertaining to a specific operator. See Reports.

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.

CAUTION Passwords can be forgotten. To ensure access to the i-Vu® administrative functions, assign the Installer or Administrator privilege set to at least 2 operators.

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. Login names of deleted operators cannot be reused.
Change password	Enable this field, then type the current and new password and then confirm. Limit is minimum of 8 and maximum 40 characters of any type. **NOTE** An operator can change their password on the *My Settings page* (page 17), 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 their next login.
Exempt From Password Policy	If **Use advanced password policy** is enabled on the **System Settings** > **Security tab** (page 74), select this option if you do not want the policy to apply to this operator.

Field	Notes
Ready to e-sign	This checkbox indicates the operator can e-sign documents. It only appears checked when **E-signature file uploaded** and **Signing privileges granted** are checked. • **E-signature file uploaded** indicates the operator has *uploaded a valid e-signature file* (page 17). • **Signing privileges granted** indicates the operator has *e-signature signing permissions* (page 11). **NOTE** These checkboxes are read only.
Logoff options	If **Log off operators after __ of inactivity** is enabled on the **System Settings** > **Security tab** (page 74), select one of the 3 logoff options.
Starting Location and **Starting Page**	The i-Vu® location and page that appears after the operator logs in.
System-wide Privilege Sets	Select the privilege set(s) to assign to the operator. The **Effective System-wide Privileges** list show which privileges the operator will have. **NOTES** • Click **Show current privileges only** to see only the selected privilege sets and privileges. • A grayed out privilege set with a group name beside it indicates the operator is inheriting that privilege set from the group.

TIP To test the settings and privileges that you gave to an operator, you can open a second browser session on your computer and log in as the operator. For instructions on opening a second session in the browser you are using, see *Setting up i-Vu® client devices and web browsers* (page 63).

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 10) 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.

To change My Settings

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

- Password
- Viewing preferences
- E-signature file

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

To change your settings:

1. Click  > **System Options** > **My Settings**.
2. Make changes on the **Settings** tab. See table below.
3. Click **Accept**.

Field	Notes
Change password	Enable this field, then type your current and new password and then confirm. Limit is minimum of 8 and maximum 40 characters of any type.
Starting Location and **Starting Page**	The i-Vu® location and page that appear after you log in. **NOTE** You must click **Apply** first if you have entered any other changes.
Language	The language and formatting conventions you want to see in the i-Vu® interface. **NOTES** • If you will be using a language other than English, see Setting up your system for non-English languages for additional requirements. • If support for your selected language is removed in SiteBuilder, the i-Vu® application will automatically assign the System language to you.
Automatically collapse trees	Expands only one tree branch at a time.
Automatically download schedules on each change	Select to automatically download all new schedules that you create and schedules that you change.
Play sound at browser when server receives	Check **Non-critical alarms** or **Critical alarms** if you want the system to audibly notify you when that type of alarm is received. You can specify a different sound file. • Edge®, Firefox®, and Safari® support .wav, .mp3, or .au files. • Google™ Chrome™ supports .wav or .mp3 files. 1 Put your file in the **webroot_common\lvl5\sounds** folder. 2 In the **Sound File** field, replace **normal_alarm.wav** or **critical_alarm.wav** with the name of your sound file. **NOTE** You can put your sound file anywhere under the **I-Vu_Pro_x.x** folder, but you must change the path in the **Sound File** field.
E-signature File	An e-signature file is required to add an e-signature to Scheduled Reports. 1 Click **Choose File** and select your e-signature file. 2 Click **Upload**.

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 10) 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 accessing the Configuration tree or performing a system shutdown.

Local privileges allow an operator to perform functions in a specific area of the system, such as editing setpoints or viewing alarms. Assigning any local privilege to an operator also allows him to change his password and set preferences on his *My Settings* (page 17) 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 11).

System-wide privileges		
Access Privileges	**Trees** Access Groups Access Config Items	
Functional Privileges	**My Settings** Change My Settings **Manage Alarms** Acknowledge Non-Critical Alarms Force Normal Non-Critical Alarms Delete Non-Critical Alarms Acknowledge Critical Alarms Force Normal Critical Alarms Delete Critical Alarms **Manage Schedules** Maintain Schedule Group Members **Manage Reports** Maintain Graphs and Reports Execute Audit Log Report **Manage Display Options** Maintain Alarm Templates Maintain Categories Maintain Semantics **System Support** Access Commissioning Tools Program Operations Remote File Management	**System Modification** Maintain System Parameters Maintain Connections Download Controllers System Shutdown Engineer System **Run Manual Commands** Manual Commands/Console Operations Manual Commands/File IO Manual Commands/Adv Network Manual Commands/Unrestricted **SOAP Access** Remote Data Access-SOAP Do not audit changes made using SOAP (Web services) **Use Digital Signatures** Checked By Approved By Delete Signature

Local Privileges		
Access Privileges	**Trees** Access Geographic Locations Access Network Items **Action Buttons** Access Alarms Access Logic Pages **Custom Categories** Access User Category 1 - 5	

Local Privileges	
Edit Privileges	**Setpoints** Edit Setpoint Parameters Edit Setpoint Tuning Parameters **System Display Properties** Edit Area Name Edit Notes Edit Control Program Name Edit Category Assignments **Control Program Properties** Edit Alarm Configuration Edit Calibration Parameters Edit History Value Reset Edit Manual Override Parameters Edit Point Setup Parameters Edit Trend Parameters Edit Tuning and Logic Parameters **Controller Driver Properties** Edit Hardware Controller Parameters **Protected Parameters** Edit Restricted Parameters Edit Critical Configuration
Functional Privileges	**Manage Alarms** Manage Alarm Messages and Actions **Manage Schedules** 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 10).

Recording reasons for edits (21 CFR Part 11)

The i-Vu® application provides support for 21 CFR Part 11. With this feature enabled, the i-Vu® application can require an operator to record a reason for changing an equipment property, or acknowledging an alarm, 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.

To set up equipment to require reasons for changes

1 On the i-Vu® navigation tree, right-click the equipment, then select **Configure**.

2 Check **Require operator to record any changes to control program and when acknowledging alarms**.

NOTE In order to enable this feature to record changes, you must also enable **Alarm requires acknowledgment** and/or **Return requires acknowledgment** on the **Alarms** > **Enable/Disable** tab.

3 Click **Save**.

NOTE You can also turn this setting on in SiteBuilder in the equipment's properties dialog box.

To view reasons for changing equipment properties

1 On the 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**, check **Reason**.

4 Click **Run**.

Advanced password policy

You can set up an i-Vu® Pro 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 70) for information on all the other fields.

Field	Notes
Use advanced password policy	Enable this field to put restrictions on passwords. An operator's login name and password must be different when this policy is enabled. After you change the password policy, any operator whose password doesn't meet the new requirements will not be locked out of the system, but will be prompted to create a new password. **NOTE** This password policy also applies to site-level passwords.
Passwords must contain	You can specify how many characters and which of the following types of characters a password must contain: • Numbers • Special characters—any keyboard character that is not a number or letter. • Letters—uppercase, lowercase, or both.
Cannot be changed more than once every __ days.	Enter a number to limit how often users can change their passwords. When set to 0, users can change them as often as they want.
May not be reused until __ different passwords are used.	Enter a number between 1 and 20. Enter 0 to reuse passwords without a delay.
Expire after __ days	Enable to set the number of days an operator can use his password before the system requires him to change it. Enter a number between 1 and 999.
Force expiration	Click this button to force every user's password to expire. Each user will be prompted to change their password when they next attempt to log in to the 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 28).
- Do not include preheating or precooling time in your schedules. *Optimal Start* (page 57), another cost-saving strategy, automatically calculates and controls precise preheating and precooling routines.
- If your system has no need to run schedules, you can turn off this feature. First, delete any existing schedules. Then go to the **System Options** (or **System Settings**) > *General tab* (page 70), and check the box **Disable Schedules feature**.

Creating and modifying schedules

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 *Effective schedules* (page 28).

To print schedules

1 Select a navigation tree item and click **Reports** .

2 Click **Schedules** > **Schedule Instances** or **Effective Schedules**.

3 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.

To apply a schedule to equipment

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

1 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

2 Click **Schedules**, then **Configure** tab.

3 Click **Add**.

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

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

5 Select a **Type**. See table below.

6 Type a schedule name in the **Description** field (50 characters maximum).

7 Enter desired values in the fields below **Description**.

8 On the graph, change a time segment's **Start** and **End** times by doing one of the following:

- Click the segment, then type the times in the **Start** and **End** fields.
- Click and drag either end of the segment or the entire segment.

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

10 Click **Accept**.

Select this Type...	To use the schedule...
Weekly	Every week on the specified days
Date	On a single, specified date
Date Range	Between 2 specified dates
Date List	On multiple, specified dates
Wildcard	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, click  > **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 26).

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.

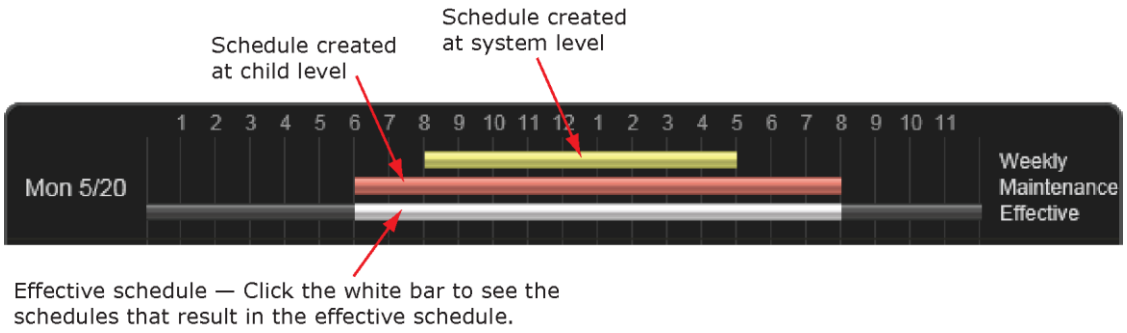
3 Edit the fields you want to change or click **Delete**.

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.



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

<table>
<tr><th>Feature</th><th>Description</th></tr>
<tr><td>Hierarchy</td><td>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:
Add a schedule at the child that overrides the current schedule. See the Priority feature below.
Set the child to ignore the parent schedules. To do this, select the child item on the tree, then go to Schedules > Configure. Select the schedule, then click Ignore Schedules above this level. You can then add a different schedule for the child.
Any schedule change that you make to an item affects it and all of its children.</td></tr>
<tr><td>Priority</td><td>You must assign one of the following priorities to every schedule.<table><tr><th>Use...</th><th>For...</th></tr><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></table>EXAMPLE For a school, you define:
A Normal schedule that has it occupied every Monday–Friday, 6 am–5 pm
A Holiday (unoccupied) schedule for the week of Spring Break
An Override schedule on the first day of Spring Break from 9 am–1 pm for the cafeteria only where a teacher's meeting will be held.</td></tr>
<tr><td>Type</td><td>You must assign one of the following types to every schedule.*Weekly
Date
Date Range
Date List
Wildcard
Continuous
Dated Weekly
See To apply a schedule to equipment (page 26) for a description of each type.EXAMPLE For a school, you define the following 3 schedules:
Full calendar year: Normal, Weekly, Monday–Friday, 6am–5pm
Summer months: Holiday, Continuous, 12am June 1st –11:59pm August 31st
Work days in summer months: Override, Dated Weekly, Monday–Thursday, 9am–2pm</td></tr>
</table>

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

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 one of the following microblocks:

- Carrier Schedule
- Carrier Schedule with TLO and Override Status
- BACnet Time Clock with TLO and Override Status
- BACnet Modeled Schedule

Creating a custom schedule category

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

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.

PREREQUISITES

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

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	• 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: • **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 `/_common/lvl5/graphics/patterns/xxx.gif`, where xxx.gif is any .gif file in the **webroot_common\lvl5\graphics\patterns** folder. 
Priority Description	The name used in the i-Vu® interface.
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**.

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

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

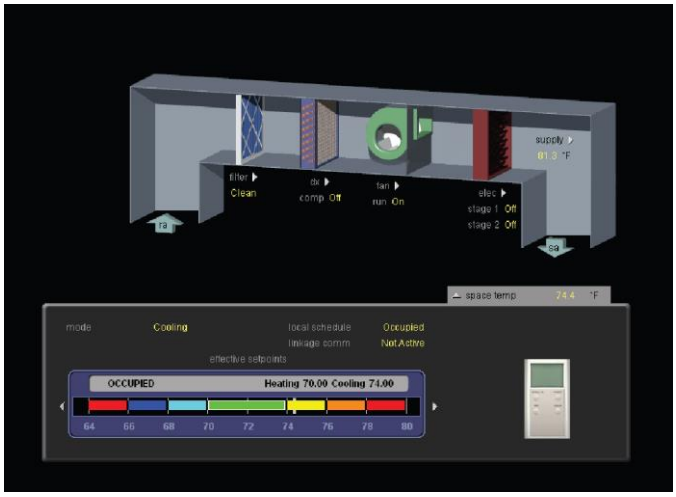
Graphics pages (page 35)

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 54) on a Graphics page.

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



Logic pages (page 43)

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

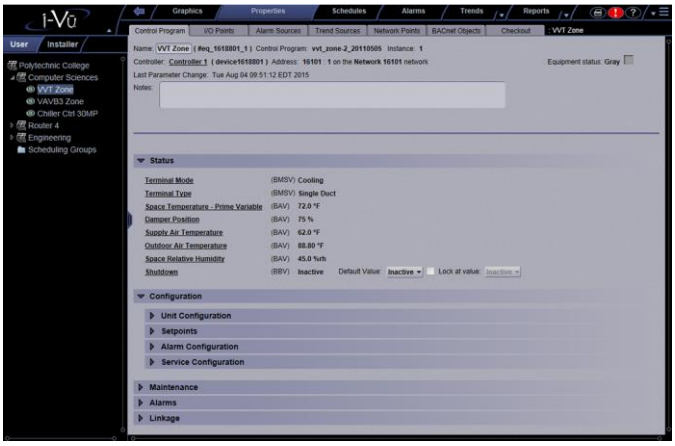
Properties pages (page 40)

You can monitor and control point sources.

1 Select the equipment in the navigation tree.

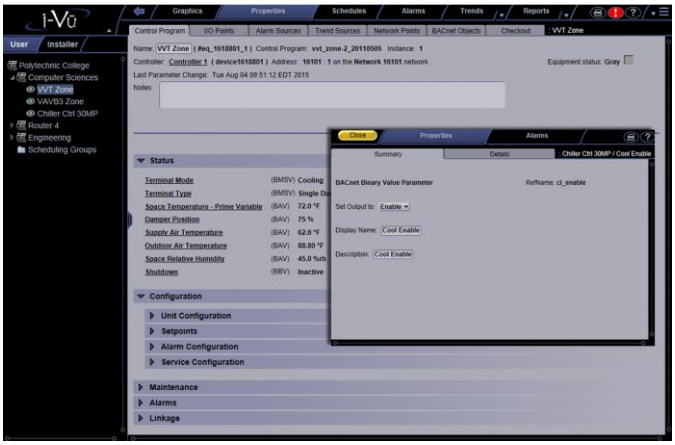
2 Click **Properties** page > **Control Program** tab.

3 Expand the plus sign next to the desired table.



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 items that may appear on a graphics page are:

- Button or switch to turn equipment on or off
- Input field to set a property value
- Drop-down list to select a state
- Interactive zone sensor to override an unoccupied schedule
- Setpoint graph to adjust *setpoints* (page 54)
- Trend graph to view trend information
- Link to jump to another i-Vu® page or to the Internet
- A data table, chart, or color map that pulls information from a custom report.

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 45) 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.
- When a chart that is based on a report is displayed on a Graphics page, you can hover over various points on the chart to see values. You can also click on each item in the legend to turn that information on and off. See "Using a custom report as the source for a Graphics page" in i-Vu® Help for more information on a chart.

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:
   - Change for this control program only
   - Change for all control programs of this type on this network only
   - Change for all control programs of this type

NOTES

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

3 Do one of the following:

If the graphic is...	
In the **Views Available** list	a. If the system has other control programs of this type, select which control programs you want to change: • Change for this control program only • Change for all control programs of this type on this network only • Change for all control programs of this type b. Select the graphic, then click **Attach**. c. Click **Save**.
Not in the **Views Available** list	a. Click **Add New Equipment**. b. If the system has other control programs of this type, select which control programs you want to change: • Change for this control program only • Change for all control programs of this type on this network only • Change for all control programs of this type c. Browse to select the view file. d. Click **Continue**. e. Click **Save**.

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.
    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 has  beside it in the **Attached** list. Requires 4.x or later drivers.
- You can click **Delete Unused** in 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 In the **Views** section, select a file and click **Edit File** to download.

3 Open ViewBuilder.

4 Select **File** > **Open.** Browse to your saved graphic and click to open.

5 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 any spaces 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, double-click the item that the graphic is attached to, or right-click and select **Configure**.

2 In the **Views** section, select a file and click **Edit File** to download.

To put the edited graphic back on the server

1 On the i-Vu® navigation tree, double-click the item that the graphic is attached to, or right-click and select **Configure**.

2 In the **Views** section, click **Add New**.

3 Browse to select the .view file, then click Continue.

4 Click **Save**.

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.

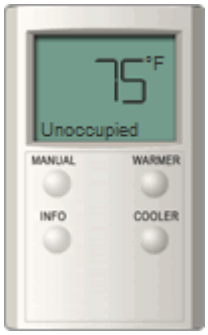
3 Select the category in the **Category** field.

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

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.

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

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.

To control equipment using an interactive zone control

An equipment graphic may include an Interactive Zone control that provides you with the following control.

To...	Click...
View or change temperature	Click  . Use  to raise or lower the setpoint.  **TIP** Check the **Show Zone Color** option in the control's properties in ViewBuilder to match the color of the control's border with the thermographic color of the zone.

Set timed override	Click  . Use  to override the schedule and put the zone in an occupied state.
	  ◦ **0** — No override is active.
	  ◦ **999** — Continuous override is active. The override remains in effect until the schedule transitions to occupied or until you cancel it.
	  ◦ Any other number — Number of minutes remaining until the next transition to an unoccupied state.
	To cancel an override and return control to the schedule, continue clicking  until the display shows 0.

View or change fan speed	Click  . Use  to change the fan speed. **NOTE** Check the **Allow Fan Adjustment** option in the control's properties in ViewBuilder to enable fan speed control.

Click **Accept** to confirm changes.

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 Check out point setup for details.

Use **Properties** pages to:

- View the status of a piece of equipment. See *Colors and status in the i-Vu® interface* (page 8).
- View or change the equipment point/properties currently stored in the controller.
- Commission equipment
- Set up Linkage.

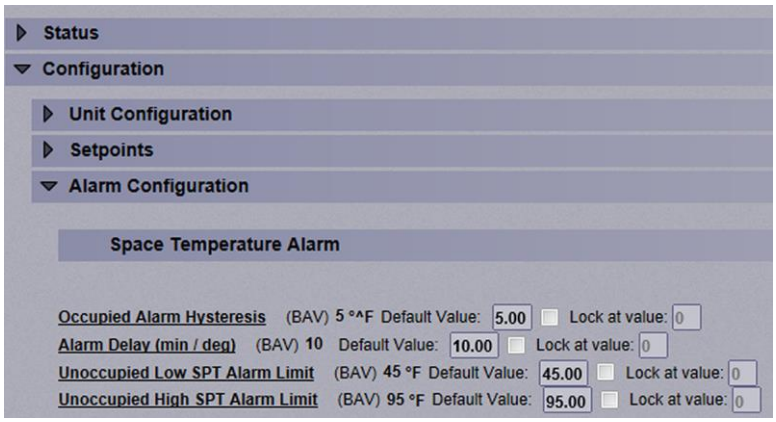
Refer to your individual controller's *Installation and Start-up Guide* for detailed explanations of the points/properties.

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.



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 45) 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.
- A yellow dashed box around a value indicates the value is locked or forced.

Point types

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

Code	Point type
AI	Analog Input
ANI	Analog Network Input
ANI2	Analog Network Input 2
ANO	Analog Network Output
ANO2	Analog Network Output 2
AO	Analog Output
ASVI	BACnet Analog Sensed Value Input
AV	Analog Value
BAI	BACnet Analog Input
BALM	BACnet Alarm
BAO	BACnet Analog Output
BAV	BACnet Analog Value
BBI	BACnet Binary Input
BBO	BACnet Binary Output
BBV	BACnet Binary Value

Code	Point type
BFM	Floating Motor
BI	Binary Input
BMSV	BACnet Multi-State Value
BNI	Binary Network Input
BNI2	Binary Network Input 2
BNO	Binary Network Output
BNO2	Binary Network Output 2
BO	Binary Output
BPTA	Pulse to Analog Input
BPWM	Pulse-Width Output
BRS	RS Sensor
BRSF	RS Sensor Fan
BSVI	BACnet Binary Sensed Value Input
BTLO	Timed Local Override
BTRN	Trend Log
BV	Binary Value
DI	Digital Input
DO	Digital Output
EVT	BACnet Alarm
POLLAVG	Average Analog Properties
POLLMAX	Maximum Analog Properties
POLLMIN	Minimum Analog Properties
POLLTOT	Total Analog Properties
PTA	Pulse to Analog Input
TLO	Timed Local Override

Logic pages

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

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

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

To view a Logic page

1. Select a custom control program on the navigation tree.
2. Click **Logic**.
3. Click a microblock to view its details.

To locate a microblock, section, or label

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

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

To change properties, alarms, or trends

1. Click a microblock on the equipment's **Logic** page.
2. In the microblock pop-up, click the **Properties**, **Alarms**, or **Trends** button.
3. Change properties, alarms, or trends for that microblock in the same way that you would make changes on a regular *Properties* (page 40), Alarms, or Trends page.
4. Click **Accept**.

NOTE Right-click a value, then select **Global Modify** (page 45) to view and change the property in other control programs.

Using a Logic page to troubleshoot

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

Unexpected feedback	Possible cause
Space temperature reads excessively high or low	• The sensor has a short (or open) circuit. Verify wires are properly connected at the sensor and controller. • A sensor is missing or configured incorrectly. Open the sensor or input microblock from the Logic page to verify its configuration.
Equipment displays an unexpected color - effective setpoints are different than the programmed setpoints	**NOTE** Equipment operates using effective setpoints. Open the Setpoint microblock from the Logic page and check the following: • Hysteresis • Demand Level • Optimal Start • Timed Local Override (TLO) • Setpoint Adjust
Gaps in trend data on trend graph	Usually gaps result if network communication was disrupted or a point was temporarily disabled. If the gap is not the result of interrupted communication, send reports more frequently. From the Logic page, open the trend microblock that displayed the gap in data, then decrease the notification threshold so that it is approximately 40% of the buffer size (allocated memory size) for that microblock.
The i-Vu® application is not receiving alarms from a BACnet alarm microblock	Locate the microblock on the Logic page. If the color square on the microblock is black, the alarm is disabled. To enable it: **1** Click the microblock. **2** In the microblock pop-up, click the **Alarms** button. **3** On the **Enable/Disable** tab, select **Potential alarm source**.
The equipment is on when I expect it to be off, or off when I expect it to be on	Use the Logic page to determine whether the program is sending an unexpected signal and why, or if the problem is with the physical equipment. For example, the On-Off-Auto (OOA) switch on the controller for that equipment may be locked in the On (Hand) position.
Sensor value on the Properties page does not match the reading from handheld sensor	Calibrate the sensor. On the Logic page, check to see if the output point is locked on.

Changing multiple microblock properties

Two 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.
   - Right-click the property and select **Global Modify.**

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

NOTES

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

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

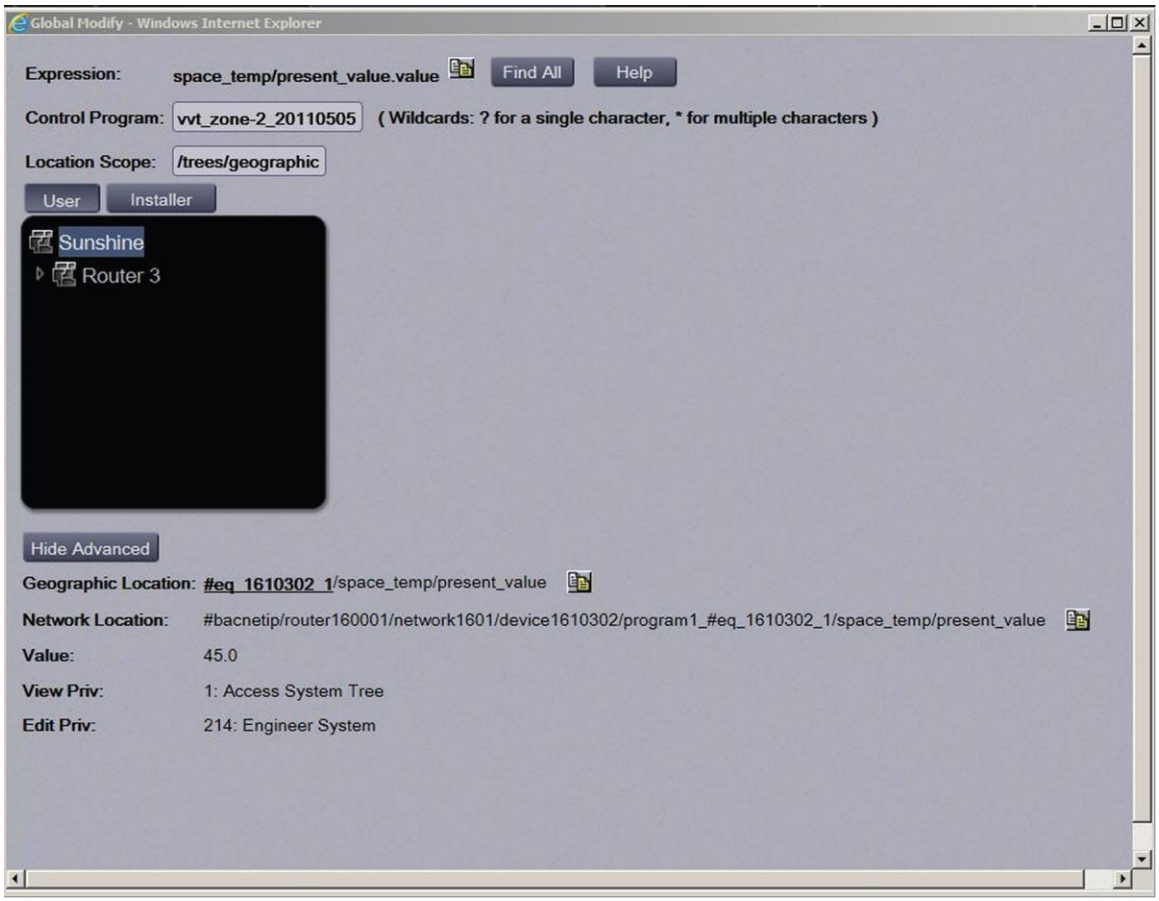
  `vav*z` matches vavz, vav**1**z, vav**x**z, vav**12345**z

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

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

  `*` matches any control program

- Click **Show Advanced** to view the location, value, and privileges associated with this property.



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

5 Click **Find All**.

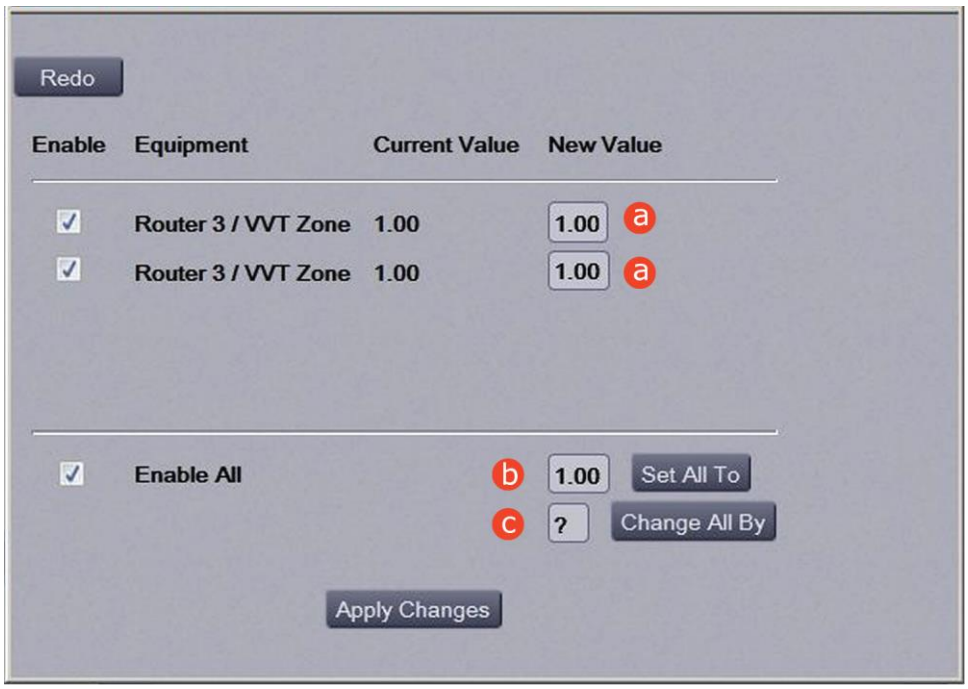
6 Select the properties in the list that you want to change.

7 Do one of the following:

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

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

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



8 Click **Apply Changes**.

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

To use Global Copy

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

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

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

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

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

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

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

5 Check or uncheck items as needed.

6 Do one of the following:

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

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

Checking controller status

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

- View the status of controllers
- View controller information such as address, model, driver, and .view files included in download
- *Download or upload to resolve a mismatch* (page 52)
- 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 or the system level 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.	

Status column message	Hover text message	Notes
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® Express application.
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® Express application.
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.	

Handling parameter mismatches

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

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

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

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

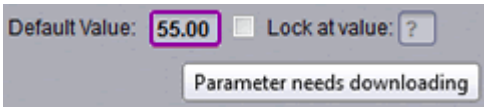
To find mismatches in your system

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

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

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

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

  or

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

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

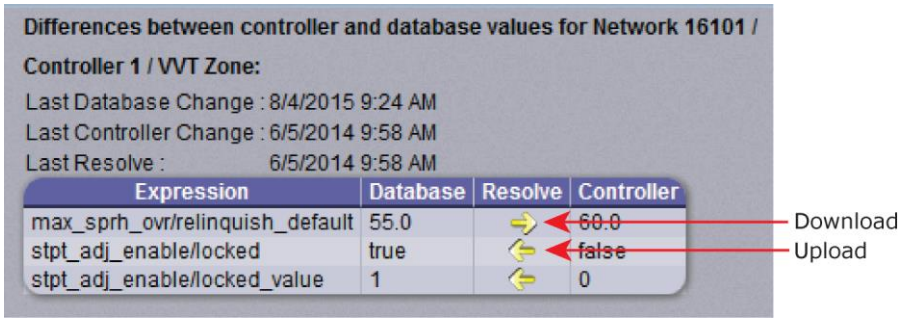
To resolve a mismatch

1 Go to one of the following:

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

2 Click one of the following:

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



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

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

Managing setpoints

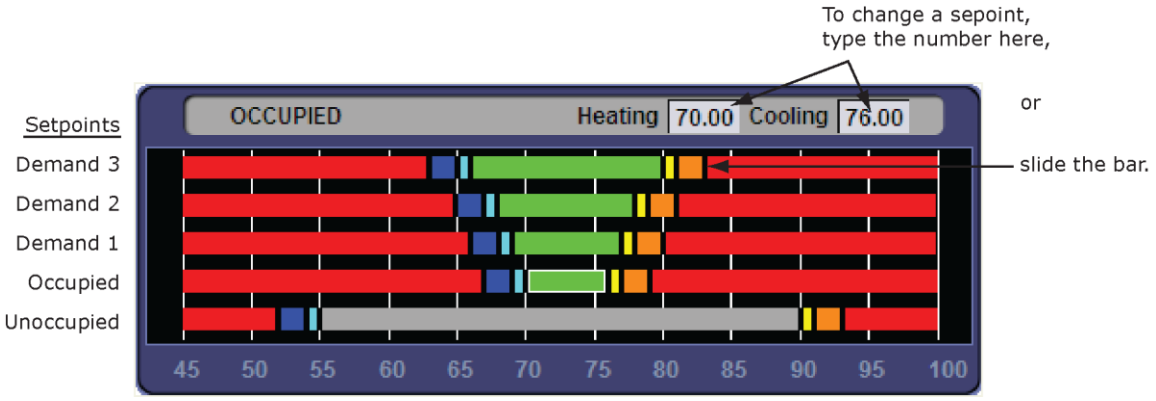
The **Setpoint** graphic shown on a standard equipment graphic indicates the base setpoint values (Occupied High/Low, Unoccupied High/Low). The i-Vu® application reads these values back periodically, typically within 10 seconds. The timing can vary based on network traffic, the number of controllers 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**.

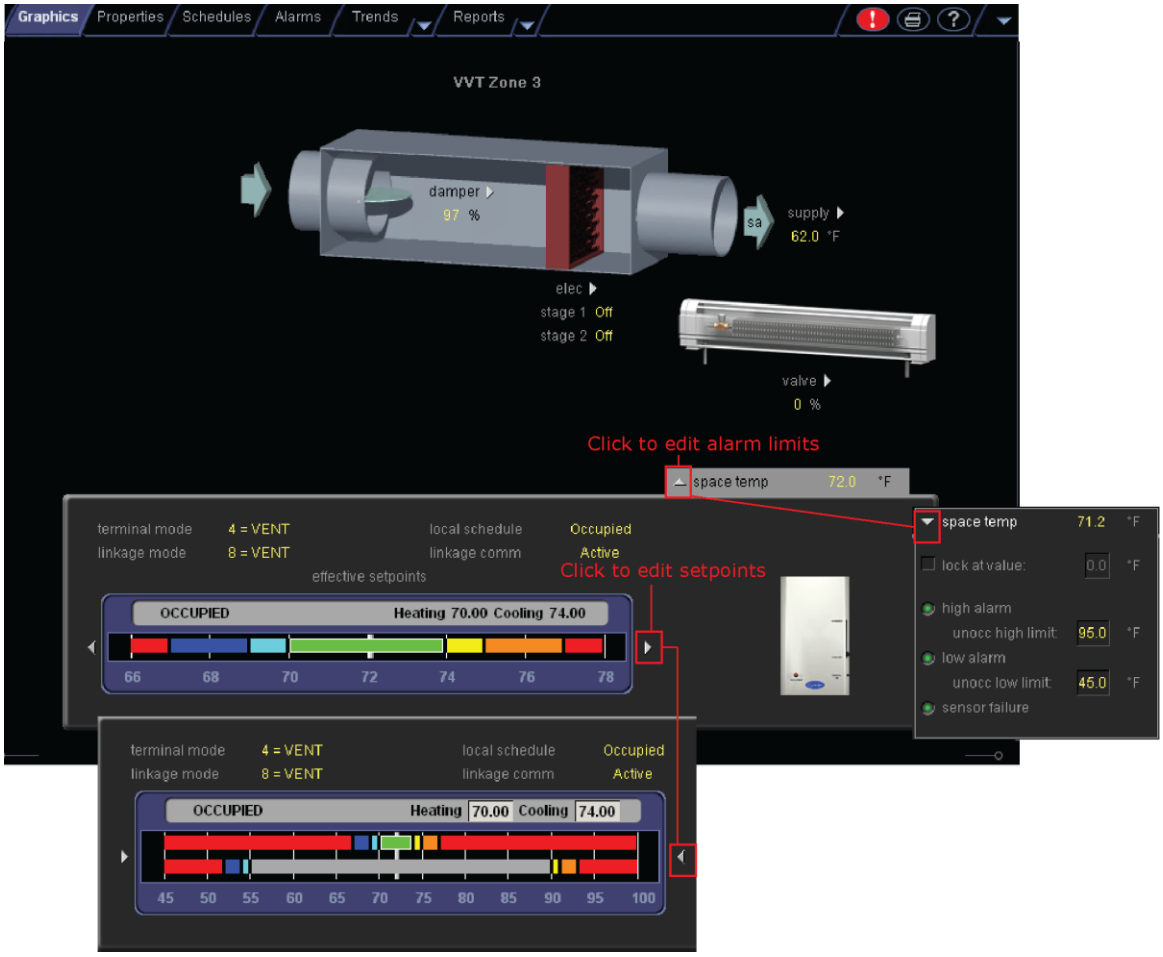
NOTE Power and Standard operators may only edit **Occupied/Unoccupied** and **Heating/Cooling** setpoints. They cannot edit **Demand** levels or more detailed setpoint parameters.

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
	Gray	Temperature is within the Unoccupied Low and High Setpoint
	Light Blue	Temperature is less than 2°F below the Occupied Low Setpoint
	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



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**
   - The setpoint microblock pop-up on a **Logic** page
   - A **Graphics** page (Click a setpoint trend graph control to access the editable setpoint bar.)

2 Make changes on a programmed setpoint bar by either:
   - Clicking and dragging the segment or the gap between segments
   - Typing new values in the **Heating** and **Cooling** fields

3 Click **Accept**.

Demand Control

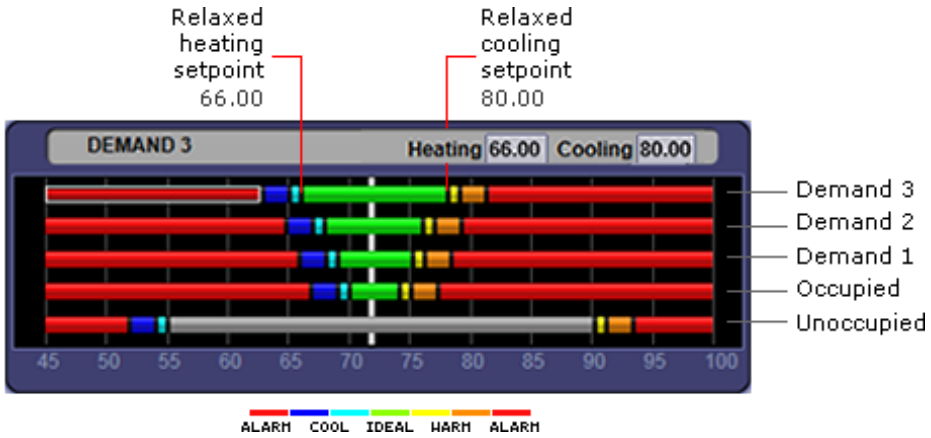
Demand Control is a cost-saving strategy that saves energy while maintaining comfort in the following ways:

- 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.

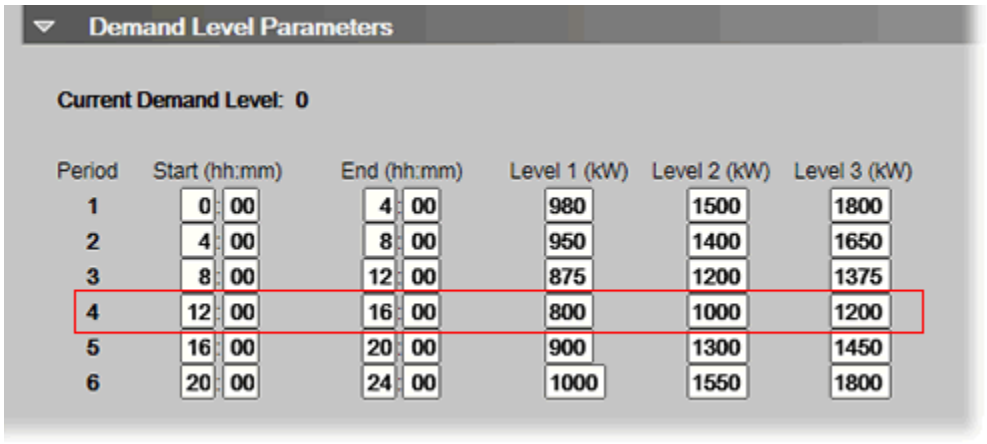
2 Select **Properties** > **Control Program** and expand the **Demand Level Parameters** section.

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 uses Demand Level 1 setpoints. If the demand exceeds 1000 kW/hr, the i-Vu® system uses Demand Level 2 level setpoints and so on.



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

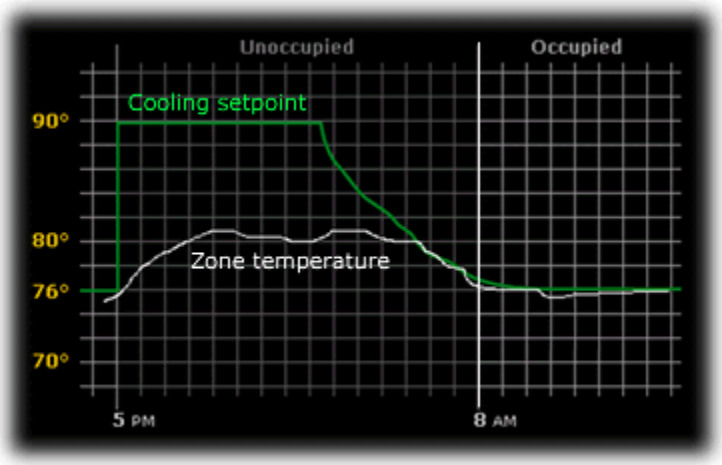
Optimal Start adjusts the effective setpoints to achieve the occupied setpoints by the time scheduled occupancy begins.The Optimal Start recovery period may begin as early as 4 hours prior to occupancy. The algorithm works by moving the unoccupied setpoints toward the occupied setpoints. The rate at 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 does 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:

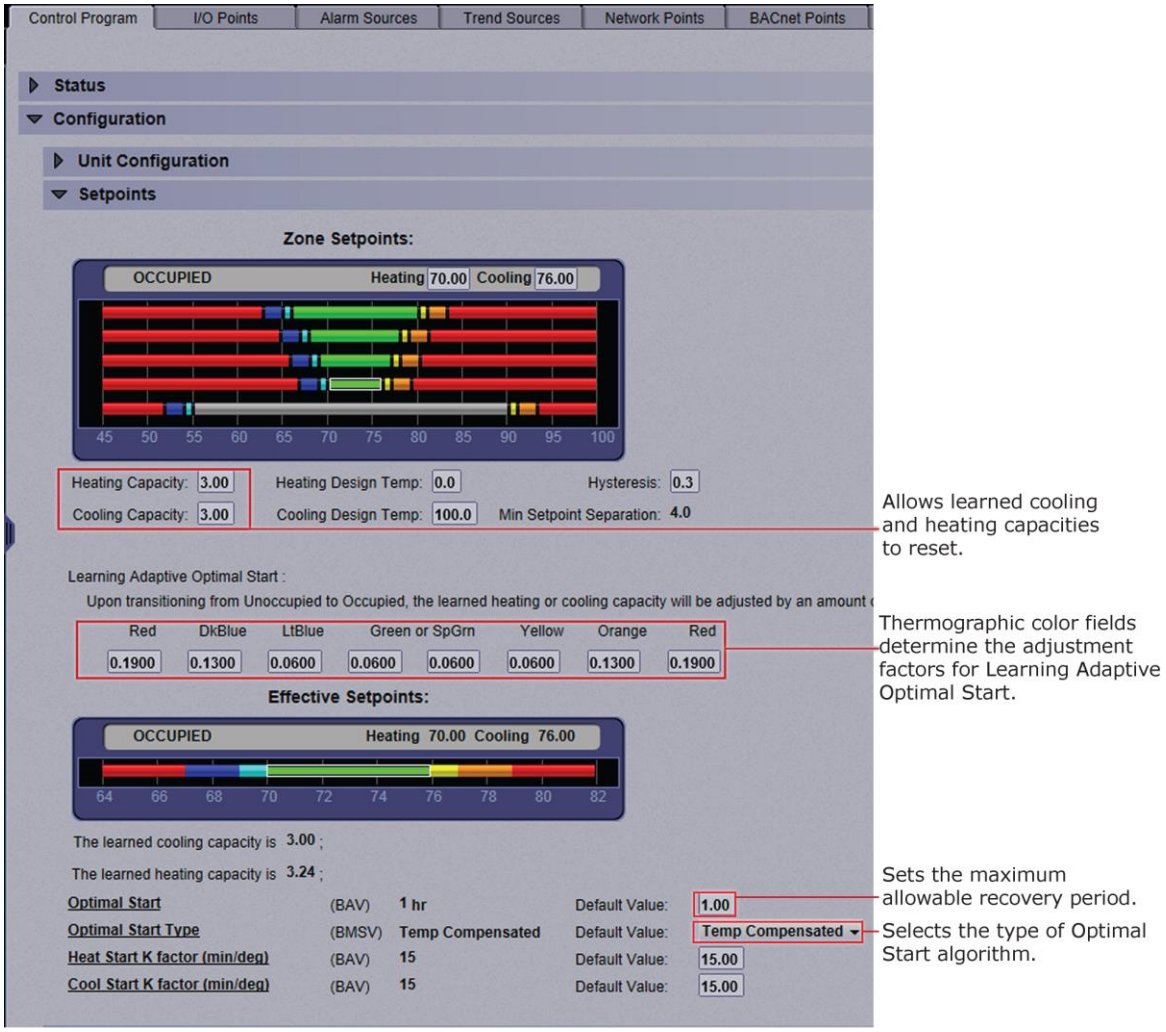
1 In the navigation tree, select the equipment that you want to change.

2 Click **Properties** page > **Control Program** tab > **Configuration** > **Setpoints**.

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



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.

Setting up i-Vu® client devices and web browsers

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

Computers

The client computer should have at least:

- Quad core processor
- 4 GB RAM
- Communications link of 100 Mbps or higher

The i-Vu® application will work with slower computers and slower links, but the results may not be satisfactory.

A computer with this operating system...	Supports these web browsers...
Windows®	Google™ Chrome™ v84.0 or later [1]
	Microsoft® Edge v84 or later
	Mozilla® Firefox® v79.0 or later
Mac® OS X® (Apple® Mac only)	Safari® v11 or later [2]
	Google Chrome v84.0 or later
	Mozilla Firefox v79.0 or later

1 Best performance

2 Best performance unless browser is running on a Mac® Mini or a MacBook:

WARNING If machine is running Mountain Lion 10.8x with an integrated Intel HD 400 graphics card, it will experience display issues. Use one of these workarounds for better performance:

- If an additional NVIDIA graphics card is available, manually switch the graphic card setting in MAC® OS X® to use that card.
- If not, use Google™ Chrome™ v84.0 or later.

Mobile devices

Device type	Platform support
Smart phone	Android™, iOS
Tablet	Android™, iOS, Surface™

NOTE Some functionality may be limited by the capability of the mobile device and operating system.

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

- Set the monitor's screen resolution to a minimum of 1920 x 1080 with 32-bit color quality
- You may want to disable the computer's navigation sounds.

Mac only

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

Computer settings	**To change setting...**
Enable right-clicking to see right-click menus:	
On a Mac	**1** Select **System Preferences** > **Mouse**. **2** Click the drop-down list that points to the mouse's right-click button, then select **Secondary Button**.
On a MacBook	**1** Select **System Preferences** > **Trackpad**. **2** Enable **Secondary click**.

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

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

To set up and use Microsoft Edge

The instructions below are for Microsoft® Edge.

Web browser settings	To set in Microsoft Edge...
Do not block cookies	1 Click ... to display the Actions droplist. 2 Select **Settings** > **Site Permissions** > **Cookies**.
Disable web browser's pop-up blockers *	1 Click ... to display the Actions droplist. 2 Then select **Settings** > **Site Permissions** > **Pop-ups and redirects**.

To...	Do the following...
Maximize the web browser window *	Use the minimize/maximize button in the top right corner of the browser window.
Have 2 different users logged in to the i-Vu® system on the same computer *	1 Click ... to display the Actions droplist. 2 Select **New Window**.
Clear browser cache	1 Click ... to display the Actions droplist. 2 Select **Settings** > **Privacy, Search, and Services** > **Clear browsing data**. 3 Click **Choose what to clear**. 4 Click **Clear now**.

* Does not apply to Microsoft Edge on a phone.

To set up and use Mozilla Firefox

NOTES

- The instructions below are for Mozilla® Firefox® v60.0 on a Windows operating system. Other versions may vary slightly. See your web browser's Help if necessary.
- If the menu bar is not visible, right-click on the window's title bar, and then select **Menu bar**.
- If a message appears in the 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...
Disable Pop-up blocker	**1** Click **Tools** > **Options** > **Privacy & Security**. **2** Under **Permissions**, click **Exceptions** next to **Block pop-up windows**. **3** Type `http://` (or `https://`) and then the server name or IP address of your system. **4** Click **Allow** and then **Save Changes.**
Enable JavaScript	**1** In the address bar, type `about:config`, and then press **Enter**. **2** Click **I accept the risk**. **3** In the **Search** bar, type `javascript.enabled`. **4** If the value field shows **true**, JavaScript is enabled. If it shows **false**, right-click **javascript:enabled**, and then select **Toggle**.
Add-ons Manager	Select **Tools** > **Add-ons** > **Extensions**. On this page, you can enable/disable installed add-ons such as: • Adobe® Acrobat® Reader (to view PDF's) • QuickTime Plug-in (to play audible alarms) Only installed Firefox add-ons appear in the list.

To...	Do the following...
Maximize the web browser window	Press **F11** to turn full-screen mode on\off.
Clear browser cache	**1** Click **Tools** > **Options** > **Privacy & Security**. **2** Under **Cookies and Site Data**, click **Clear Data**. **3** Click **Clear**.
Have 2 different users logged in to the 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™ v66.0. 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	1 Click ⋮ on the browser toolbar. 2 Select **Settings**. 3 Click **Advanced** at the bottom of the page. 4 Under **Privacy and security**, click **Content settings**. 5 Under **Pop-ups** > **Allow**, click **ADD**, and then type http:// (or https://) and then the server name or IP address of your system.

To...	Do the following...
Clear browser cache	1 Click ⋮ on the browser toolbar. 2 Select **More tools** > **Clear browsing data**. 3 Select a time range in the drop-down list. 4 Check the types of information that you want to remove. 5 Click **CLEAR DATA**.
Maximize the web browser window	Press F11 on your keyboard to turn full-screen mode on/off.
Have 2 different users logged in to the i-Vu® system on the same computer	Start a new web browser session. Click ⋮, then select **New incognito window**.

On Chrome for Android

NOTE The following settings are based on Android v11 - options may vary with versions.

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

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

To set up and use Safari

NOTES

- The instructions below are for Safari® v11. Other versions may vary slightly. See your web browser's Help if necessary.
- We recommend that you do not run Safari in full-screen mode. If you do, i-Vu® pop-ups 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** > **File** > **New window**

On an Apple® iPad

Web browser settings	To set on the iPad...
Disable pop-up blocker	**Settings**> **Safari** > set **Block pop-ups** to **Off**
Enable JavaScript	**Settings** > **Safari** > set **JavaScript** to **On**

TIP Re-enable popup blocking on your device when not using our software.

To...	Do the following...
Clear browser cache	**Settings** > **Safari** > **Clear History**

TIP Re-enable popup blocking on your device when not using our software.

On an Apple® iOS 12.2

Web browser settings	To set on the iPhone...
Enable JavaScript	**Settings** > **Safari** > **Advanced**

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 69) - user's login and navigation tree preferences
- *System Settings* (page 70)
  - *General* (page 70)
  - *Security* (page 74)
  - *Communications* (page 75)
  - *Scheduled Tasks* (page 76)
  - *Daylight Saving* (page 77)
  - *Add-ons* (page 81)
- *Operators* (page 10) - operator passwords, levels of access (roles), menu starting location
- *Privilege Sets* (page 10)
- *Operator Groups* (page 15)
- *Categories* (page 30) - Schedule, Alarm, Graphic, Property, Trend, Report
- ACxelerate
- Scheduled Reports
- Semantics
- Connections - To set up a BACnet/IP connection in the i-Vu® interface
- *Services* (page 3)
- *License Administration* (page 78)
- *Update* (page 79)
- Client Installs - download Sun's Java VM. See *Setting up a computer* (page 62) and Alarm Popup Application in the i-Vu® Help.

My Settings

On the **My Settings** page, you can change settings such as your password and viewing preferences.

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 password and then confirm. Limit is minimum of 8 and maximum 40 characters of any type.
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	Check **Non-critical alarms** or **Critical alarms** if you want the system to audibly notify you when that type of alarm is received. You can specify a different sound file. • Internet Explorer, Firefox, and Safari support .wav, .mp3, or .au files. • Google Chrome supports .wav or .mp3 files. 1 Put your file in the **webroot_common\lvl5\sounds** folder. 2 In the **Sound File** field, replace **normal_alarm.wav** or **critical_alarm.wav** with the name of your sound file. **NOTE** You can put your sound file anywhere under the **i-Vu_Pro_x.x** folder, but you must change the path in the **Sound File** field.

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**
- **System Language**

You can edit or use the following fields and buttons.

Field	Notes
System Information	
System Statistics button	Click to see the following system information: • Number of controllers • Number of controllers that can run control programs • Number of points, regardless of vendor • Number of trend sources in database • Number of trend samples in database
Levels displayed in paths	The number of levels displayed in i-Vu® paths. For example, if **Node Name Display Depth** is set at: 2, a typical path might be ..\AHU-1\RA Temp 3, a typical path might be ..\Atlanta R&D\First Floor\AHU-1 **NOTE** Changing this field does not take effect until you restart the i-Vu Server application.
Use metric units for CCN tables and control	Check to use metric values.
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: • **12-hour clock** (Example: 4:34 pm) • **24-hour clock** (Example: 16:34)
Date Format	Select the format you want the system to use.

Field	Notes
Time Sync	Click to immediately synchronize the time on all IP network controllers in the system database to the i-Vu® server's time. Check **Enable time synchronization of controllers daily at____** to set daily time synchronization occurs daily if the field on the *Scheduled Tasks tab* (page 76) is enabled. Automatically synchronizes the time on all equipment to the time on the server, adjusting for different time zones and Daylight Saving Time. We recommend that you check this field. The 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. **CAUTIONS** • 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. **NOTES** • 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.
Reports	
Display Date and Time in	Choose whether to display the date and time together in a single column or to have separate columns for each.
Display preceding zeros in Date and Time	**Yes—**displays preceding zeros. Ex. 01/01/2023 02:05:09 PM **No—**omits preceding zeros. Ex. 1/1/2023 2:05:09 PM
Display missing Trend data as	You can specify text of up to 20 characters to appear in the report when there is no tend data. The default is a dash "-".

Field	Notes
Report logo	1 Click **Choose File**, and select your logo file. The logo must be a JPEG or PNG of less than 2 MB in size. 2 Click **Upload**. A preview of the logo appears to the right. You can review the preview to ensure the correct file was uploaded.  **TIPS** • For best results, use a transparent or white background on your logo. • The logo is resized to fit within a 100 x 100 pixel area. We recommend that you upload a logo of this size or larger.
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. **NOTE** When using location-dependent security, users only receive alarms for locations they are allowed to access.
Schedules	
Disable Schedules	If your system has no need to run schedules, check this box so that the Schedules feature is no longer visible in the i-Vu® interface.
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.
Display gap in graph line for missing data	Check to show a gap if trend data is missing.
Source Files	
All Source Files	Use to export source files to a .zip file that can be imported into another i-Vu® or Field Assistant system. Source files include: • Control programs (.equipment files only) • Drivers • Graphics (.view files only) • Touchscreen files • BACview® files • Report design files for Equipment Values or Trend Sample reports **NOTE** If import detects a difference between a database file and an import file with the same name, import does not overwrite the database file. A message lists any file differences so that you can resolve them. See Commissioning equipment using Field Assistant.
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.

Field	Notes
Clippings	
Import	Click button to import clipping files, which include: • 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 **NOTES** • Does not include operators or alarms • A clipping containing CCN controllers does not include the CCN tables. When importing a clipping containing CCN devices, you must re-scan the table.
Email Server Configuration	The information in this section is used by the Send email alarm action and used to email a Scheduled Report.
From	Enter a valid address if required by your mailserver.
Mail Host	The mailserver's address. This can be an IP address or a system name, such as "mail.mycompany.com".
Mail Host Port	Change this field if using a port other than the default port 25.
Mail Host Security Options	Select the type of security the mailserver uses. • **Cleartext (SMTP)** – Uses the SMTP protocol to send as clear text over TCP/IP • **Secure SSL (SMTP with SSL)** – Uses SSL, a communication protocol that provides data encryption • **Secure TLS (STARTTLS)** – Uses TLS, but does not begin encryption until the i-Vu® application issues STARTTLS command
Specify Mail User for Mail Host Authentication	Select if your mailserver requires a username and password.
Test connection	Click to have the i-Vu® application try to connect to the email server. A message will appear below this button stating if the connection was successful or if it failed.

Security tab

Field	Notes
Logging	
Log audit data to file	Records operator activities and some system activities (such as opening and closing the database or automatic deletions) in a text file. The default file is **auditlog.txt** stored in the <system_name> folder. You can change the file name and include a different path. To prevent the file from growing too large as new data is appended, you can archive the data to another text file by selecting an archive frequency in the **Archive log file contents** field. The archive file is **auditlog**_yyyy_mm_dd**.txt**, where *yyyy_mm_dd* is the creation date of the archive file. This file is created in the same location as **auditlog.txt**. **NOTE** If you do not archive the log file contents, you should manually delete the oldest entries.
Log audit data to database	Records audit data in a database named **audit.mdb** that can be accessed by third-party software. **NOTE** For Access, MSDE, and Derby, the database is automatically created. An Access database is named **audit.mdb**; a MSDE database is named **audit.mdf**. The Derby database consists of multiple files in a folder called **audit**. For MySQL, SQL Server, or PostgreSQL, you must create the database manually.
Delete database entries older than ____ days	Automatically deletes entries in the database that are older than the number of days you specify.
Log errors for invalid URLs	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 *Location-dependent operator access* (page 19) for information on **Change Policy**.
Remote Access	
Allow remote file management	Lets you access the system directory through **Resource Management** in  > **System Options**. **NOTE** Requires the **System Administration** privilege.
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 removes lockouts.

Field	Notes
Use advanced password policy	You can place specific requirements on passwords to increase security. See *Advanced password policy* (page 23).
Permissions	
Permissions	When control programs, views, touchscreen, and BACview® files are created by an original equipment manufacturer (OEM), they cannot be used in the 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_Pro_ 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. **NOTE** Requires a connection/server restart.

Enable BMS Network Port Object Modification	Allows you to write to the following network port object properties: • bacnet_ip_mode • fd_bbmd_address • fd_subscription_lifetime Changes to these properties are password protected. You must create a password by typing it into the **Activate Changes Password** field. Enter this password when prompted. **NOTE** Requires a connection/server restart.

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 the time specified in the **Keep historical trends for ___ days** field on the **General** tab.
Check for expiring BACnet/SC certificates daily at ____	Triggers an alarm when a BACnet/SC Hub certificate will expire within the Warning or Critical thresholds. While in the Warning threshold, the alarm repeats once per week. In the Critical threshold, the alarm repeats daily and every operator gets a pop-up message when they log in.

Daylight Saving tab

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

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 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 *Internet Assigned Numbers Authority* (*http://java.sun.com/javase/downloads*) website and navigate to **Time Zone Database**.
2. Download the **tzdata**< version >**.tar.gz** file.
3. In the i-Vu® interface, click  , then select **System Options** > **Daylight Saving** and then click **Import**.
4. Browse to the **tzdata**< version >**.tar.gz** file, select it, and then click **Open**.
5. Click **Continue**. This restarts the i-Vu® application.
6. On the **System Options** > **Daylight Saving** tab, click **Update**.

To set up site properties

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

Field	Notes
Enable Timesync	Daily synchronizes the time in the site's controllers with the server's time, adjusting for different time zones and Daylight Saving Time. Synchronization occurs each day at the time specified in the field **Enable time synchronization of controllers daily at** on the **System Options** > **System Settings** > **General** (page 70) tab > under **Time**. **CAUTION** Make sure that your server's time and time zone setting are correct. Also, make sure that the site's time zone setting is correct in SiteBuilder.
View DST Dates	If the site's time zone (set in SiteBuilder) uses Daylight Saving Time, you can click **View DST Dates** to see DST information and time change dates.
Group Cache Controller	The designated router where colors are cached when peer caching is enabled in SiteBuilder.
Device Password (**Installer** tab)	Applies only to devices with a drv_gen5 driver. This password allows access to the controller setup pages from the Service Port. Once it is set, no one can connect to the Service Port and reach the pages without the password.

Registering and downloading your i-Vu® license

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

1 Log in to the Carrier Community Portal website.

NOTES

- Only Carrier authorized personnel may access the Community Portal website. To set up your account, please contact Control Systems Support with the following information: name, phone number, e-mail address, office address, and your password of choice.
- If you are an end-user or contractor, please contact your local Carrier office to obtain your license.

2 Click **Order Management** > **Licenses & Subscriptions** > **Software Licenses**, then click the link.

3 Expand the section containing the unregistered license(s) indicated by the  symbol on the right side of the blue bar.

4 Click on the row that shows **unregistered** in the **Registration Status** column.

5 In **License Details**, complete the fields under **Owner Information** and **Site Information**.

6 Click **Register License**.

7 Check **I agree to the terms of use**.

8 Click **Download License** and then save the .properties file to a convenient location to use when installing the i-Vu® Pro application.

To apply the license to the i-Vu® application

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 **System Options** > **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 SAL 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.

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.

2 Click  , 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  , 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 Control Systems Support to determine if any of them have been updated.

3 Click 

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 and controllers

1 On the i-Vu® navigation tree, right-click the router or controller to update and select **Driver Properties**.

2 Select **Properties** tab > **Update** tab > **Add New Driver** tab.

3 If the database contains two or more controllers, select which routers to change:

- This controller only
- All controllers on this network that use the current driver version
- All controllers in the system that use the current driver version

4 Click **Update**.

5 Click **Save**.

NOTES

- Check **Stage driver in controller** to stage the driver to the controller before installing it. Use this option to avoid interrupting controller function when installing the driver.
- Click **Delete Unused** to delete all unused drivers in <system_name>**drivers**.

Step 3: 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 **Devices** > **CCN Discovery** and re-scan any controllers that need to be updated by checking **Rescan Controllers Selected Below for Configuration Changes** and clicking **Start Scan**.

Step 4: Apply the update to the routers and controllers

1 Select the **System**  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 are not 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 Downloads page. Click the **Start** button.

NOTES

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

Add-ons

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

Some add-ons have been updated for compatibility with the i-Vu® v7.0 application . Be sure that you have the latest version of the add-ons that were used in the previous i-Vu® version.

By default, the i-Vu® application allows only signed add-ons that have been approved by Carrier®. If needed, you can override this setting in SiteBuilder by going to **Configure** > **Preferences** > **Web Server**, and checking **Allow unsigned add-ons.** However, unsigned add-ons are not supported.

To install an add-on

1 Save the add-on's file (.addon or .war) to your computer.

2 Click  , then select **System Options** > **Licenses & Add-ons**.

3 Click **Browse,** and then open the file, or drag and drop the file into **Drop File Here**.

4 Click **Install**. After a few seconds, the add-on appears in the **Installed** table, and is 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 `http://<system_name>/override`, or `http://<system_IP_address>/override`
Version	The version is shown if the author provided the information in the add-on.

Column	Notes
License	Displays: <License State> - <Expiration> - <Serial Number Match Check> - <Dealer License Check> **License State** • **Licensed**: the add-on license is present • **Licensed Required**: the add-on requires a license and license is not present • **License Not Required**: a license is not required • **License Optional**: a license is optional • **License Not Required For Cloud**: a license is not required if using a Cloud system **Expiration** ○ **(blank)**: Addon license does not have expiration date. ○ **Expires xx/xx/xxxx**: Addon license has expiration date which is still in future. ○ **Expired**: Addon license has expiration date which has past. **Serial Number Match Check** • **(blank)**: Add-on license and product serial numbers match. • **Serial number mismatch**: Add-on license and product serial numbers do not match. This causes a Startup Error when enabling the add-on. **Dealer License Check** • **(blank)**: Product is not running with Dealer License. • **Dealer license present**: Product is running with Dealer License.
Status	If this column shows: ○ **Running**: You can open the add-on in a web browser. ○ **Disabled**: Click **Enable** to run the add-on. ○ **Startup error**: Select the table row to see an explanation of the error under **Details**.

5 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.

If a license is required for this add-on, you must follow the instructions below. Before installing the add-on at the customer's site the license must be purchased. Then the software license must be registered and downloaded for that site.

Obtain the add-on license

1 Go to the Carrier® Partner Community website.

2 Select **License Manager**> **Software Licenses** > **BAS License Manager - For i-Vu 2.5 and later**.

3 Click on the blue bar for the add-on to expand it.

4 Click on the row with the license information.

5 Check **I agree to the terms of use**.

6 Click **Download License**, then save the license file to a disk or to your hard drive.

Apply the add-on license in the i-Vu® application

1 On the **System Configuration** tree , go to **Licenses & Add-ons**.

2 On the **Licenses & Add-ons** tab, click **Choose File,** and then open the file.
or
Drag and drop the file in the **Drop File Here** box.

3 Click **Install**.

NOTES

- Do not edit any part of this license file; editing a license file invalidates the license.
- After applying the license, the add-on starts automatically, and the **Status** column shows **Running**.
- Store the license in a safe location.

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

NOTE This procedure does 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**.

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*
4/11/25	Update the SAL library	Updated procedure for new interface	X-PM-RD-E-RD
	To edit a graphic on an i-Vu® client		
	To edit a graphic from the i-Vu® application to ViewBuilder		
	To attach a graphic in the i-Vu® interface		
	Recording reasons for edits		
	Communications tab	Added row for Enable BMS Network Port Object Modification	X-AE-SS-E

* For internal use only